# Vineyards at Deer Creek

## Draft Environmental Impact Report

Volume II of II (Appendices B - I)

July 2019

SCH # 2019049008

# Appendix B

# Air Quality and GHG Data

Vineyards at Deer Creek - Phase 1 - Contra Costa County, Summer

# Vineyards at Deer Creek - Phase 1

**Contra Costa County, Summer**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Other Asphalt Surfaces | 495.00 | 1000sqft | 11.36 | 495,000.00 | 0 |
| Parking Lot | 260.00 | Space | 2.34 | 104,000.00 | 0 |
| City Park | 56.25 | Acre | 56.25 | 2,450,250.00 | 0 |
| Recreational Swimming Pool | 2.00 | 1000sqft | 0.05 | 2,000.00 | 0 |
| Condo/Townhouse High Rise | 125.00 | Dwelling Unit | 1.95 | 125,000.00 | 358 |
| Retirement Community | 475.00 | Dwelling Unit | 95.00 | 475,000.00 | 1359 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 58 |
| **Climate Zone** | 4 | | | **Operational Year** | 2023 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 146 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - Per PG&E CRSR

Land Use - Phase 1
Parking: assumed 2 spaces for 125 DUs, plus 10 extra spaces for recreation uses
Other asphalt surfaces is American Ave extension
City Park is open space/ agricultural uses

Construction Phase - Anticipated schedule

Off-road Equipment - Estimated equipment use

Off-road Equipment -

Off-road Equipment - No demolition

Off-road Equipment - Estimated equipment use

Off-road Equipment -

Off-road Equipment - anticipated equipment

Off-road Equipment -

Off-road Equipment -

Trips and VMT - vendor trips would be lower since city park was used to model the proposed natural open space, informal parkland, low impact trails,

Demolition - No demolition

Grading - Balanced between all phases

Vehicle Trips - Per Fehr and Peers TIA 2019, blended rate used

Woodstoves - Per BAAQMD Regulation 6, Rule 3

Energy Use -

Land Use Change -

Construction Off-road Equipment Mitigation - Per BAAQMD basic and advanced control measures

Mobile Land Use Mitigation - Green building design elements include narrower roadways

Mobile Commute Mitigation -

Area Mitigation - No hearth, low VOC cleaning supplies, low VOC paint, and electric landscape equipment

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblAreaMitigation | UseLowVOCPaintNonresidentialExteriorValue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintNonresidentialInteriorValue | 100 | 10 |
| tblAreaMitigation | UseLowVOCPaintParkingCheck | False | True |
| tblAreaMitigation | UseLowVOCPaintParkingValue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintResidentialExteriorValue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintResidentialInteriorValue | 100 | 10 |
| tblConstDustMitigation | CleanPavedRoadPercentReduction | 0 | 6 |
| tblConstDustMitigation | WaterUnpavedRoadMoistureContent | 0 | 12 |

| | | | |
|---|---|---|---|
| tblConstDustMitigation | WaterUnpavedRoadVehicleSpeed | 0 | 15 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 8.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 6.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 4.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 12.00 |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstructionPhase | NumDays | 220.00 | 499.00 |
| tblConstructionPhase | NumDays | 3,100.00 | 573.00 |
| tblConstructionPhase | NumDays | 200.00 | 0.00 |
| tblConstructionPhase | NumDays | 310.00 | 110.00 |

| | | | |
|---|---|---|---|
| tblConstructionPhase | NumDays | 220.00 | 22.00 |
| tblConstructionPhase | NumDays | 120.00 | 10.00 |
| tblFireplaces | NumberGas | 18.75 | 40.00 |
| tblFireplaces | NumberGas | 71.25 | 152.00 |
| tblFireplaces | NumberWood | 21.25 | 0.00 |
| tblFireplaces | NumberWood | 80.75 | 0.00 |
| tblOffRoadEquipment | HorsePower | 203.00 | 80.00 |
| tblOffRoadEquipment | LoadFactor | 0.36 | 0.38 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 4.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 3.00 |
| tblProjectCharacteristics | CO2IntensityFactor | 641.35 | 146 |
| tblTripsAndVMT | VendorTripNumber | 564.00 | 364.00 |
| tblVehicleTrips | HO_TL | 5.70 | 8.90 |
| tblVehicleTrips | HO_TL | 5.70 | 8.90 |
| tblVehicleTrips | HS_TL | 4.80 | 7.50 |
| tblVehicleTrips | HS_TL | 4.80 | 7.50 |
| tblVehicleTrips | HW_TL | 10.80 | 16.80 |
| tblVehicleTrips | HW_TL | 10.80 | 16.80 |
| tblVehicleTrips | ST_TR | 22.75 | 0.00 |
| tblVehicleTrips | ST_TR | 9.10 | 0.00 |
| tblVehicleTrips | SU_TR | 16.74 | 0.00 |
| tblVehicleTrips | SU_TR | 13.60 | 0.00 |
| tblVehicleTrips | WD_TR | 1.89 | 0.00 |
| tblVehicleTrips | WD_TR | 4.18 | 4.80 |
| tblVehicleTrips | WD_TR | 33.82 | 0.00 |
| tblVehicleTrips | WD_TR | 2.40 | 4.80 |
| tblWoodstoves | NumberCatalytic | 2.50 | 0.00 |
| tblWoodstoves | NumberCatalytic | 9.50 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 2.50 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 9.50 | 0.00 |

## 2.0 Emissions Summary

### 2.1 Overall Construction (Maximum Daily Emission)

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2021 | 8.8215 | 67.8539 | 69.5214 | 0.2650 | 18.2141 | 2.8194 | 20.2595 | 9.9699 | 2.5938 | 11.8517 | 0.0000 | 26,860.7730 | 26,860.7730 | 2.8969 | 0.0000 | 26,895.5812 |
| 2022 | 27.3122 | 58.6102 | 78.8373 | 0.2945 | 19.3616 | 1.2298 | 20.5914 | 5.1913 | 1.1706 | 6.3619 | 0.0000 | 29,756.9977 | 29,756.9977 | 1.4436 | 0.0000 | 29,793.0877 |
| 2023 | 26.4287 | 48.3544 | 74.0503 | 0.2854 | 19.3617 | 1.0453 | 20.4070 | 5.1913 | 0.9945 | 6.1859 | 0.0000 | 28,846.5937 | 28,846.5937 | 1.3235 | 0.0000 | 28,879.6820 |
| **Maximum** | **27.3122** | **67.8539** | **78.8373** | **0.2945** | **19.3617** | **2.8194** | **20.5914** | **9.9699** | **2.5938** | **11.8517** | **0.0000** | **29,756.9977** | **29,756.9977** | **2.8969** | **0.0000** | **29,793.0877** |

**Mitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2021 | 7.5073 | 43.2950 | 70.6284 | 0.2650 | 15.7042 | 0.2835 | 15.9877 | 4.2827 | 0.2729 | 4.5107 | 0.0000 | 26,860.7730 | 26,860.7730 | 2.8969 | 0.0000 | 26,895.5812 |
| 2022 | 25.6422 | 41.8490 | 80.1895 | 0.2945 | 18.3751 | 0.2893 | 18.6644 | 4.9492 | 0.2780 | 5.2271 | 0.0000 | 29,756.9977 | 29,756.9977 | 1.4436 | 0.0000 | 29,793.0877 |
| 2023 | 24.9086 | 33.0981 | 75.5115 | 0.2854 | 18.3752 | 0.2380 | 18.6131 | 4.9492 | 0.2285 | 5.1777 | 0.0000 | 28,846.5937 | 28,846.5937 | 1.3235 | 0.0000 | 28,879.6820 |
| **Maximum** | **25.6422** | **43.2950** | **80.1895** | **0.2945** | **18.3752** | **0.2893** | **18.6644** | **4.9492** | **0.2780** | **5.2271** | **0.0000** | **29,756.9977** | **29,756.9977** | **2.8969** | **0.0000** | **29,793.0877** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **7.20** | **32.36** | **-1.76** | **0.00** | **7.87** | **84.09** | **13.05** | **30.32** | **83.62** | **38.87** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 17.5681 | 4.2873 | 51.1760 | 0.0263 | | 0.5748 | 0.5748 | | 0.5748 | 0.5748 | 0.0000 | 4,832.8388 | 4,832.8388 | 0.1771 | 0.0870 | 4,863.1816 |
| Energy | 0.1750 | 1.4958 | 0.6365 | 9.5500e-003 | | 0.1209 | 0.1209 | | 0.1209 | 0.1209 | | 1,909.5520 | 1,909.5520 | 0.0366 | 0.0350 | 1,920.8995 |
| Mobile | 5.0063 | 18.1773 | 63.0639 | 0.2425 | 22.0172 | 0.1719 | 22.1891 | 5.8901 | 0.1602 | 6.0503 | | 24,467.4224 | 24,467.4224 | 0.7233 | | 24,485.5040 |
| **Total** | **22.7494** | **23.9604** | **114.8764** | **0.2784** | **22.0172** | **0.8676** | **22.8848** | **5.8901** | **0.8559** | **6.7460** | **0.0000** | **31,209.8131** | **31,209.8131** | **0.9370** | **0.1220** | **31,269.5852** |

### Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 13.2831 | 0.4525 | 37.6769 | 1.7000e-003 | | 0.2043 | 0.2043 | | 0.2043 | 0.2043 | 0.0000 | 62.4659 | 62.4659 | 0.0451 | 0.0000 | 63.5921 |
| Energy | 0.1119 | 0.9564 | 0.4070 | 6.1000e-003 | | 0.0773 | 0.0773 | | 0.0773 | 0.0773 | | 1,220.8706 | 1,220.8706 | 0.0234 | 0.0224 | 1,228.1256 |
| Mobile | 4.3550 | 14.6034 | 44.7528 | 0.1648 | 14.6173 | 0.1194 | 14.7367 | 3.9105 | 0.1113 | 4.0217 | | 16,639.9117 | 16,639.9117 | 0.5269 | | 16,653.0852 |
| **Total** | **17.7501** | **16.0123** | **82.8366** | **0.1726** | **14.6173** | **0.4010** | **15.0183** | **3.9105** | **0.3929** | **4.3033** | **0.0000** | **17,923.2481** | **17,923.2481** | **0.5954** | **0.0224** | **17,944.8028** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **21.98** | **33.17** | **27.89** | **37.99** | **33.61** | **53.78** | **34.37** | **33.61** | **54.10** | **36.21** | **0.00** | **42.57** | **42.57** | **36.46** | **81.65** | **42.61** |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Demolition | Demolition | 1/1/2021 | 12/31/2020 | 5 | 0 | |
| 2 | Site Preparation | Site Preparation | 1/1/2021 | 1/14/2021 | 5 | 10 | |
| 3 | Grading | Grading | 1/15/2021 | 6/17/2021 | 5 | 110 | |
| 4 | Intrastructure Improvements | Trenching | 6/18/2021 | 9/17/2021 | 5 | 66 | |
| 5 | Paving | Paving | 9/18/2021 | 10/19/2021 | 5 | 22 | |
| 6 | Building Construction | Building Construction | 10/20/2021 | 12/31/2023 | 5 | 573 | |
| 7 | Architectural Coating | Architectural Coating | 2/1/2022 | 12/29/2023 | 5 | 499 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 495**

**Acres of Paving: 13.7**

**Residential Indoor: 1,215,000; Residential Outdoor: 405,000; Non-Residential Indoor: 4,500; Non-Residential Outdoor: 1,500; Striped**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Demolition | Excavators | 3 | 8.00 | 158 | 0.38 |
| Demolition | Rubber Tired Dozers | 2 | 8.00 | 247 | 0.40 |
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 4 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |

| | | | | | |
|---|---|---|---|---|---|
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 3 | 6.00 | 78 | 0.48 |
| Intrastructure Improvements | Excavators | 3 | 8.00 | 158 | 0.38 |
| Intrastructure Improvements | Rubber Tired Loaders | 3 | 8.00 | 80 | 0.38 |
| Intrastructure Improvements | Tractors/Loaders/Backhoes | 3 | 8.00 | 97 | 0.37 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Demolition | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 10 | 25.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 1,714.00 | 364.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 3 | 343.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Intrastructure Improvements | 9 | 23.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

## 3.3 Site Preparation - 2021

## Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 18.0663 | 0.0000 | 18.0663 | 9.9307 | 0.0000 | 9.9307 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.8882 | 40.4971 | 21.1543 | 0.0380 | | 2.0445 | 2.0445 | | 1.8809 | 1.8809 | | 3,685.6569 | 3,685.6569 | 1.1920 | | 3,715.4573 |
| **Total** | **3.8882** | **40.4971** | **21.1543** | **0.0380** | **18.0663** | **2.0445** | **20.1107** | **9.9307** | **1.8809** | **11.8116** | | **3,685.6569** | **3,685.6569** | **1.1920** | | **3,715.4573** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0604 | 0.0349 | 0.4624 | 1.4600e-003 | 0.1479 | 9.3000e-004 | 0.1488 | 0.0392 | 8.5000e-004 | 0.0401 | | 145.1587 | 145.1587 | 3.2900e-003 | | 145.2410 |
| **Total** | **0.0604** | **0.0349** | **0.4624** | **1.4600e-003** | **0.1479** | **9.3000e-004** | **0.1488** | **0.0392** | **8.5000e-004** | **0.0401** | | **145.1587** | **145.1587** | **3.2900e-003** | | **145.2410** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fugitive Dust | | | | | 7.7233 | 0.0000 | 7.7233 | 4.2454 | 0.0000 | 4.2454 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.4656 | 2.0175 | 20.8690 | 0.0380 | | 0.0621 | 0.0621 | | 0.0621 | 0.0621 | 0.0000 | 3,685.6569 | 3,685.6569 | 1.1920 | | 3,715.4573 |
| **Total** | **0.4656** | **2.0175** | **20.8690** | **0.0380** | **7.7233** | **0.0621** | **7.7854** | **4.2454** | **0.0621** | **4.3075** | **0.0000** | **3,685.6569** | **3,685.6569** | **1.1920** | | **3,715.4573** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0604 | 0.0349 | 0.4624 | 1.4600e-003 | 0.1402 | 9.3000e-004 | 0.1411 | 0.0373 | 8.5000e-004 | 0.0382 | | 145.1587 | 145.1587 | 3.2900e-003 | | 145.2410 |
| **Total** | **0.0604** | **0.0349** | **0.4624** | **1.4600e-003** | **0.1402** | **9.3000e-004** | **0.1411** | **0.0373** | **8.5000e-004** | **0.0382** | | **145.1587** | **145.1587** | **3.2900e-003** | | **145.2410** |

## 3.4 Grading - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 10.7943 | 0.0000 | 10.7943 | 3.8255 | 0.0000 | 3.8255 | | | 0.0000 | | | 0.0000 |
| Off-Road | 6.0501 | 67.8054 | 44.8878 | 0.0923 | | 2.8181 | 2.8181 | | 2.5927 | 2.5927 | | 8,942.8665 | 8,942.8665 | 2.8923 | | 9,015.1741 |
| **Total** | **6.0501** | **67.8054** | **44.8878** | **0.0923** | **10.7943** | **2.8181** | **13.6124** | **3.8255** | **2.5927** | **6.4182** | | **8,942.8665** | **8,942.8665** | **2.8923** | | **9,015.1741** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0840 | 0.0485 | 0.6422 | 2.0200e-003 | 0.2054 | 1.2900e-003 | 0.2067 | 0.0545 | 1.1900e-003 | 0.0557 | | 201.6093 | 201.6093 | 4.5700e-003 | | 201.7236 |
| **Total** | **0.0840** | **0.0485** | **0.6422** | **2.0200e-003** | **0.2054** | **1.2900e-003** | **0.2067** | **0.0545** | **1.1900e-003** | **0.0557** | | **201.6093** | **201.6093** | **4.5700e-003** | | **201.7236** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 4.6146 | 0.0000 | 4.6146 | 1.6354 | 0.0000 | 1.6354 | | | 0.0000 | | | 0.0000 |
| Off-Road | 1.1344 | 4.9156 | 46.6696 | 0.0923 | | 0.1513 | 0.1513 | | 0.1513 | 0.1513 | 0.0000 | 8,942.8665 | 8,942.8665 | 2.8923 | | 9,015.1741 |
| **Total** | **1.1344** | **4.9156** | **46.6696** | **0.0923** | **4.6146** | **0.1513** | **4.7658** | **1.6354** | **0.1513** | **1.7867** | **0.0000** | **8,942.8665** | **8,942.8665** | **2.8923** | | **9,015.1741** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0840 | 0.0485 | 0.6422 | 2.0200e-003 | 0.1947 | 1.2900e-003 | 0.1960 | 0.0518 | 1.1900e-003 | 0.0530 | | 201.6093 | 201.6093 | 4.5700e-003 | | 201.7236 |
| **Total** | **0.0840** | **0.0485** | **0.6422** | **2.0200e-003** | **0.1947** | **1.2900e-003** | **0.1960** | **0.0518** | **1.1900e-003** | **0.0530** | | **201.6093** | **201.6093** | **4.5700e-003** | | **201.7236** |

## 3.5 Intrastructure Improvements - 2021

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 2.0503 | 18.9273 | 22.8559 | 0.0326 | | 1.1574 | 1.1574 | | 1.0648 | 1.0648 | | 3,153.5114 | 3,153.5114 | 1.0199 | | 3,179.0091 |
| **Total** | **2.0503** | **18.9273** | **22.8559** | **0.0326** | | **1.1574** | **1.1574** | | **1.0648** | **1.0648** | | **3,153.5114** | **3,153.5114** | **1.0199** | | **3,179.0091** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0772 | 0.0446 | 0.5908 | 1.8600e-003 | 0.1889 | 1.1900e-003 | 0.1901 | 0.0501 | 1.0900e-003 | 0.0512 | | 185.4805 | 185.4805 | 4.2100e-003 | | 185.5857 |
| **Total** | **0.0772** | **0.0446** | **0.5908** | **1.8600e-003** | **0.1889** | **1.1900e-003** | **0.1901** | **0.0501** | **1.0900e-003** | **0.0512** | | **185.4805** | **185.4805** | **4.2100e-003** | | **185.5857** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.4011 | 1.7379 | 24.7317 | 0.0326 | | 0.0535 | 0.0535 | | 0.0535 | 0.0535 | 0.0000 | 3,153.5114 | 3,153.5114 | 1.0199 | | 3,179.0091 |
| **Total** | **0.4011** | **1.7379** | **24.7317** | **0.0326** | | **0.0535** | **0.0535** | | **0.0535** | **0.0535** | **0.0000** | **3,153.5114** | **3,153.5114** | **1.0199** | | **3,179.0091** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0772 | 0.0446 | 0.5908 | 1.8600e-003 | 0.1791 | 1.1900e-003 | 0.1803 | 0.0477 | 1.0900e-003 | 0.0488 | | 185.4805 | 185.4805 | 4.2100e-003 | | 185.5857 |
| **Total** | **0.0772** | **0.0446** | **0.5908** | **1.8600e-003** | **0.1791** | **1.1900e-003** | **0.1803** | **0.0477** | **1.0900e-003** | **0.0488** | | **185.4805** | **185.4805** | **4.2100e-003** | | **185.5857** |

## 3.6 Paving - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| Category | lb/day | | | | | | | | | | lb/day | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 1.2556 | 12.9191 | 14.6532 | 0.0228 | | 0.6777 | 0.6777 | | 0.6235 | 0.6235 | | 2,207.2109 | 2,207.2109 | 0.7139 | | 2,225.0573 |
| Paving | 1.6316 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **2.8871** | **12.9191** | **14.6532** | **0.0228** | | **0.6777** | **0.6777** | | **0.6235** | **0.6235** | | **2,207.2109** | **2,207.2109** | **0.7139** | | **2,225.0573** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0504 | 0.0291 | 0.3853 | 1.2100e-003 | 0.1232 | 7.7000e-004 | 0.1240 | 0.0327 | 7.1000e-004 | 0.0334 | | 120.9656 | 120.9656 | 2.7400e-003 | | 121.0342 |
| **Total** | **0.0504** | **0.0291** | **0.3853** | **1.2100e-003** | **0.1232** | **7.7000e-004** | **0.1240** | **0.0327** | **7.1000e-004** | **0.0334** | | **120.9656** | **120.9656** | **2.7400e-003** | | **121.0342** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.2805 | 1.2154 | 17.2957 | 0.0228 | | 0.0374 | 0.0374 | | 0.0374 | 0.0374 | 0.0000 | 2,207.2109 | 2,207.2109 | 0.7139 | | 2,225.0573 |
| Paving | 1.6316 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.9120** | **1.2154** | **17.2957** | **0.0228** | | **0.0374** | **0.0374** | | **0.0374** | **0.0374** | **0.0000** | **2,207.2109** | **2,207.2109** | **0.7139** | | **2,225.0573** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0504 | 0.0291 | 0.3853 | 1.2100e-003 | 0.1168 | 7.7000e-004 | 0.1176 | 0.0311 | 7.1000e-004 | 0.0318 | | 120.9656 | 120.9656 | 2.7400e-003 | | 121.0342 |
| **Total** | **0.0504** | **0.0291** | **0.3853** | **1.2100e-003** | **0.1168** | **7.7000e-004** | **0.1176** | **0.0311** | **7.1000e-004** | **0.0318** | | **120.9656** | **120.9656** | **2.7400e-003** | | **121.0342** |

## 3.7 Building Construction - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.9009 | 17.4321 | 16.5752 | 0.0269 | | 0.9586 | 0.9586 | | 0.9013 | 0.9013 | | 2,553.3639 | 2,553.3639 | 0.6160 | | 2,568.7643 |
| **Total** | **1.9009** | **17.4321** | **16.5752** | **0.0269** | | **0.9586** | **0.9586** | | **0.9013** | **0.9013** | | **2,553.3639** | **2,553.3639** | **0.6160** | | **2,568.7643** |

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| Category | lb/day | | | | | | | | | | | lb/day | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 1.1649 | 37.2332 | 8.9157 | 0.0994 | 2.4637 | 0.0832 | 2.5469 | 0.7092 | 0.0796 | 0.7887 | | 10,485.0791 | 10,485.0791 | 0.4628 | | 10,496.6479 |
| Worker | 5.7557 | 3.3221 | 44.0305 | 0.1387 | 14.0801 | 0.0883 | 14.1684 | 3.7347 | 0.0814 | 3.8161 | | 13,822.3300 | 13,822.3300 | 0.3136 | | 13,830.1691 |
| **Total** | **6.9206** | **40.5554** | **52.9462** | **0.2381** | **16.5438** | **0.1715** | **16.7154** | **4.4439** | **0.1609** | **4.6048** | | **24,307.4091** | **24,307.4091** | **0.7763** | | **24,326.8170** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.5867 | 2.7396 | 17.6822 | 0.0269 | | 0.1120 | 0.1120 | | 0.1120 | 0.1120 | 0.0000 | 2,553.3639 | 2,553.3639 | 0.6160 | | 2,568.7643 |
| **Total** | **0.5867** | **2.7396** | **17.6822** | **0.0269** | | **0.1120** | **0.1120** | | **0.1120** | **0.1120** | **0.0000** | **2,553.3639** | **2,553.3639** | **0.6160** | | **2,568.7643** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 1.1649 | 37.2332 | 8.9157 | 0.0994 | 2.3583 | 0.0832 | 2.4415 | 0.6833 | 0.0796 | 0.7629 | | 10,485.0791 | 10,485.0791 | 0.4628 | | 10,496.6479 |
| Worker | 5.7557 | 3.3221 | 44.0305 | 0.1387 | 13.3459 | 0.0883 | 13.4342 | 3.5545 | 0.0814 | 3.6358 | | 13,822.3300 | 13,822.3300 | 0.3136 | | 13,830.1691 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | **6.9206** | **40.5554** | **52.9462** | **0.2381** | **15.7042** | **0.1715** | **15.8757** | **4.2378** | **0.1609** | **4.3987** | | **24,307.4091** | **24,307.4091** | **0.7763** | | **24,326.8170** |

## 3.7 Building Construction - 2022

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.7062 | 15.6156 | 16.3634 | 0.0269 | | 0.8090 | 0.8090 | | 0.7612 | 0.7612 | | 2,554.3336 | 2,554.3336 | 0.6120 | | 2,569.6322 |
| **Total** | **1.7062** | **15.6156** | **16.3634** | **0.0269** | | **0.8090** | **0.8090** | | **0.7612** | **0.7612** | | **2,554.3336** | **2,554.3336** | **0.6120** | | **2,569.6322** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 1.0864 | 35.1946 | 8.3602 | 0.0984 | 2.4638 | 0.0721 | 2.5360 | 0.7092 | 0.0690 | 0.7782 | | 10,386.4056 | 10,386.4056 | 0.4389 | | 10,397.3773 |
| Worker | 5.3445 | 2.9784 | 40.5568 | 0.1335 | 14.0801 | 0.0863 | 14.1664 | 3.7347 | 0.0795 | 3.8142 | | 13,308.6345 | 13,308.6345 | 0.2815 | | 13,315.6717 |
| **Total** | **6.4309** | **38.1731** | **48.9170** | **0.2319** | **16.5439** | **0.1584** | **16.7023** | **4.4439** | **0.1484** | **4.5924** | | **23,695.0401** | **23,695.0401** | **0.7204** | | **23,713.0490** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.5608 | 2.6936 | 17.6592 | 0.0269 | | 0.1018 | 0.1018 | | 0.1018 | 0.1018 | 0.0000 | 2,554.3336 | 2,554.3336 | 0.6120 | | 2,569.6322 |
| **Total** | **0.5608** | **2.6936** | **17.6592** | **0.0269** | | **0.1018** | **0.1018** | | **0.1018** | **0.1018** | **0.0000** | **2,554.3336** | **2,554.3336** | **0.6120** | | **2,569.6322** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 1.0864 | 35.1946 | 8.3602 | 0.0984 | 2.3584 | 0.0721 | 2.4306 | 0.6834 | 0.0690 | 0.7523 | | 10,386.4056 | 10,386.4056 | 0.4389 | | 10,397.3773 |
| Worker | 5.3445 | 2.9784 | 40.5568 | 0.1335 | 13.3459 | 0.0863 | 13.4322 | 3.5545 | 0.0795 | 3.6339 | | 13,308.6345 | 13,308.6345 | 0.2815 | | 13,315.6717 |
| **Total** | **6.4309** | **38.1731** | **48.9170** | **0.2319** | **15.7043** | **0.1584** | **15.8627** | **4.2378** | **0.1484** | **4.3863** | | **23,695.0401** | **23,695.0401** | **0.7204** | | **23,713.0490** |

## 3.7 Building Construction - 2023

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.5728 | 14.3849 | 16.2440 | 0.0269 | | 0.6997 | 0.6997 | | 0.6584 | 0.6584 | | 2,555.2099 | 2,555.2099 | 0.6079 | | 2,570.4061 |
| **Total** | **1.5728** | **14.3849** | **16.2440** | **0.0269** | | **0.6997** | **0.6997** | | **0.6584** | **0.6584** | | **2,555.2099** | **2,555.2099** | **0.6079** | | **2,570.4061** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.8193 | 26.8484 | 7.4914 | 0.0956 | 2.4639 | 0.0317 | 2.4956 | 0.7093 | 0.0303 | 0.7396 | | 10,096.1994 | 10,096.1994 | 0.3620 | | 10,105.2505 |
| Worker | 4.9743 | 2.6765 | 37.3977 | 0.1283 | 14.0801 | 0.0845 | 14.1646 | 3.7347 | 0.0778 | 3.8125 | | 12,791.1231 | 12,791.1231 | 0.2526 | | 12,797.4376 |
| **Total** | **5.7936** | **29.5249** | **44.8891** | **0.2239** | **16.5440** | **0.1162** | **16.6602** | **4.4440** | **0.1081** | **4.5521** | | **22,887.3225** | **22,887.3225** | **0.6146** | | **22,902.6881** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.5385 | 2.6513 | 17.6413 | 0.0269 | | 0.0930 | 0.0930 | | 0.0930 | 0.0930 | 0.0000 | 2,555.2099 | 2,555.2099 | 0.6079 | | 2,570.4061 |
| **Total** | **0.5385** | **2.6513** | **17.6413** | **0.0269** | | **0.0930** | **0.0930** | | **0.0930** | **0.0930** | **0.0000** | **2,555.2099** | **2,555.2099** | **0.6079** | | **2,570.4061** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.8193 | 26.8484 | 7.4914 | 0.0956 | 2.3585 | 0.0317 | 2.3903 | 0.6834 | 0.0303 | 0.7137 | | 10,096.1994 | 10,096.1994 | 0.3620 | | 10,105.2505 |
| Worker | 4.9743 | 2.6765 | 37.3977 | 0.1283 | 13.3459 | 0.0845 | 13.4304 | 3.5545 | 0.0778 | 3.6323 | | 12,791.1231 | 12,791.1231 | 0.2526 | | 12,797.4376 |
| **Total** | **5.7936** | **29.5249** | **44.8891** | **0.2239** | **15.7044** | **0.1162** | **15.8206** | **4.2379** | **0.1081** | **4.3460** | | **22,887.3225** | **22,887.3225** | **0.6146** | | **22,902.6881** |

## 3.8 Architectural Coating - 2022

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 17.4919 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.6136 | 4.2254 | 5.4408 | 8.9100e-003 | | 0.2452 | 0.2452 | | 0.2452 | 0.2452 | | 844.3442 | 844.3442 | 0.0550 | | 845.7185 |
| **Total** | **18.1055** | **4.2254** | **5.4408** | **8.9100e-003** | | **0.2452** | **0.2452** | | **0.2452** | **0.2452** | | **844.3442** | **844.3442** | **0.0550** | | **845.7185** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Worker | 1.0695 | 0.5960 | 8.1161 | 0.0267 | 2.8177 | 0.0173 | 2.8349 | 0.7474 | 0.0159 | 0.7633 | | 2,663.2798 | 2,663.2798 | 0.0563 | | 2,664.6881 |
| **Total** | **1.0695** | **0.5960** | **8.1161** | **0.0267** | **2.8177** | **0.0173** | **2.8349** | **0.7474** | **0.0159** | **0.7633** | | **2,663.2798** | **2,663.2798** | **0.0563** | | **2,664.6881** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 17.4919 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.0891 | 0.3863 | 5.4972 | 8.9100e-003 | | 0.0119 | 0.0119 | | 0.0119 | 0.0119 | 0.0000 | 844.3441 | 844.3441 | 0.0550 | | 845.7185 |
| **Total** | **17.5810** | **0.3863** | **5.4972** | **8.9100e-003** | | **0.0119** | **0.0119** | | **0.0119** | **0.0119** | **0.0000** | **844.3441** | **844.3441** | **0.0550** | | **845.7185** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 1.0695 | 0.5960 | 8.1161 | 0.0267 | 2.6707 | 0.0173 | 2.6880 | 0.7113 | 0.0159 | 0.7272 | | 2,663.2798 | 2,663.2798 | 0.0563 | | 2,664.6881 |
| **Total** | **1.0695** | **0.5960** | **8.1161** | **0.0267** | **2.6707** | **0.0173** | **2.6880** | **0.7113** | **0.0159** | **0.7272** | | **2,663.2798** | **2,663.2798** | **0.0563** | | **2,664.6881** |

## 3.8 Architectural Coating - 2023

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 17.4919 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.5750 | 3.9090 | 5.4334 | 8.9100e-003 | | 0.2125 | 0.2125 | | 0.2125 | 0.2125 | | 844.3442 | 844.3442 | 0.0505 | | 845.6070 |
| **Total** | **18.0669** | **3.9090** | **5.4334** | **8.9100e-003** | | **0.2125** | **0.2125** | | **0.2125** | **0.2125** | | **844.3442** | **844.3442** | **0.0505** | | **845.6070** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.9954 | 0.5356 | 7.4839 | 0.0257 | 2.8177 | 0.0169 | 2.8346 | 0.7474 | 0.0156 | 0.7629 | | 2,559.7172 | 2,559.7172 | 0.0506 | | 2,560.9808 |
| **Total** | **0.9954** | **0.5356** | **7.4839** | **0.0257** | **2.8177** | **0.0169** | **2.8346** | **0.7474** | **0.0156** | **0.7629** | | **2,559.7172** | **2,559.7172** | **0.0506** | | **2,560.9808** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 17.4919 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 0.0891 | 0.3863 | 5.4972 | 8.9100e-003 | | 0.0119 | 0.0119 | | 0.0119 | 0.0119 | 0.0000 | 844.3441 | 844.3441 | 0.0505 | | 845.6070 |
| **Total** | **17.5810** | **0.3863** | **5.4972** | **8.9100e-003** | | **0.0119** | **0.0119** | | **0.0119** | **0.0119** | **0.0000** | **844.3441** | **844.3441** | **0.0505** | | **845.6070** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.9954 | 0.5356 | 7.4839 | 0.0257 | 2.6707 | 0.0169 | 2.6876 | 0.7113 | 0.0156 | 0.7269 | | 2,559.7172 | 2,559.7172 | 0.0506 | | 2,560.9808 |
| **Total** | **0.9954** | **0.5356** | **7.4839** | **0.0257** | **2.6707** | **0.0169** | **2.6876** | **0.7113** | **0.0156** | **0.7269** | | **2,559.7172** | **2,559.7172** | **0.0506** | | **2,560.9808** |

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

Increase Diversity

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

Implement NEV Network

Expand Transit Network

Implement Trip Reduction Program

Transit Subsidy

Employee Vanpool/Shuttle

Provide Riade Sharing Program

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 4.3550 | 14.6034 | 44.7528 | 0.1648 | 14.6173 | 0.1194 | 14.7367 | 3.9105 | 0.1113 | 4.0217 | | 16,639.9117 | 16,639.9117 | 0.5269 | | 16,653.0852 |
| Unmitigated | 5.0063 | 18.1773 | 63.0639 | 0.2425 | 22.0172 | 0.1719 | 22.1891 | 5.8901 | 0.1602 | 6.0503 | | 24,467.4224 | 24,467.4224 | 0.7233 | | 24,485.5040 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| City Park | 0.00 | 0.00 | 0.00 | | |
| Condo/Townhouse High Rise | 600.00 | 538.75 | 428.75 | 2,040,171 | 1,354,477 |
| Other Asphalt Surfaces | 0.00 | 0.00 | 0.00 | | |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Recreational Swimming Pool | 0.00 | 0.00 | 0.00 | | |
| Retirement Community | 2,280.00 | 964.25 | 926.25 | 6,834,252 | 4,537,284 |
| Total | 2,880.00 | 1,503.00 | 1,355.00 | 8,874,423 | 5,891,761 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C- | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| City Park | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 66 | 28 | 6 |
| Condo/Townhouse High Rise | 16.80 | 7.50 | 8.90 | 31.00 | 15.00 | 54.00 | 86 | 11 | 3 |
| Other Asphalt Surfaces | 9.50 | 7.30 | 7.30 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Parking Lot | 9.50 | 7.30 | 7.30 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Recreational Swimming Pool | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 52 | 39 | 9 |
| Retirement Community | 16.80 | 7.50 | 8.90 | 31.00 | 15.00 | 54.00 | 86 | 11 | 3 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| City Park | 0.590657 | 0.037535 | 0.185105 | 0.118290 | 0.015611 | 0.005013 | 0.010768 | 0.024764 | 0.001635 | 0.001742 | 0.005351 | 0.002726 | 0.000802 |
| Condo/Townhouse High Rise | 0.590657 | 0.037535 | 0.185105 | 0.118290 | 0.015611 | 0.005013 | 0.010768 | 0.024764 | 0.001635 | 0.001742 | 0.005351 | 0.002726 | 0.000802 |
| Other Asphalt Surfaces | 0.590657 | 0.037535 | 0.185105 | 0.118290 | 0.015611 | 0.005013 | 0.010768 | 0.024764 | 0.001635 | 0.001742 | 0.005351 | 0.002726 | 0.000802 |
| Parking Lot | 0.590657 | 0.037535 | 0.185105 | 0.118290 | 0.015611 | 0.005013 | 0.010768 | 0.024764 | 0.001635 | 0.001742 | 0.005351 | 0.002726 | 0.000802 |
| Recreational Swimming Pool | 0.590657 | 0.037535 | 0.185105 | 0.118290 | 0.015611 | 0.005013 | 0.010768 | 0.024764 | 0.001635 | 0.001742 | 0.005351 | 0.002726 | 0.000802 |
| Retirement Community | 0.590657 | 0.037535 | 0.185105 | 0.118290 | 0.015611 | 0.005013 | 0.010768 | 0.024764 | 0.001635 | 0.001742 | 0.005351 | 0.002726 | 0.000802 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Percent of Electricity Use Generated with Renewable Energy

Install Energy Efficient Appliances

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.1119 | 0.9564 | 0.4070 | 6.1000e-003 | | 0.0773 | 0.0773 | | 0.0773 | 0.0773 | | 1,220.8706 | 1,220.8706 | 0.0234 | 0.0224 | 1,228.1256 |
| NaturalGas Unmitigated | 0.1750 | 1.4958 | 0.6365 | 9.5500e-003 | | 0.1209 | 0.1209 | | 0.1209 | 0.1209 | | 1,909.5520 | 1,909.5520 | 0.0366 | 0.0350 | 1,920.8995 |

### 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Condo/Townhouse High Rise | 2958.72 | 0.0319 | 0.2727 | 0.1160 | 1.7400e-003 | | 0.0221 | 0.0221 | | 0.0221 | 0.0221 | | 348.0842 | 348.0842 | 6.6700e-003 | 6.3800e-003 | 350.1527 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Retirement Community | 13272.5 | 0.1431 | 1.2232 | 0.5205 | 7.8100e-003 | | 0.0989 | 0.0989 | | 0.0989 | 0.0989 | | 1,561.4678 | 1,561.4678 | 0.0299 | 0.0286 | 1,570.7468 |
| **Total** | | **0.1750** | **1.4958** | **0.6365** | **9.5500e-003** | | **0.1209** | **0.1209** | | **0.1209** | **0.1209** | | **1,909.5520** | **1,909.5520** | **0.0366** | **0.0350** | **1,920.8995** |

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Condo/Townhouse High Rise | 1.96325 | 0.0212 | 0.1809 | 0.0770 | 1.1500e-003 | | 0.0146 | 0.0146 | | 0.0146 | 0.0146 | | 230.9707 | 230.9707 | 4.4300e-003 | 4.2300e-003 | 232.3432 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Retirement Community | 8.41415 | 0.0907 | 0.7754 | 0.3300 | 4.9500e-003 | | 0.0627 | 0.0627 | | 0.0627 | 0.0627 | | 989.8999 | 989.8999 | 0.0190 | 0.0182 | 995.7824 |
| **Total** | | **0.1119** | **0.9564** | **0.4070** | **6.1000e-003** | | **0.0773** | **0.0773** | | **0.0773** | **0.0773** | | **1,220.8706** | **1,220.8706** | **0.0234** | **0.0224** | **1,228.1256** |

## 6.0 Area Detail

## 6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

Use Low VOC Cleaning Supplies

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 13.2831 | 0.4525 | 37.6769 | 1.7000e-003 | | 0.2043 | 0.2043 | | 0.2043 | 0.2043 | 0.0000 | 62.4659 | 62.4659 | 0.0451 | 0.0000 | 63.5921 |
| Unmitigated | 17.5681 | 4.2873 | 51.1760 | 0.0263 | | 0.5748 | 0.5748 | | 0.5748 | 0.5748 | 0.0000 | 4,832.8388 | 4,832.8388 | 0.1771 | 0.0870 | 4,863.1816 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 2.3914 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Consumer Products | 13.2426 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.4348 | 3.7158 | 1.5812 | 0.0237 | | 0.3004 | 0.3004 | | 0.3004 | 0.3004 | 0.0000 | 4,743.5294 | 4,743.5294 | 0.0909 | 0.0870 | 4,771.7178 |
| Landscaping | 1.4993 | 0.5715 | 49.5948 | 2.6200e-003 | | 0.2743 | 0.2743 | | 0.2743 | 0.2743 | | 89.3094 | 89.3094 | 0.0862 | | 91.4638 |
| **Total** | **17.5681** | **4.2873** | **51.1760** | **0.0263** | | **0.5748** | **0.5748** | | **0.5748** | **0.5748** | **0.0000** | **4,832.8388** | **4,832.8388** | **0.1771** | **0.0870** | **4,863.1816** |

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.2110 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 12.2778 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 0.7943 | 0.4525 | 37.6769 | 1.7000e-003 | | 0.2043 | 0.2043 | | 0.2043 | 0.2043 | | 62.4659 | 62.4659 | 0.0451 | | 63.5921 |
| **Total** | **13.2831** | **0.4525** | **37.6769** | **1.7000e-003** | | **0.2043** | **0.2043** | | **0.2043** | **0.2043** | **0.0000** | **62.4659** | **62.4659** | **0.0451** | **0.0000** | **63.5921** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

Use Reclaimed Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Turf Reduction

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

## 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

**Boilers**

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

**User Defined Equipment**

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

Vineyards at Deer Creek - Phase 1 - Contra Costa County, Winter

# Vineyards at Deer Creek - Phase 1

**Contra Costa County, Winter**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Other Asphalt Surfaces | 495.00 | 1000sqft | 11.36 | 495,000.00 | 0 |
| Parking Lot | 260.00 | Space | 2.34 | 104,000.00 | 0 |
| City Park | 56.25 | Acre | 56.25 | 2,450,250.00 | 0 |
| Recreational Swimming Pool | 2.00 | 1000sqft | 0.05 | 2,000.00 | 0 |
| Condo/Townhouse High Rise | 125.00 | Dwelling Unit | 1.95 | 125,000.00 | 358 |
| Retirement Community | 475.00 | Dwelling Unit | 95.00 | 475,000.00 | 1359 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 58 |
| **Climate Zone** | 4 | | | **Operational Year** | 2023 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 146 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - Per PG&E CRSR

Land Use - Phase 1
Parking: assumed 2 spaces for 125 DUs, plus 10 extra spaces for recreation uses
Other asphalt surfaces is American Ave extension
City Park is open space/ agricultural uses

Construction Phase - Anticipated schedule

Off-road Equipment - Estimated equipment use

Off-road Equipment -

Off-road Equipment - No demolition

Off-road Equipment - Estimated equipment use

Off-road Equipment -

Off-road Equipment - anticipated equipment

Off-road Equipment -

Off-road Equipment -

Trips and VMT - vendor trips would be lower since city park was used to model the proposed natural open space, informal parkland, low impact trails,

Demolition - No demolition

Grading - Balanced between all phases

Vehicle Trips - Per Fehr and Peers TIA 2019, blended rate used

Woodstoves - Per BAAQMD Regulation 6, Rule 3

Energy Use -

Land Use Change -

Construction Off-road Equipment Mitigation - Per BAAQMD basic and advanced control measures

Mobile Land Use Mitigation - Green building design elements include narrower roadways

Mobile Commute Mitigation -

Area Mitigation - No hearth, low VOC cleaning supplies, low VOC paint, and electric landscape equipment

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblAreaMitigation | UseLowVOCPaintNonresidentialExteriorValue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintNonresidentialInteriorValue | 100 | 10 |
| tblAreaMitigation | UseLowVOCPaintParkingCheck | False | True |
| tblAreaMitigation | UseLowVOCPaintParkingValue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintResidentialExteriorValue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintResidentialInteriorValue | 100 | 10 |
| tblConstDustMitigation | CleanPavedRoadPercentReduction | 0 | 6 |
| tblConstDustMitigation | WaterUnpavedRoadMoistureContent | 0 | 12 |

| | | | |
|---|---|---|---|
| tblConstDustMitigation | WaterUnpavedRoadVehicleSpeed | 0 | 15 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 8.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 6.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 4.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 12.00 |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstructionPhase | NumDays | 220.00 | 499.00 |
| tblConstructionPhase | NumDays | 3,100.00 | 573.00 |
| tblConstructionPhase | NumDays | 200.00 | 0.00 |
| tblConstructionPhase | NumDays | 310.00 | 110.00 |

| | | | |
|---|---|---|---|
| tblConstructionPhase | NumDays | 220.00 | 22.00 |
| tblConstructionPhase | NumDays | 120.00 | 10.00 |
| tblFireplaces | NumberGas | 18.75 | 40.00 |
| tblFireplaces | NumberGas | 71.25 | 152.00 |
| tblFireplaces | NumberWood | 21.25 | 0.00 |
| tblFireplaces | NumberWood | 80.75 | 0.00 |
| tblOffRoadEquipment | HorsePower | 203.00 | 80.00 |
| tblOffRoadEquipment | LoadFactor | 0.36 | 0.38 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 4.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 3.00 |
| tblProjectCharacteristics | CO2IntensityFactor | 641.35 | 146 |
| tblTripsAndVMT | VendorTripNumber | 564.00 | 364.00 |
| tblVehicleTrips | HO_TL | 5.70 | 8.90 |
| tblVehicleTrips | HO_TL | 5.70 | 8.90 |
| tblVehicleTrips | HS_TL | 4.80 | 7.50 |
| tblVehicleTrips | HS_TL | 4.80 | 7.50 |
| tblVehicleTrips | HW_TL | 10.80 | 16.80 |
| tblVehicleTrips | HW_TL | 10.80 | 16.80 |
| tblVehicleTrips | ST_TR | 22.75 | 0.00 |
| tblVehicleTrips | ST_TR | 9.10 | 0.00 |
| tblVehicleTrips | SU_TR | 16.74 | 0.00 |
| tblVehicleTrips | SU_TR | 13.60 | 0.00 |
| tblVehicleTrips | WD_TR | 1.89 | 0.00 |
| tblVehicleTrips | WD_TR | 4.18 | 4.80 |
| tblVehicleTrips | WD_TR | 33.82 | 0.00 |
| tblVehicleTrips | WD_TR | 2.40 | 4.80 |
| tblWoodstoves | NumberCatalytic | 2.50 | 0.00 |
| tblWoodstoves | NumberCatalytic | 9.50 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 2.50 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 9.50 | 0.00 |

## 2.0 Emissions Summary

### 2.1 Overall Construction (Maximum Daily Emission)

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2021 | 8.9722 | 67.8651 | 67.0743 | 0.2495 | 18.2141 | 2.8194 | 20.2595 | 9.9699 | 2.5938 | 11.8517 | 0.0000 | 25,293.4380 | 25,293.4380 | 2.8965 | 0.0000 | 25,328.6599 |
| 2022 | 27.4788 | 59.7009 | 75.7145 | 0.2769 | 19.3616 | 1.2324 | 20.5940 | 5.1913 | 1.1731 | 6.3644 | 0.0000 | 27,989.2110 | 27,989.2110 | 1.4549 | 0.0000 | 28,025.5822 |
| 2023 | 26.5895 | 49.2272 | 70.8517 | 0.2686 | 19.3617 | 1.0466 | 20.4083 | 5.1913 | 0.9958 | 6.1872 | 0.0000 | 27,147.8148 | 27,147.8148 | 1.3274 | 0.0000 | 27,180.9984 |
| **Maximum** | **27.4788** | **67.8651** | **75.7145** | **0.2769** | **19.3617** | **2.8194** | **20.5940** | **9.9699** | **2.5938** | **11.8517** | **0.0000** | **27,989.2110** | **27,989.2110** | **2.8965** | **0.0000** | **28,025.5822** |

**Mitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2021 | 7.6580 | 44.3847 | 68.1813 | 0.2495 | 15.7042 | 0.2863 | 15.9905 | 4.2827 | 0.2756 | 4.5134 | 0.0000 | 25,293.4380 | 25,293.4380 | 2.8965 | 0.0000 | 25,328.6599 |
| 2022 | 25.8089 | 42.9398 | 77.0667 | 0.2769 | 18.3751 | 0.2919 | 18.6669 | 4.9492 | 0.2804 | 5.2296 | 0.0000 | 27,989.2110 | 27,989.2110 | 1.4549 | 0.0000 | 28,025.5822 |
| 2023 | 25.0694 | 33.9709 | 72.3130 | 0.2686 | 18.3752 | 0.2393 | 18.6145 | 4.9492 | 0.2298 | 5.1790 | 0.0000 | 27,147.8148 | 27,147.8148 | 1.3274 | 0.0000 | 27,180.9983 |
| **Maximum** | **25.8089** | **44.3847** | **77.0667** | **0.2769** | **18.3752** | **0.2919** | **18.6669** | **4.9492** | **0.2804** | **5.2296** | **0.0000** | **27,989.2110** | **27,989.2110** | **2.8965** | **0.0000** | **28,025.5822** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **7.15** | **31.39** | **-1.84** | **0.00** | **7.87** | **83.97** | **13.04** | **30.32** | **83.50** | **38.85** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 17.5681 | 4.2873 | 51.1760 | 0.0263 | | 0.5748 | 0.5748 | | 0.5748 | 0.5748 | 0.0000 | 4,832.8388 | 4,832.8388 | 0.1771 | 0.0870 | 4,863.1816 |
| Energy | 0.1750 | 1.4958 | 0.6365 | 9.5500e-003 | | 0.1209 | 0.1209 | | 0.1209 | 0.1209 | | 1,909.5520 | 1,909.5520 | 0.0366 | 0.0350 | 1,920.8995 |
| Mobile | 4.1814 | 19.4058 | 59.6954 | 0.2238 | 22.0172 | 0.1725 | 22.1897 | 5.8901 | 0.1608 | 6.0509 | | 22,594.7341 | 22,594.7341 | 0.7165 | | 22,612.6456 |
| **Total** | **21.9246** | **25.1889** | **111.5079** | **0.2597** | **22.0172** | **0.8682** | **22.8854** | **5.8901** | **0.8565** | **6.7466** | **0.0000** | **29,337.1248** | **29,337.1248** | **0.9302** | **0.1220** | **29,396.7267** |

### Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 13.2831 | 0.4525 | 37.6769 | 1.7000e-003 | | 0.2043 | 0.2043 | | 0.2043 | 0.2043 | 0.0000 | 62.4659 | 62.4659 | 0.0451 | 0.0000 | 63.5921 |
| Energy | 0.1119 | 0.9564 | 0.4070 | 6.1000e-003 | | 0.0773 | 0.0773 | | 0.0773 | 0.0773 | | 1,220.8706 | 1,220.8706 | 0.0234 | 0.0224 | 1,228.1256 |
| Mobile | 3.5466 | 15.4121 | 43.9647 | 0.1521 | 14.6173 | 0.1200 | 14.7373 | 3.9105 | 0.1118 | 4.0223 | | 15,362.1001 | 15,362.1001 | 0.5322 | | 15,375.4046 |
| **Total** | **16.9417** | **16.8209** | **82.0485** | **0.1599** | **14.6173** | **0.4016** | **15.0189** | **3.9105** | **0.3935** | **4.3039** | **0.0000** | **16,645.4365** | **16,645.4365** | **0.6006** | **0.0224** | **16,667.1222** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **22.73** | **33.22** | **26.42** | **38.41** | **33.61** | **53.74** | **34.37** | **33.61** | **54.06** | **36.21** | **0.00** | **43.26** | **43.26** | **35.43** | **81.65** | **43.30** |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Demolition | Demolition | 1/1/2021 | 12/31/2020 | 5 | 0 | |
| 2 | Site Preparation | Site Preparation | 1/1/2021 | 1/14/2021 | 5 | 10 | |
| 3 | Grading | Grading | 1/15/2021 | 6/17/2021 | 5 | 110 | |
| 4 | Intrastructure Improvements | Trenching | 6/18/2021 | 9/17/2021 | 5 | 66 | |
| 5 | Paving | Paving | 9/18/2021 | 10/19/2021 | 5 | 22 | |
| 6 | Building Construction | Building Construction | 10/20/2021 | 12/31/2023 | 5 | 573 | |
| 7 | Architectural Coating | Architectural Coating | 2/1/2022 | 12/29/2023 | 5 | 499 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 495**

**Acres of Paving: 13.7**

**Residential Indoor: 1,215,000; Residential Outdoor: 405,000; Non-Residential Indoor: 4,500; Non-Residential Outdoor: 1,500; Striped**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Demolition | Excavators | 3 | 8.00 | 158 | 0.38 |
| Demolition | Rubber Tired Dozers | 2 | 8.00 | 247 | 0.40 |
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 4 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |

| | | | | | |
|---|---|---|---|---|---|
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 3 | 6.00 | 78 | 0.48 |
| Intrastructure Improvements | Excavators | 3 | 8.00 | 158 | 0.38 |
| Intrastructure Improvements | Rubber Tired Loaders | 3 | 8.00 | 80 | 0.38 |
| Intrastructure Improvements | Tractors/Loaders/Backhoes | 3 | 8.00 | 97 | 0.37 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Demolition | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 10 | 25.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 1,714.00 | 364.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 3 | 343.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Intrastructure Improvements | 9 | 23.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

## 3.3 Site Preparation - 2021

## Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 18.0663 | 0.0000 | 18.0663 | 9.9307 | 0.0000 | 9.9307 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.8882 | 40.4971 | 21.1543 | 0.0380 | | 2.0445 | 2.0445 | | 1.8809 | 1.8809 | | 3,685.6569 | 3,685.6569 | 1.1920 | | 3,715.4573 |
| **Total** | **3.8882** | **40.4971** | **21.1543** | **0.0380** | **18.0663** | **2.0445** | **20.1107** | **9.9307** | **1.8809** | **11.8116** | | **3,685.6569** | **3,685.6569** | **1.1920** | | **3,715.4573** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0613 | 0.0430 | 0.4221 | 1.3200e-003 | 0.1479 | 9.3000e-004 | 0.1488 | 0.0392 | 8.5000e-004 | 0.0401 | | 131.5180 | 131.5180 | 3.0200e-003 | | 131.5935 |
| **Total** | **0.0613** | **0.0430** | **0.4221** | **1.3200e-003** | **0.1479** | **9.3000e-004** | **0.1488** | **0.0392** | **8.5000e-004** | **0.0401** | | **131.5180** | **131.5180** | **3.0200e-003** | | **131.5935** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fugitive Dust | | | | | 7.7233 | 0.0000 | 7.7233 | 4.2454 | 0.0000 | 4.2454 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.4656 | 2.0175 | 20.8690 | 0.0380 | | 0.0621 | 0.0621 | | 0.0621 | 0.0621 | 0.0000 | 3,685.6569 | 3,685.6569 | 1.1920 | | 3,715.4573 |
| **Total** | **0.4656** | **2.0175** | **20.8690** | **0.0380** | **7.7233** | **0.0621** | **7.7854** | **4.2454** | **0.0621** | **4.3075** | **0.0000** | **3,685.6569** | **3,685.6569** | **1.1920** | | **3,715.4573** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0613 | 0.0430 | 0.4221 | 1.3200e-003 | 0.1402 | 9.3000e-004 | 0.1411 | 0.0373 | 8.5000e-004 | 0.0382 | | 131.5180 | 131.5180 | 3.0200e-003 | | 131.5935 |
| **Total** | **0.0613** | **0.0430** | **0.4221** | **1.3200e-003** | **0.1402** | **9.3000e-004** | **0.1411** | **0.0373** | **8.5000e-004** | **0.0382** | | **131.5180** | **131.5180** | **3.0200e-003** | | **131.5935** |

## 3.4 Grading - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 10.7943 | 0.0000 | 10.7943 | 3.8255 | 0.0000 | 3.8255 | | | 0.0000 | | | 0.0000 |
| Off-Road | 6.0501 | 67.8054 | 44.8878 | 0.0923 | | 2.8181 | 2.8181 | | 2.5927 | 2.5927 | | 8,942.8665 | 8,942.8665 | 2.8923 | | 9,015.1741 |
| **Total** | **6.0501** | **67.8054** | **44.8878** | **0.0923** | **10.7943** | **2.8181** | **13.6124** | **3.8255** | **2.5927** | **6.4182** | | **8,942.8665** | **8,942.8665** | **2.8923** | | **9,015.1741** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0851 | 0.0597 | 0.5862 | 1.8300e-003 | 0.2054 | 1.2900e-003 | 0.2067 | 0.0545 | 1.1900e-003 | 0.0557 | | 182.6639 | 182.6639 | 4.1900e-003 | | 182.7687 |
| **Total** | **0.0851** | **0.0597** | **0.5862** | **1.8300e-003** | **0.2054** | **1.2900e-003** | **0.2067** | **0.0545** | **1.1900e-003** | **0.0557** | | **182.6639** | **182.6639** | **4.1900e-003** | | **182.7687** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 4.6146 | 0.0000 | 4.6146 | 1.6354 | 0.0000 | 1.6354 | | | 0.0000 | | | 0.0000 |
| Off-Road | 1.1344 | 4.9156 | 46.6696 | 0.0923 | | 0.1513 | 0.1513 | | 0.1513 | 0.1513 | 0.0000 | 8,942.8665 | 8,942.8665 | 2.8923 | | 9,015.1741 |
| **Total** | **1.1344** | **4.9156** | **46.6696** | **0.0923** | **4.6146** | **0.1513** | **4.7658** | **1.6354** | **0.1513** | **1.7867** | **0.0000** | **8,942.8665** | **8,942.8665** | **2.8923** | | **9,015.1741** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0851 | 0.0597 | 0.5862 | 1.8300e-003 | 0.1947 | 1.2900e-003 | 0.1960 | 0.0518 | 1.1900e-003 | 0.0530 | | 182.6639 | 182.6639 | 4.1900e-003 | | 182.7687 |
| **Total** | **0.0851** | **0.0597** | **0.5862** | **1.8300e-003** | **0.1947** | **1.2900e-003** | **0.1960** | **0.0518** | **1.1900e-003** | **0.0530** | | **182.6639** | **182.6639** | **4.1900e-003** | | **182.7687** |

## 3.5 Intrastructure Improvements - 2021

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 2.0503 | 18.9273 | 22.8559 | 0.0326 | | 1.1574 | 1.1574 | | 1.0648 | 1.0648 | | 3,153.5114 | 3,153.5114 | 1.0199 | | 3,179.0091 |
| **Total** | **2.0503** | **18.9273** | **22.8559** | **0.0326** | | **1.1574** | **1.1574** | | **1.0648** | **1.0648** | | **3,153.5114** | **3,153.5114** | **1.0199** | | **3,179.0091** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0783 | 0.0550 | 0.5393 | 1.6900e-003 | 0.1889 | 1.1900e-003 | 0.1901 | 0.0501 | 1.0900e-003 | 0.0512 | | 168.0508 | 168.0508 | 3.8600e-003 | | 168.1472 |
| **Total** | **0.0783** | **0.0550** | **0.5393** | **1.6900e-003** | **0.1889** | **1.1900e-003** | **0.1901** | **0.0501** | **1.0900e-003** | **0.0512** | | **168.0508** | **168.0508** | **3.8600e-003** | | **168.1472** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.4011 | 1.7379 | 24.7317 | 0.0326 | | 0.0535 | 0.0535 | | 0.0535 | 0.0535 | 0.0000 | 3,153.5114 | 3,153.5114 | 1.0199 | | 3,179.0091 |
| **Total** | **0.4011** | **1.7379** | **24.7317** | **0.0326** | | **0.0535** | **0.0535** | | **0.0535** | **0.0535** | **0.0000** | **3,153.5114** | **3,153.5114** | **1.0199** | | **3,179.0091** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0783 | 0.0550 | 0.5393 | 1.6900e-003 | 0.1791 | 1.1900e-003 | 0.1803 | 0.0477 | 1.0900e-003 | 0.0488 | | 168.0508 | 168.0508 | 3.8600e-003 | | 168.1472 |
| **Total** | **0.0783** | **0.0550** | **0.5393** | **1.6900e-003** | **0.1791** | **1.1900e-003** | **0.1803** | **0.0477** | **1.0900e-003** | **0.0488** | | **168.0508** | **168.0508** | **3.8600e-003** | | **168.1472** |

## 3.6 Paving - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| Category | lb/day | | | | | | | | | | lb/day | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 1.2556 | 12.9191 | 14.6532 | 0.0228 | | 0.6777 | 0.6777 | | 0.6235 | 0.6235 | | 2,207.2109 | 2,207.2109 | 0.7139 | | 2,225.0573 |
| Paving | 1.6316 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **2.8871** | **12.9191** | **14.6532** | **0.0228** | | **0.6777** | **0.6777** | | **0.6235** | **0.6235** | | **2,207.2109** | **2,207.2109** | **0.7139** | | **2,225.0573** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0511 | 0.0358 | 0.3517 | 1.1000e-003 | 0.1232 | 7.7000e-004 | 0.1240 | 0.0327 | 7.1000e-004 | 0.0334 | | 109.5983 | 109.5983 | 2.5200e-003 | | 109.6612 |
| **Total** | **0.0511** | **0.0358** | **0.3517** | **1.1000e-003** | **0.1232** | **7.7000e-004** | **0.1240** | **0.0327** | **7.1000e-004** | **0.0334** | | **109.5983** | **109.5983** | **2.5200e-003** | | **109.6612** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.2805 | 1.2154 | 17.2957 | 0.0228 | | 0.0374 | 0.0374 | | 0.0374 | 0.0374 | 0.0000 | 2,207.2109 | 2,207.2109 | 0.7139 | | 2,225.0573 |
| Paving | 1.6316 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.9120** | **1.2154** | **17.2957** | **0.0228** | | **0.0374** | **0.0374** | | **0.0374** | **0.0374** | **0.0000** | **2,207.2109** | **2,207.2109** | **0.7139** | | **2,225.0573** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0511 | 0.0358 | 0.3517 | 1.1000e-003 | 0.1168 | 7.7000e-004 | 0.1176 | 0.0311 | 7.1000e-004 | 0.0318 | | 109.5983 | 109.5983 | 2.5200e-003 | | 109.6612 |
| **Total** | **0.0511** | **0.0358** | **0.3517** | **1.1000e-003** | **0.1168** | **7.7000e-004** | **0.1176** | **0.0311** | **7.1000e-004** | **0.0318** | | **109.5983** | **109.5983** | **2.5200e-003** | | **109.6612** |

## 3.7 Building Construction - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.9009 | 17.4321 | 16.5752 | 0.0269 | | 0.9586 | 0.9586 | | 0.9013 | 0.9013 | | 2,553.3639 | 2,553.3639 | 0.6160 | | 2,568.7643 |
| **Total** | **1.9009** | **17.4321** | **16.5752** | **0.0269** | | **0.9586** | **0.9586** | | **0.9013** | **0.9013** | | **2,553.3639** | **2,553.3639** | **0.6160** | | **2,568.7643** |

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| Category | lb/day | | | | | | | | | | | lb/day | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 1.2352 | 37.5496 | 10.3087 | 0.0969 | 2.4637 | 0.0860 | 2.5497 | 0.7092 | 0.0822 | 0.7914 | | 10,216.6382 | 10,216.6382 | 0.5054 | | 10,229.2731 |
| Worker | 5.8361 | 4.0956 | 40.1903 | 0.1257 | 14.0801 | 0.0883 | 14.1684 | 3.7347 | 0.0814 | 3.8161 | | 12,523.4360 | 12,523.4360 | 0.2875 | | 12,530.6225 |
| **Total** | **7.0713** | **41.6451** | **50.4991** | **0.2226** | **16.5438** | **0.1743** | **16.7182** | **4.4439** | **0.1636** | **4.6075** | | **22,740.0741** | **22,740.0741** | **0.7929** | | **22,759.8956** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.5867 | 2.7396 | 17.6822 | 0.0269 | | 0.1120 | 0.1120 | | 0.1120 | 0.1120 | 0.0000 | 2,553.3639 | 2,553.3639 | 0.6160 | | 2,568.7643 |
| **Total** | **0.5867** | **2.7396** | **17.6822** | **0.0269** | | **0.1120** | **0.1120** | | **0.1120** | **0.1120** | **0.0000** | **2,553.3639** | **2,553.3639** | **0.6160** | | **2,568.7643** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 1.2352 | 37.5496 | 10.3087 | 0.0969 | 2.3583 | 0.0860 | 2.4443 | 0.6833 | 0.0822 | 0.7656 | | 10,216.6382 | 10,216.6382 | 0.5054 | | 10,229.2731 |
| Worker | 5.8361 | 4.0956 | 40.1903 | 0.1257 | 13.3459 | 0.0883 | 13.4342 | 3.5545 | 0.0814 | 3.6358 | | 12,523.4360 | 12,523.4360 | 0.2875 | | 12,530.6225 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | **7.0713** | **41.6451** | **50.4991** | **0.2226** | **15.7042** | **0.1743** | **15.8785** | **4.2378** | **0.1636** | **4.4014** | | **22,740.0741** | **22,740.0741** | **0.7929** | | **22,759.8956** |

## 3.7 Building Construction - 2022

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.7062 | 15.6156 | 16.3634 | 0.0269 | | 0.8090 | 0.8090 | | 0.7612 | 0.7612 | | 2,554.3336 | 2,554.3336 | 0.6120 | | 2,569.6322 |
| **Total** | **1.7062** | **15.6156** | **16.3634** | **0.0269** | | **0.8090** | **0.8090** | | **0.7612** | **0.7612** | | **2,554.3336** | **2,554.3336** | **0.6120** | | **2,569.6322** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 1.1521 | 35.4550 | 9.6690 | 0.0959 | 2.4638 | 0.0747 | 2.5385 | 0.7092 | 0.0714 | 0.7807 | | 10,118.9014 | 10,118.9014 | 0.4791 | | 10,130.8790 |
| Worker | 5.4287 | 3.6704 | 36.8642 | 0.1210 | 14.0801 | 0.0863 | 14.1664 | 3.7347 | 0.0795 | 3.8142 | | 12,058.5207 | 12,058.5207 | 0.2573 | | 12,064.9539 |
| **Total** | **6.5807** | **39.1253** | **46.5331** | **0.2169** | **16.5439** | **0.1610** | **16.7049** | **4.4439** | **0.1509** | **4.5948** | | **22,177.4220** | **22,177.4220** | **0.7364** | | **22,195.8329** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.5608 | 2.6936 | 17.6592 | 0.0269 | | 0.1018 | 0.1018 | | 0.1018 | 0.1018 | 0.0000 | 2,554.3336 | 2,554.3336 | 0.6120 | | 2,569.6322 |
| **Total** | **0.5608** | **2.6936** | **17.6592** | **0.0269** | | **0.1018** | **0.1018** | | **0.1018** | **0.1018** | **0.0000** | **2,554.3336** | **2,554.3336** | **0.6120** | | **2,569.6322** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 1.1521 | 35.4550 | 9.6690 | 0.0959 | 2.3584 | 0.0747 | 2.4331 | 0.6834 | 0.0714 | 0.7548 | | 10,118.9014 | 10,118.9014 | 0.4791 | | 10,130.8790 |
| Worker | 5.4287 | 3.6704 | 36.8642 | 0.1210 | 13.3459 | 0.0863 | 13.4322 | 3.5545 | 0.0795 | 3.6339 | | 12,058.5207 | 12,058.5207 | 0.2573 | | 12,064.9539 |
| **Total** | **6.5807** | **39.1253** | **46.5331** | **0.2169** | **15.7043** | **0.1610** | **15.8653** | **4.2378** | **0.1509** | **4.3887** | | **22,177.4220** | **22,177.4220** | **0.7364** | | **22,195.8329** |

## 3.7 Building Construction - 2023

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.5728 | 14.3849 | 16.2440 | 0.0269 | | 0.6997 | 0.6997 | | 0.6584 | 0.6584 | | 2,555.2099 | 2,555.2099 | 0.6079 | | 2,570.4061 |
| **Total** | **1.5728** | **14.3849** | **16.2440** | **0.0269** | | **0.6997** | **0.6997** | | **0.6584** | **0.6584** | | **2,555.2099** | **2,555.2099** | **0.6079** | | **2,570.4061** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.8717 | 26.9770 | 8.5526 | 0.0932 | 2.4639 | 0.0331 | 2.4970 | 0.7093 | 0.0316 | 0.7409 | | 9,838.7365 | 9,838.7365 | 0.3928 | | 9,848.5553 |
| Worker | 5.0646 | 3.2966 | 33.8482 | 0.1162 | 14.0801 | 0.0845 | 14.1646 | 3.7347 | 0.0778 | 3.8125 | | 11,590.1432 | 11,590.1432 | 0.2302 | | 11,595.8974 |
| **Total** | **5.9364** | **30.2736** | **42.4008** | **0.2095** | **16.5440** | **0.1175** | **16.6616** | **4.4440** | **0.1094** | **4.5534** | | **21,428.8797** | **21,428.8797** | **0.6229** | | **21,444.4527** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.5385 | 2.6513 | 17.6413 | 0.0269 | | 0.0930 | 0.0930 | | 0.0930 | 0.0930 | 0.0000 | 2,555.2099 | 2,555.2099 | 0.6079 | | 2,570.4061 |
| **Total** | **0.5385** | **2.6513** | **17.6413** | **0.0269** | | **0.0930** | **0.0930** | | **0.0930** | **0.0930** | **0.0000** | **2,555.2099** | **2,555.2099** | **0.6079** | | **2,570.4061** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.8717 | 26.9770 | 8.5526 | 0.0932 | 2.3585 | 0.0331 | 2.3916 | 0.6834 | 0.0316 | 0.7150 | | 9,838.7365 | 9,838.7365 | 0.3928 | | 9,848.5553 |
| Worker | 5.0646 | 3.2966 | 33.8482 | 0.1162 | 13.3459 | 0.0845 | 13.4304 | 3.5545 | 0.0778 | 3.6323 | | 11,590.1432 | 11,590.1432 | 0.2302 | | 11,595.8974 |
| **Total** | **5.9364** | **30.2736** | **42.4008** | **0.2095** | **15.7044** | **0.1175** | **15.8220** | **4.2379** | **0.1094** | **4.3473** | | **21,428.8797** | **21,428.8797** | **0.6229** | | **21,444.4527** |

## 3.8 Architectural Coating - 2022

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 17.4919 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.6136 | 4.2254 | 5.4408 | 8.9100e-003 | | 0.2452 | 0.2452 | | 0.2452 | 0.2452 | | 844.3442 | 844.3442 | 0.0550 | | 845.7185 |
| **Total** | **18.1055** | **4.2254** | **5.4408** | **8.9100e-003** | | **0.2452** | **0.2452** | | **0.2452** | **0.2452** | | **844.3442** | **844.3442** | **0.0550** | | **845.7185** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Worker | 1.0864 | 0.7345 | 7.3771 | 0.0242 | 2.8177 | 0.0173 | 2.8349 | 0.7474 | 0.0159 | 0.7633 | | 2,413.1112 | 2,413.1112 | 0.0515 | | 2,414.3986 |
| **Total** | **1.0864** | **0.7345** | **7.3771** | **0.0242** | **2.8177** | **0.0173** | **2.8349** | **0.7474** | **0.0159** | **0.7633** | | **2,413.1112** | **2,413.1112** | **0.0515** | | **2,414.3986** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 17.4919 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.0891 | 0.3863 | 5.4972 | 8.9100e-003 | | 0.0119 | 0.0119 | | 0.0119 | 0.0119 | 0.0000 | 844.3441 | 844.3441 | 0.0550 | | 845.7185 |
| **Total** | **17.5810** | **0.3863** | **5.4972** | **8.9100e-003** | | **0.0119** | **0.0119** | | **0.0119** | **0.0119** | **0.0000** | **844.3441** | **844.3441** | **0.0550** | | **845.7185** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 1.0864 | 0.7345 | 7.3771 | 0.0242 | 2.6707 | 0.0173 | 2.6880 | 0.7113 | 0.0159 | 0.7272 | | 2,413.1112 | 2,413.1112 | 0.0515 | | 2,414.3986 |
| **Total** | **1.0864** | **0.7345** | **7.3771** | **0.0242** | **2.6707** | **0.0173** | **2.6880** | **0.7113** | **0.0159** | **0.7272** | | **2,413.1112** | **2,413.1112** | **0.0515** | | **2,414.3986** |

## 3.8 Architectural Coating - 2023

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 17.4919 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.5750 | 3.9090 | 5.4334 | 8.9100e-003 | | 0.2125 | 0.2125 | | 0.2125 | 0.2125 | | 844.3442 | 844.3442 | 0.0505 | | 845.6070 |
| **Total** | **18.0669** | **3.9090** | **5.4334** | **8.9100e-003** | | **0.2125** | **0.2125** | | **0.2125** | **0.2125** | | **844.3442** | **844.3442** | **0.0505** | | **845.6070** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 1.0135 | 0.6597 | 6.7736 | 0.0233 | 2.8177 | 0.0169 | 2.8346 | 0.7474 | 0.0156 | 0.7629 | | 2,319.3811 | 2,319.3811 | 0.0461 | | 2,320.5326 |
| **Total** | **1.0135** | **0.6597** | **6.7736** | **0.0233** | **2.8177** | **0.0169** | **2.8346** | **0.7474** | **0.0156** | **0.7629** | | **2,319.3811** | **2,319.3811** | **0.0461** | | **2,320.5326** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 17.4919 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 0.0891 | 0.3863 | 5.4972 | 8.9100e-003 | | 0.0119 | 0.0119 | | 0.0119 | 0.0119 | 0.0000 | 844.3441 | 844.3441 | 0.0505 | | 845.6070 |
| **Total** | **17.5810** | **0.3863** | **5.4972** | **8.9100e-003** | | **0.0119** | **0.0119** | | **0.0119** | **0.0119** | **0.0000** | **844.3441** | **844.3441** | **0.0505** | | **845.6070** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 1.0135 | 0.6597 | 6.7736 | 0.0233 | 2.6707 | 0.0169 | 2.6876 | 0.7113 | 0.0156 | 0.7269 | | 2,319.3811 | 2,319.3811 | 0.0461 | | 2,320.5326 |
| **Total** | **1.0135** | **0.6597** | **6.7736** | **0.0233** | **2.6707** | **0.0169** | **2.6876** | **0.7113** | **0.0156** | **0.7269** | | **2,319.3811** | **2,319.3811** | **0.0461** | | **2,320.5326** |

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

Increase Diversity

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

Implement NEV Network

Expand Transit Network

Implement Trip Reduction Program

Transit Subsidy

Employee Vanpool/Shuttle

Provide Riade Sharing Program

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 3.5466 | 15.4121 | 43.9647 | 0.1521 | 14.6173 | 0.1200 | 14.7373 | 3.9105 | 0.1118 | 4.0223 | | 15,362.1001 | 15,362.1001 | 0.5322 | | 15,375.4046 |
| Unmitigated | 4.1814 | 19.4058 | 59.6954 | 0.2238 | 22.0172 | 0.1725 | 22.1897 | 5.8901 | 0.1608 | 6.0509 | | 22,594.7341 | 22,594.7341 | 0.7165 | | 22,612.6456 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| City Park | 0.00 | 0.00 | 0.00 | | |
| Condo/Townhouse High Rise | 600.00 | 538.75 | 428.75 | 2,040,171 | 1,354,477 |
| Other Asphalt Surfaces | 0.00 | 0.00 | 0.00 | | |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Recreational Swimming Pool | 0.00 | 0.00 | 0.00 | | |
| Retirement Community | 2,280.00 | 964.25 | 926.25 | 6,834,252 | 4,537,284 |
| Total | 2,880.00 | 1,503.00 | 1,355.00 | 8,874,423 | 5,891,761 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C- | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| City Park | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 66 | 28 | 6 |
| Condo/Townhouse High Rise | 16.80 | 7.50 | 8.90 | 31.00 | 15.00 | 54.00 | 86 | 11 | 3 |
| Other Asphalt Surfaces | 9.50 | 7.30 | 7.30 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Parking Lot | 9.50 | 7.30 | 7.30 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Recreational Swimming Pool | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 52 | 39 | 9 |
| Retirement Community | 16.80 | 7.50 | 8.90 | 31.00 | 15.00 | 54.00 | 86 | 11 | 3 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| City Park | 0.590657 | 0.037535 | 0.185105 | 0.118290 | 0.015611 | 0.005013 | 0.010768 | 0.024764 | 0.001635 | 0.001742 | 0.005351 | 0.002726 | 0.000802 |
| Condo/Townhouse High Rise | 0.590657 | 0.037535 | 0.185105 | 0.118290 | 0.015611 | 0.005013 | 0.010768 | 0.024764 | 0.001635 | 0.001742 | 0.005351 | 0.002726 | 0.000802 |
| Other Asphalt Surfaces | 0.590657 | 0.037535 | 0.185105 | 0.118290 | 0.015611 | 0.005013 | 0.010768 | 0.024764 | 0.001635 | 0.001742 | 0.005351 | 0.002726 | 0.000802 |
| Parking Lot | 0.590657 | 0.037535 | 0.185105 | 0.118290 | 0.015611 | 0.005013 | 0.010768 | 0.024764 | 0.001635 | 0.001742 | 0.005351 | 0.002726 | 0.000802 |
| Recreational Swimming Pool | 0.590657 | 0.037535 | 0.185105 | 0.118290 | 0.015611 | 0.005013 | 0.010768 | 0.024764 | 0.001635 | 0.001742 | 0.005351 | 0.002726 | 0.000802 |
| Retirement Community | 0.590657 | 0.037535 | 0.185105 | 0.118290 | 0.015611 | 0.005013 | 0.010768 | 0.024764 | 0.001635 | 0.001742 | 0.005351 | 0.002726 | 0.000802 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Percent of Electricity Use Generated with Renewable Energy

Install Energy Efficient Appliances

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.1119 | 0.9564 | 0.4070 | 6.1000e-003 | | 0.0773 | 0.0773 | | 0.0773 | 0.0773 | | 1,220.8706 | 1,220.8706 | 0.0234 | 0.0224 | 1,228.1256 |
| NaturalGas Unmitigated | 0.1750 | 1.4958 | 0.6365 | 9.5500e-003 | | 0.1209 | 0.1209 | | 0.1209 | 0.1209 | | 1,909.5520 | 1,909.5520 | 0.0366 | 0.0350 | 1,920.8995 |

### 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Condo/Townhouse High Rise | 2958.72 | 0.0319 | 0.2727 | 0.1160 | 1.7400e-003 | | 0.0221 | 0.0221 | | 0.0221 | 0.0221 | | 348.0842 | 348.0842 | 6.6700e-003 | 6.3800e-003 | 350.1527 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Retirement Community | 13272.5 | 0.1431 | 1.2232 | 0.5205 | 7.8100e-003 | | 0.0989 | 0.0989 | | 0.0989 | 0.0989 | | 1,561.4678 | 1,561.4678 | 0.0299 | 0.0286 | 1,570.7468 |
| **Total** | | **0.1750** | **1.4958** | **0.6365** | **9.5500e-003** | | **0.1209** | **0.1209** | | **0.1209** | **0.1209** | | **1,909.5520** | **1,909.5520** | **0.0366** | **0.0350** | **1,920.8995** |

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Condo/Townhouse High Rise | 1.96325 | 0.0212 | 0.1809 | 0.0770 | 1.1500e-003 | | 0.0146 | 0.0146 | | 0.0146 | 0.0146 | | 230.9707 | 230.9707 | 4.4300e-003 | 4.2300e-003 | 232.3432 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Retirement Community | 8.41415 | 0.0907 | 0.7754 | 0.3300 | 4.9500e-003 | | 0.0627 | 0.0627 | | 0.0627 | 0.0627 | | 989.8999 | 989.8999 | 0.0190 | 0.0182 | 995.7824 |
| **Total** | | **0.1119** | **0.9564** | **0.4070** | **6.1000e-003** | | **0.0773** | **0.0773** | | **0.0773** | **0.0773** | | **1,220.8706** | **1,220.8706** | **0.0234** | **0.0224** | **1,228.1256** |

## 6.0 Area Detail

## 6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

Use Low VOC Cleaning Supplies

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 13.2831 | 0.4525 | 37.6769 | 1.7000e-003 | | 0.2043 | 0.2043 | | 0.2043 | 0.2043 | 0.0000 | 62.4659 | 62.4659 | 0.0451 | 0.0000 | 63.5921 |
| Unmitigated | 17.5681 | 4.2873 | 51.1760 | 0.0263 | | 0.5748 | 0.5748 | | 0.5748 | 0.5748 | 0.0000 | 4,832.8388 | 4,832.8388 | 0.1771 | 0.0870 | 4,863.1816 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 2.3914 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Consumer Products | 13.2426 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.4348 | 3.7158 | 1.5812 | 0.0237 | | 0.3004 | 0.3004 | | 0.3004 | 0.3004 | 0.0000 | 4,743.5294 | 4,743.5294 | 0.0909 | 0.0870 | 4,771.7178 |
| Landscaping | 1.4993 | 0.5715 | 49.5948 | 2.6200e-003 | | 0.2743 | 0.2743 | | 0.2743 | 0.2743 | | 89.3094 | 89.3094 | 0.0862 | | 91.4638 |
| **Total** | **17.5681** | **4.2873** | **51.1760** | **0.0263** | | **0.5748** | **0.5748** | | **0.5748** | **0.5748** | **0.0000** | **4,832.8388** | **4,832.8388** | **0.1771** | **0.0870** | **4,863.1816** |

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.2110 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 12.2778 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 0.7943 | 0.4525 | 37.6769 | 1.7000e-003 | | 0.2043 | 0.2043 | | 0.2043 | 0.2043 | | 62.4659 | 62.4659 | 0.0451 | | 63.5921 |
| **Total** | **13.2831** | **0.4525** | **37.6769** | **1.7000e-003** | | **0.2043** | **0.2043** | | **0.2043** | **0.2043** | **0.0000** | **62.4659** | **62.4659** | **0.0451** | **0.0000** | **63.5921** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

Use Reclaimed Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Turf Reduction

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

## 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

**Boilers**

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

**User Defined Equipment**

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

# Vineyards at Deer Creek - Phase 1

**Contra Costa County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Other Asphalt Surfaces | 495.00 | 1000sqft | 11.36 | 495,000.00 | 0 |
| Parking Lot | 260.00 | Space | 2.34 | 104,000.00 | 0 |
| City Park | 56.25 | Acre | 56.25 | 2,450,250.00 | 0 |
| Recreational Swimming Pool | 2.00 | 1000sqft | 0.05 | 2,000.00 | 0 |
| Condo/Townhouse High Rise | 125.00 | Dwelling Unit | 1.95 | 125,000.00 | 358 |
| Retirement Community | 475.00 | Dwelling Unit | 95.00 | 475,000.00 | 1359 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 58 |
| **Climate Zone** | 4 | | | **Operational Year** | 2023 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 146 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - Per PG&E CRSR

Land Use - Phase 1
Parking: assumed 2 spaces for 125 DUs, plus 10 extra spaces for recreation uses
Other asphalt surfaces is American Ave extension
City Park is open space/ agricultural uses

Construction Phase - Anticipated schedule

Off-road Equipment - Estimated equipment use

Off-road Equipment -

Off-road Equipment - No demolition

Off-road Equipment - Estimated equipment use

Off-road Equipment -

Off-road Equipment - anticipated equipment

Off-road Equipment -

Off-road Equipment -

Trips and VMT - vendor trips would be lower since city park was used to model the proposed natural open space, informal parkland, low impact trails, etc.

Demolition - No demolition

Grading - Balanced between all phases

Vehicle Trips - Per Fehr and Peers TIA 2019, blended rate used

Woodstoves - Per BAAQMD Regulation 6, Rule 3

Energy Use -

Land Use Change -

Construction Off-road Equipment Mitigation - Per BAAQMD basic and advanced control measures

Mobile Land Use Mitigation - Green building design elements include narrower roadways

Mobile Commute Mitigation -

Area Mitigation - No hearth, low VOC cleaning supplies, low VOC paint, and electric landscape equipment

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblAreaMitigation | UseLowVOCPaintNonresidentialExteriorValue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintNonresidentialInteriorValue | 100 | 10 |
| tblAreaMitigation | UseLowVOCPaintParkingCheck | False | True |
| tblAreaMitigation | UseLowVOCPaintParkingValue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintResidentialExteriorValue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintResidentialInteriorValue | 100 | 10 |
| tblConstDustMitigation | CleanPavedRoadPercentReduction | 0 | 6 |

| | | | |
|---|---|---|---|
| tblConstDustMitigation | WaterUnpavedRoadMoistureContent | 0 | 12 |
| tblConstDustMitigation | WaterUnpavedRoadVehicleSpeed | 0 | 15 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 8.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 6.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 4.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 12.00 |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstructionPhase | NumDays | 220.00 | 499.00 |
| tblConstructionPhase | NumDays | 3,100.00 | 573.00 |
| tblConstructionPhase | NumDays | 200.00 | 0.00 |

| | | | |
|---|---|---|---|
| tblConstructionPhase | NumDays | 310.00 | 110.00 |
| tblConstructionPhase | NumDays | 220.00 | 22.00 |
| tblConstructionPhase | NumDays | 120.00 | 10.00 |
| tblFireplaces | NumberGas | 18.75 | 40.00 |
| tblFireplaces | NumberGas | 71.25 | 152.00 |
| tblFireplaces | NumberWood | 21.25 | 0.00 |
| tblFireplaces | NumberWood | 80.75 | 0.00 |
| tblOffRoadEquipment | HorsePower | 203.00 | 80.00 |
| tblOffRoadEquipment | LoadFactor | 0.36 | 0.38 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 4.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 3.00 |
| tblProjectCharacteristics | CO2IntensityFactor | 641.35 | 146 |
| tblTripsAndVMT | VendorTripNumber | 564.00 | 364.00 |
| tblVehicleTrips | HO_TL | 5.70 | 8.90 |
| tblVehicleTrips | HO_TL | 5.70 | 8.90 |
| tblVehicleTrips | HS_TL | 4.80 | 7.50 |
| tblVehicleTrips | HS_TL | 4.80 | 7.50 |
| tblVehicleTrips | HW_TL | 10.80 | 16.80 |
| tblVehicleTrips | HW_TL | 10.80 | 16.80 |
| tblVehicleTrips | ST_TR | 22.75 | 0.00 |
| tblVehicleTrips | ST_TR | 9.10 | 0.00 |
| tblVehicleTrips | SU_TR | 16.74 | 0.00 |
| tblVehicleTrips | SU_TR | 13.60 | 0.00 |
| tblVehicleTrips | WD_TR | 1.89 | 0.00 |
| tblVehicleTrips | WD_TR | 4.18 | 4.80 |
| tblVehicleTrips | WD_TR | 33.82 | 0.00 |
| tblVehicleTrips | WD_TR | 2.40 | 4.80 |
| tblWoodstoves | NumberCatalytic | 2.50 | 0.00 |
| tblWoodstoves | NumberCatalytic | 9.50 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 2.50 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 9.50 | 0.00 |

## 2.0 Emissions Summary

### 2.1 Overall Construction

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2021 | 0.6816 | 6.2610 | 5.2775 | 0.0135 | 1.1267 | 0.2410 | 1.3676 | 0.3792 | 0.2223 | 0.6015 | 0.0000 | 1,210.9582 | 1,210.9582 | 0.2211 | 0.0000 | 1,216.4845 |
| 2022 | 3.2892 | 7.6668 | 9.4925 | 0.0361 | 2.4035 | 0.1573 | 2.5608 | 0.6464 | 0.1496 | 0.7960 | 0.0000 | 3,309.1760 | 3,309.1760 | 0.1680 | 0.0000 | 3,313.3770 |
| 2023 | 3.3793 | 6.3606 | 9.0303 | 0.0353 | 2.4321 | 0.1360 | 2.5681 | 0.6540 | 0.1294 | 0.7834 | 0.0000 | 3,239.7378 | 3,239.7378 | 0.1547 | 0.0000 | 3,243.6055 |
| **Maximum** | **3.3793** | **7.6668** | **9.4925** | **0.0361** | **2.4321** | **0.2410** | **2.5681** | **0.6540** | **0.2223** | **0.7960** | **0.0000** | **3,309.1760** | **3,309.1760** | **0.2211** | **0.0000** | **3,313.3770** |

**Mitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2021 | 0.2942 | 1.5243 | 5.4943 | 0.0135 | 0.7127 | 0.0185 | 0.7312 | 0.2249 | 0.0182 | 0.2431 | 0.0000 | 1,210.9574 | 1,210.9574 | 0.2211 | 0.0000 | 1,216.4837 |
| 2022 | 3.0776 | 5.5282 | 9.6677 | 0.0361 | 2.2819 | 0.0374 | 2.3193 | 0.6166 | 0.0360 | 0.6525 | 0.0000 | 3,309.1756 | 3,309.1756 | 0.1680 | 0.0000 | 3,313.3765 |
| 2023 | 3.1817 | 4.3773 | 9.2202 | 0.0353 | 2.3090 | 0.0310 | 2.3400 | 0.6238 | 0.0298 | 0.6536 | 0.0000 | 3,239.7373 | 3,239.7373 | 0.1547 | 0.0000 | 3,243.6051 |
| **Maximum** | **3.1817** | **5.5282** | **9.6677** | **0.0361** | **2.3090** | **0.0374** | **2.3400** | **0.6238** | **0.0360** | **0.6536** | **0.0000** | **3,309.1756** | **3,309.1756** | **0.2211** | **0.0000** | **3,313.3765** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **10.84** | **43.66** | **-2.45** | **0.00** | **11.05** | **83.73** | **17.03** | **12.77** | **83.25** | **28.97** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---|---|---|---|---|
| **1** | **1-1-2021** | **3-31-2021** | 2.2310 | 0.1811 |
| **2** | **4-1-2021** | **6-30-2021** | 2.1591 | 0.1827 |
| **3** | **7-1-2021** | **9-30-2021** | 0.6691 | 0.0787 |
| **4** | **10-1-2021** | **12-31-2021** | 1.8820 | 1.3786 |
| **5** | **1-1-2022** | **3-31-2022** | 2.5348 | 1.9907 |
| **6** | **4-1-2022** | **6-30-2022** | 2.7925 | 2.1935 |
| **7** | **7-1-2022** | **9-30-2022** | 2.8232 | 2.2176 |
| **8** | **10-1-2022** | **12-31-2022** | 2.8645 | 2.2589 |
| **9** | **1-1-2023** | **3-31-2023** | 2.4370 | 1.8977 |
| **10** | **4-1-2023** | **6-30-2023** | 2.4304 | 1.8852 |
| **11** | **7-1-2023** | **9-30-2023** | 2.4572 | 1.9059 |
| | | **Highest** | 2.8645 | 2.2589 |

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 2.9906 | 0.0721 | 4.4723 | 3.7000e-004 | | 0.0264 | 0.0264 | | 0.0264 | 0.0264 | 0.0000 | 31.2610 | 31.2610 | 7.5000e-003 | 4.4000e-004 | 31.5793 |
| Energy | 0.0320 | 0.2730 | 0.1162 | 1.7400e-003 | | 0.0221 | 0.0221 | | 0.0221 | 0.0221 | 0.0000 | 497.6812 | 497.6812 | 0.0421 | 0.0133 | 502.6845 |
| Mobile | 0.6647 | 2.9406 | 8.9941 | 0.0352 | 3.3138 | 0.0268 | 3.3406 | 0.8891 | 0.0250 | 0.9141 | 0.0000 | 3,228.2757 | 3,228.2757 | 0.0995 | 0.0000 | 3,230.7631 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 59.3221 | 0.0000 | 59.3221 | 3.5058 | 0.0000 | 146.9679 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 12.4398 | 35.3145 | 47.7542 | 1.2847 | 0.0316 | 89.2944 |
| **Total** | **3.6872** | **3.2858** | **13.5826** | **0.0374** | **3.3138** | **0.0752** | **3.3890** | **0.8891** | **0.0734** | **0.9625** | **71.7618** | **3,792.5323** | **3,864.2941** | **4.9396** | **0.0453** | **4,001.2892** |

## Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 2.3507 | 0.0407 | 3.3909 | 1.5000e-004 | | 0.0184 | 0.0184 | | 0.0184 | 0.0184 | 0.0000 | 5.1001 | 5.1001 | 3.6800e-003 | 0.0000 | 5.1921 |
| Energy | 0.0204 | 0.1745 | 0.0743 | 1.1100e-003 | | 0.0141 | 0.0141 | | 0.0141 | 0.0141 | 0.0000 | 202.1288 | 202.1288 | 3.8700e-003 | 3.7100e-003 | 203.3300 |
| Mobile | 0.5666 | 2.3475 | 6.5427 | 0.0240 | 2.2000 | 0.0186 | 2.2187 | 0.5903 | 0.0174 | 0.6076 | 0.0000 | 2,197.1066 | 2,197.1066 | 0.0734 | 0.0000 | 2,198.9408 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 14.8305 | 0.0000 | 14.8305 | 0.8765 | 0.0000 | 36.7420 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 9.9518 | 28.2516 | 38.2034 | 1.0278 | 0.0253 | 71.4355 |
| **Total** | **2.9377** | **2.5627** | **10.0079** | **0.0252** | **2.2000** | **0.0511** | **2.2512** | **0.5903** | **0.0499** | **0.6401** | **24.7823** | **2,432.5872** | **2,457.3695** | **1.9851** | **0.0290** | **2,515.6404** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **20.33** | **22.00** | **26.32** | **32.45** | **33.61** | **32.03** | **33.57** | **33.61** | **32.08** | **33.49** | **65.47** | **35.86** | **36.41** | **59.81** | **35.99** | **37.13** |

## 2.3 Vegetation

### Vegetation

| | CO2e |
|---|---|
| Category | MT |
| Vegetation Land Change | -637.8800 |
| **Total** | **-637.8800** |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Demolition | Demolition | 1/1/2021 | 12/31/2020 | 5 | 0 | |
| 2 | Site Preparation | Site Preparation | 1/1/2021 | 1/14/2021 | 5 | 10 | |
| 3 | Grading | Grading | 1/15/2021 | 6/17/2021 | 5 | 110 | |
| 4 | Intrastructure Improvements | Trenching | 6/18/2021 | 9/17/2021 | 5 | 66 | |
| 5 | Paving | Paving | 9/18/2021 | 10/19/2021 | 5 | 22 | |
| 6 | Building Construction | Building Construction | 10/20/2021 | 12/31/2023 | 5 | 573 | |
| 7 | Architectural Coating | Architectural Coating | 2/1/2022 | 12/29/2023 | 5 | 499 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 495**

**Acres of Paving: 13.7**

**Residential Indoor: 1,215,000; Residential Outdoor: 405,000; Non-Residential Indoor: 4,500; Non-Residential Outdoor: 1,500; Striped**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Demolition | Excavators | 3 | 8.00 | 158 | 0.38 |
| Demolition | Rubber Tired Dozers | 2 | 8.00 | 247 | 0.40 |
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 4 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |

| | | | | | |
|---|---|---|---|---|---|
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 3 | 6.00 | 78 | 0.48 |
| Intrastructure Improvements | Excavators | 3 | 8.00 | 158 | 0.38 |
| Intrastructure Improvements | Rubber Tired Loaders | 3 | 8.00 | 80 | 0.38 |
| Intrastructure Improvements | Tractors/Loaders/Backhoes | 3 | 8.00 | 97 | 0.37 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Demolition | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 10 | 25.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 1,714.00 | 364.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 3 | 343.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Intrastructure Improvements | 9 | 23.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

## 3.3 Site Preparation - 2021

## Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.0903 | 0.0000 | 0.0903 | 0.0497 | 0.0000 | 0.0497 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0194 | 0.2025 | 0.1058 | 1.9000e-004 | | 0.0102 | 0.0102 | | 9.4000e-003 | 9.4000e-003 | 0.0000 | 16.7179 | 16.7179 | 5.4100e-003 | 0.0000 | 16.8530 |
| **Total** | **0.0194** | **0.2025** | **0.1058** | **1.9000e-004** | **0.0903** | **0.0102** | **0.1006** | **0.0497** | **9.4000e-003** | **0.0591** | **0.0000** | **16.7179** | **16.7179** | **5.4100e-003** | **0.0000** | **16.8530** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 2.8000e-004 | 1.9000e-004 | 2.0600e-003 | 1.0000e-005 | 7.1000e-004 | 0.0000 | 7.2000e-004 | 1.9000e-004 | 0.0000 | 1.9000e-004 | 0.0000 | 0.6040 | 0.6040 | 1.0000e-005 | 0.0000 | 0.6044 |
| **Total** | **2.8000e-004** | **1.9000e-004** | **2.0600e-003** | **1.0000e-005** | **7.1000e-004** | **0.0000** | **7.2000e-004** | **1.9000e-004** | **0.0000** | **1.9000e-004** | **0.0000** | **0.6040** | **0.6040** | **1.0000e-005** | **0.0000** | **0.6044** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fugitive Dust | | | | | 0.0386 | 0.0000 | 0.0386 | 0.0212 | 0.0000 | 0.0212 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 2.3300e-003 | 0.0101 | 0.1043 | 1.9000e-004 | | 3.1000e-004 | 3.1000e-004 | | 3.1000e-004 | 3.1000e-004 | 0.0000 | 16.7178 | 16.7178 | 5.4100e-003 | 0.0000 | 16.8530 |
| **Total** | **2.3300e-003** | **0.0101** | **0.1043** | **1.9000e-004** | **0.0386** | **3.1000e-004** | **0.0389** | **0.0212** | **3.1000e-004** | **0.0215** | **0.0000** | **16.7178** | **16.7178** | **5.4100e-003** | **0.0000** | **16.8530** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 2.8000e-004 | 1.9000e-004 | 2.0600e-003 | 1.0000e-005 | 6.8000e-004 | 0.0000 | 6.8000e-004 | 1.8000e-004 | 0.0000 | 1.9000e-004 | 0.0000 | 0.6040 | 0.6040 | 1.0000e-005 | 0.0000 | 0.6044 |
| **Total** | **2.8000e-004** | **1.9000e-004** | **2.0600e-003** | **1.0000e-005** | **6.8000e-004** | **0.0000** | **6.8000e-004** | **1.8000e-004** | **0.0000** | **1.9000e-004** | **0.0000** | **0.6040** | **0.6040** | **1.0000e-005** | **0.0000** | **0.6044** |

## 3.4 Grading - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.5937 | 0.0000 | 0.5937 | 0.2104 | 0.0000 | 0.2104 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.3328 | 3.7293 | 2.4688 | 5.0800e-003 | | 0.1550 | 0.1550 | | 0.1426 | 0.1426 | 0.0000 | 446.2058 | 446.2058 | 0.1443 | 0.0000 | 449.8136 |
| **Total** | **0.3328** | **3.7293** | **2.4688** | **5.0800e-003** | **0.5937** | **0.1550** | **0.7487** | **0.2104** | **0.1426** | **0.3530** | **0.0000** | **446.2058** | **446.2058** | **0.1443** | **0.0000** | **449.8136** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 4.2600e-003 | 2.9800e-003 | 0.0315 | 1.0000e-004 | 0.0109 | 7.0000e-005 | 0.0110 | 2.9000e-003 | 7.0000e-005 | 2.9700e-003 | 0.0000 | 9.2280 | 9.2280 | 2.1000e-004 | 0.0000 | 9.2332 |
| **Total** | **4.2600e-003** | **2.9800e-003** | **0.0315** | **1.0000e-004** | **0.0109** | **7.0000e-005** | **0.0110** | **2.9000e-003** | **7.0000e-005** | **2.9700e-003** | **0.0000** | **9.2280** | **9.2280** | **2.1000e-004** | **0.0000** | **9.2332** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.2538 | 0.0000 | 0.2538 | 0.0900 | 0.0000 | 0.0900 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0624 | 0.2704 | 2.5668 | 5.0800e-003 | | 8.3200e-003 | 8.3200e-003 | | 8.3200e-003 | 8.3200e-003 | 0.0000 | 446.2052 | 446.2052 | 0.1443 | 0.0000 | 449.8130 |
| **Total** | **0.0624** | **0.2704** | **2.5668** | **5.0800e-003** | **0.2538** | **8.3200e-003** | **0.2621** | **0.0900** | **8.3200e-003** | **0.0983** | **0.0000** | **446.2052** | **446.2052** | **0.1443** | **0.0000** | **449.8130** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 4.2600e-003 | 2.9800e-003 | 0.0315 | 1.0000e-004 | 0.0103 | 7.0000e-005 | 0.0104 | 2.7600e-003 | 7.0000e-005 | 2.8300e-003 | 0.0000 | 9.2280 | 9.2280 | 2.1000e-004 | 0.0000 | 9.2332 |
| **Total** | **4.2600e-003** | **2.9800e-003** | **0.0315** | **1.0000e-004** | **0.0103** | **7.0000e-005** | **0.0104** | **2.7600e-003** | **7.0000e-005** | **2.8300e-003** | **0.0000** | **9.2280** | **9.2280** | **2.1000e-004** | **0.0000** | **9.2332** |

## 3.5 Intrastructure Improvements - 2021

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0677 | 0.6246 | 0.7543 | 1.0700e-003 | | 0.0382 | 0.0382 | | 0.0351 | 0.0351 | 0.0000 | 94.4070 | 94.4070 | 0.0305 | 0.0000 | 95.1703 |
| **Total** | **0.0677** | **0.6246** | **0.7543** | **1.0700e-003** | | **0.0382** | **0.0382** | | **0.0351** | **0.0351** | **0.0000** | **94.4070** | **94.4070** | **0.0305** | **0.0000** | **95.1703** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 2.3500e-003 | 1.6400e-003 | 0.0174 | 6.0000e-005 | 6.0200e-003 | 4.0000e-005 | 6.0600e-003 | 1.6000e-003 | 4.0000e-005 | 1.6400e-003 | 0.0000 | 5.0938 | 5.0938 | 1.2000e-004 | 0.0000 | 5.0967 |
| **Total** | **2.3500e-003** | **1.6400e-003** | **0.0174** | **6.0000e-005** | **6.0200e-003** | **4.0000e-005** | **6.0600e-003** | **1.6000e-003** | **4.0000e-005** | **1.6400e-003** | **0.0000** | **5.0938** | **5.0938** | **1.2000e-004** | **0.0000** | **5.0967** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0132 | 0.0574 | 0.8161 | 1.0700e-003 | | 1.7600e-003 | 1.7600e-003 | | 1.7600e-003 | 1.7600e-003 | 0.0000 | 94.4069 | 94.4069 | 0.0305 | 0.0000 | 95.1702 |
| **Total** | **0.0132** | **0.0574** | **0.8161** | **1.0700e-003** | | **1.7600e-003** | **1.7600e-003** | | **1.7600e-003** | **1.7600e-003** | **0.0000** | **94.4069** | **94.4069** | **0.0305** | **0.0000** | **95.1702** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 2.3500e-003 | 1.6400e-003 | 0.0174 | 6.0000e-005 | 5.7100e-003 | 4.0000e-005 | 5.7500e-003 | 1.5200e-003 | 4.0000e-005 | 1.5600e-003 | 0.0000 | 5.0938 | 5.0938 | 1.2000e-004 | 0.0000 | 5.0967 |
| **Total** | **2.3500e-003** | **1.6400e-003** | **0.0174** | **6.0000e-005** | **5.7100e-003** | **4.0000e-005** | **5.7500e-003** | **1.5200e-003** | **4.0000e-005** | **1.5600e-003** | **0.0000** | **5.0938** | **5.0938** | **1.2000e-004** | **0.0000** | **5.0967** |

## 3.6 Paving - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 0.0138 | 0.1421 | 0.1612 | 2.5000e-004 | | 7.4500e-003 | 7.4500e-003 | | 6.8600e-003 | 6.8600e-003 | 0.0000 | 22.0258 | 22.0258 | 7.1200e-003 | 0.0000 | 22.2039 |
| Paving | 0.0180 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0318** | **0.1421** | **0.1612** | **2.5000e-004** | | **7.4500e-003** | **7.4500e-003** | | **6.8600e-003** | **6.8600e-003** | **0.0000** | **22.0258** | **22.0258** | **7.1200e-003** | **0.0000** | **22.2039** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 5.1000e-004 | 3.6000e-004 | 3.7800e-003 | 1.0000e-005 | 1.3100e-003 | 1.0000e-005 | 1.3200e-003 | 3.5000e-004 | 1.0000e-005 | 3.6000e-004 | 0.0000 | 1.1074 | 1.1074 | 3.0000e-005 | 0.0000 | 1.1080 |
| **Total** | **5.1000e-004** | **3.6000e-004** | **3.7800e-003** | **1.0000e-005** | **1.3100e-003** | **1.0000e-005** | **1.3200e-003** | **3.5000e-004** | **1.0000e-005** | **3.6000e-004** | **0.0000** | **1.1074** | **1.1074** | **3.0000e-005** | **0.0000** | **1.1080** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 3.0900e-003 | 0.0134 | 0.1903 | 2.5000e-004 | | 4.1000e-004 | 4.1000e-004 | | 4.1000e-004 | 4.1000e-004 | 0.0000 | 22.0258 | 22.0258 | 7.1200e-003 | 0.0000 | 22.2039 |
| Paving | 0.0180 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0210** | **0.0134** | **0.1903** | **2.5000e-004** | | **4.1000e-004** | **4.1000e-004** | | **4.1000e-004** | **4.1000e-004** | **0.0000** | **22.0258** | **22.0258** | **7.1200e-003** | **0.0000** | **22.2039** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 5.1000e-004 | 3.6000e-004 | 3.7800e-003 | 1.0000e-005 | 1.2400e-003 | 1.0000e-005 | 1.2500e-003 | 3.3000e-004 | 1.0000e-005 | 3.4000e-004 | 0.0000 | 1.1074 | 1.1074 | 3.0000e-005 | 0.0000 | 1.1080 |
| **Total** | **5.1000e-004** | **3.6000e-004** | **3.7800e-003** | **1.0000e-005** | **1.2400e-003** | **1.0000e-005** | **1.2500e-003** | **3.3000e-004** | **1.0000e-005** | **3.4000e-004** | **0.0000** | **1.1074** | **1.1074** | **3.0000e-005** | **0.0000** | **1.1080** |

## 3.7 Building Construction - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0504 | 0.4620 | 0.4392 | 7.1000e-004 | | 0.0254 | 0.0254 | | 0.0239 | 0.0239 | 0.0000 | 61.3839 | 61.3839 | 0.0148 | 0.0000 | 61.7541 |
| **Total** | **0.0504** | **0.4620** | **0.4392** | **7.1000e-004** | | **0.0254** | **0.0254** | | **0.0239** | **0.0239** | **0.0000** | **61.3839** | **61.3839** | **0.0148** | **0.0000** | **61.7541** |

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0316 | 0.9971 | 0.2533 | 2.6100e-003 | 0.0634 | 2.2400e-003 | 0.0657 | 0.0183 | 2.1400e-003 | 0.0205 | 0.0000 | 249.3535 | 249.3535 | 0.0116 | 0.0000 | 249.6429 |
| Worker | 0.1407 | 0.0983 | 1.0402 | 3.3700e-003 | 0.3602 | 2.3400e-003 | 0.3626 | 0.0958 | 2.1600e-003 | 0.0980 | 0.0000 | 304.8312 | 304.8312 | 6.9300e-003 | 0.0000 | 305.0044 |
| **Total** | **0.1723** | **1.0954** | **1.2935** | **5.9800e-003** | **0.4237** | **4.5800e-003** | **0.4283** | **0.1142** | **4.3000e-003** | **0.1184** | **0.0000** | **554.1847** | **554.1847** | **0.0185** | **0.0000** | **554.6473** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0156 | 0.0726 | 0.4686 | 7.1000e-004 | | 2.9700e-003 | 2.9700e-003 | | 2.9700e-003 | 2.9700e-003 | 0.0000 | 61.3838 | 61.3838 | 0.0148 | 0.0000 | 61.7540 |
| **Total** | **0.0156** | **0.0726** | **0.4686** | **7.1000e-004** | | **2.9700e-003** | **2.9700e-003** | | **2.9700e-003** | **2.9700e-003** | **0.0000** | **61.3838** | **61.3838** | **0.0148** | **0.0000** | **61.7540** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0316 | 0.9971 | 0.2533 | 2.6100e-003 | 0.0608 | 2.2400e-003 | 0.0630 | 0.0177 | 2.1400e-003 | 0.0198 | 0.0000 | 249.3535 | 249.3535 | 0.0116 | 0.0000 | 249.6429 |
| Worker | 0.1407 | 0.0983 | 1.0402 | 3.3700e-003 | 0.3416 | 2.3400e-003 | 0.3439 | 0.0912 | 2.1600e-003 | 0.0934 | 0.0000 | 304.8312 | 304.8312 | 6.9300e-003 | 0.0000 | 305.0044 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | **0.1723** | **1.0954** | **1.2935** | **5.9800e-003** | **0.4023** | **4.5800e-003** | **0.4069** | **0.1089** | **4.3000e-003** | **0.1132** | **0.0000** | **554.1847** | **554.1847** | **0.0185** | **0.0000** | **554.6473** |

## 3.7 Building Construction - 2022

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.2218 | 2.0300 | 2.1272 | 3.5000e-003 | | 0.1052 | 0.1052 | | 0.0990 | 0.0990 | 0.0000 | 301.2428 | 301.2428 | 0.0722 | 0.0000 | 303.0471 |
| **Total** | **0.2218** | **2.0300** | **2.1272** | **3.5000e-003** | | **0.1052** | **0.1052** | | **0.0990** | **0.0990** | **0.0000** | **301.2428** | **301.2428** | **0.0722** | **0.0000** | **303.0471** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1444 | 4.6200 | 1.1653 | 0.0127 | 0.3112 | 9.5200e-003 | 0.3207 | 0.0900 | 9.1000e-003 | 0.0991 | 0.0000 | 1,211.6531 | 1,211.6531 | 0.0539 | 0.0000 | 1,212.9993 |
| Worker | 0.6414 | 0.4323 | 4.6876 | 0.0159 | 1.7672 | 0.0112 | 1.7784 | 0.4700 | 0.0103 | 0.4803 | 0.0000 | 1,439.8759 | 1,439.8759 | 0.0305 | 0.0000 | 1,440.6374 |
| **Total** | **0.7858** | **5.0523** | **5.8528** | **0.0286** | **2.0785** | **0.0207** | **2.0992** | **0.5600** | **0.0194** | **0.5794** | **0.0000** | **2,651.5290** | **2,651.5290** | **0.0843** | **0.0000** | **2,653.6367** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0729 | 0.3502 | 2.2957 | 3.5000e-003 | | 0.0132 | 0.0132 | | 0.0132 | 0.0132 | 0.0000 | 301.2425 | 301.2425 | 0.0722 | 0.0000 | 303.0467 |
| **Total** | **0.0729** | **0.3502** | **2.2957** | **3.5000e-003** | | **0.0132** | **0.0132** | | **0.0132** | **0.0132** | **0.0000** | **301.2425** | **301.2425** | **0.0722** | **0.0000** | **303.0467** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1444 | 4.6200 | 1.1653 | 0.0127 | 0.2981 | 9.5200e-003 | 0.3076 | 0.0867 | 9.1000e-003 | 0.0958 | 0.0000 | 1,211.6531 | 1,211.6531 | 0.0539 | 0.0000 | 1,212.9993 |
| Worker | 0.6414 | 0.4323 | 4.6876 | 0.0159 | 1.6756 | 0.0112 | 1.6868 | 0.4475 | 0.0103 | 0.4578 | 0.0000 | 1,439.8759 | 1,439.8759 | 0.0305 | 0.0000 | 1,440.6374 |
| **Total** | **0.7858** | **5.0523** | **5.8528** | **0.0286** | **1.9736** | **0.0207** | **1.9944** | **0.5342** | **0.0194** | **0.5537** | **0.0000** | **2,651.5290** | **2,651.5290** | **0.0843** | **0.0000** | **2,653.6367** |

## 3.7 Building Construction - 2023

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.2045 | 1.8700 | 2.1117 | 3.5000e-003 | | 0.0910 | 0.0910 | | 0.0856 | 0.0856 | 0.0000 | 301.3462 | 301.3462 | 0.0717 | 0.0000 | 303.1383 |
| **Total** | **0.2045** | **1.8700** | **2.1117** | **3.5000e-003** | | **0.0910** | **0.0910** | | **0.0856** | **0.0856** | **0.0000** | **301.3462** | **301.3462** | **0.0717** | **0.0000** | **303.1383** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1090 | 3.5164 | 1.0386 | 0.0123 | 0.3112 | 4.2000e-003 | 0.3154 | 0.0900 | 4.0100e-003 | 0.0940 | 0.0000 | 1,177.9253 | 1,177.9253 | 0.0443 | 0.0000 | 1,179.0330 |
| Worker | 0.5976 | 0.3883 | 4.3109 | 0.0153 | 1.7672 | 0.0110 | 1.7782 | 0.4700 | 0.0101 | 0.4801 | 0.0000 | 1,383.9400 | 1,383.9400 | 0.0273 | 0.0000 | 1,384.6224 |
| **Total** | **0.7066** | **3.9047** | **5.3495** | **0.0276** | **2.0785** | **0.0152** | **2.0936** | **0.5600** | **0.0141** | **0.5741** | **0.0000** | **2,561.8653** | **2,561.8653** | **0.0716** | **0.0000** | **2,563.6554** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0700 | 0.3447 | 2.2934 | 3.5000e-003 | | 0.0121 | 0.0121 | | 0.0121 | 0.0121 | 0.0000 | 301.3458 | 301.3458 | 0.0717 | 0.0000 | 303.1380 |
| **Total** | **0.0700** | **0.3447** | **2.2934** | **3.5000e-003** | | **0.0121** | **0.0121** | | **0.0121** | **0.0121** | **0.0000** | **301.3458** | **301.3458** | **0.0717** | **0.0000** | **303.1380** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1090 | 3.5164 | 1.0386 | 0.0123 | 0.2981 | 4.2000e-003 | 0.3023 | 0.0868 | 4.0100e-003 | 0.0908 | 0.0000 | 1,177.9253 | 1,177.9253 | 0.0443 | 0.0000 | 1,179.0330 |
| Worker | 0.5976 | 0.3883 | 4.3109 | 0.0153 | 1.6756 | 0.0110 | 1.6865 | 0.4475 | 0.0101 | 0.4576 | 0.0000 | 1,383.9400 | 1,383.9400 | 0.0273 | 0.0000 | 1,384.6224 |
| **Total** | **0.7066** | **3.9047** | **5.3495** | **0.0276** | **1.9736** | **0.0152** | **1.9888** | **0.5343** | **0.0141** | **0.5484** | **0.0000** | **2,561.8653** | **2,561.8653** | **0.0716** | **0.0000** | **2,563.6554** |

## 3.8 Architectural Coating - 2022

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 2.0903 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0733 | 0.5049 | 0.6502 | 1.0700e-003 | | 0.0293 | 0.0293 | | 0.0293 | 0.0293 | 0.0000 | 91.5342 | 91.5342 | 5.9600e-003 | 0.0000 | 91.6831 |
| **Total** | **2.1636** | **0.5049** | **0.6502** | **1.0700e-003** | | **0.0293** | **0.0293** | | **0.0293** | **0.0293** | **0.0000** | **91.5342** | **91.5342** | **5.9600e-003** | **0.0000** | **91.6831** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Worker | 0.1180 | 0.0795 | 0.8623 | 2.9300e-003 | 0.3251 | 2.0600e-003 | 0.3272 | 0.0865 | 1.9000e-003 | 0.0884 | 0.0000 | 264.8701 | 264.8701 | 5.6000e-003 | 0.0000 | 265.0102 |
| **Total** | **0.1180** | **0.0795** | **0.8623** | **2.9300e-003** | **0.3251** | **2.0600e-003** | **0.3272** | **0.0865** | **1.9000e-003** | **0.0884** | **0.0000** | **264.8701** | **264.8701** | **5.6000e-003** | **0.0000** | **265.0102** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 2.0903 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0107 | 0.0462 | 0.6569 | 1.0700e-003 | | 1.4200e-003 | 1.4200e-003 | | 1.4200e-003 | 1.4200e-003 | 0.0000 | 91.5340 | 91.5340 | 5.9600e-003 | 0.0000 | 91.6830 |
| **Total** | **2.1009** | **0.0462** | **0.6569** | **1.0700e-003** | | **1.4200e-003** | **1.4200e-003** | | **1.4200e-003** | **1.4200e-003** | **0.0000** | **91.5340** | **91.5340** | **5.9600e-003** | **0.0000** | **91.6830** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1180 | 0.0795 | 0.8623 | 2.9300e-003 | 0.3082 | 2.0600e-003 | 0.3103 | 0.0823 | 1.9000e-003 | 0.0842 | 0.0000 | 264.8701 | 264.8701 | 5.6000e-003 | 0.0000 | 265.0102 |
| **Total** | **0.1180** | **0.0795** | **0.8623** | **2.9300e-003** | **0.3082** | **2.0600e-003** | **0.3103** | **0.0823** | **1.9000e-003** | **0.0842** | **0.0000** | **264.8701** | **264.8701** | **5.6000e-003** | **0.0000** | **265.0102** |

## 3.8 Architectural Coating - 2023

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 2.2739 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0748 | 0.5082 | 0.7063 | 1.1600e-003 | | 0.0276 | 0.0276 | | 0.0276 | 0.0276 | 0.0000 | 99.5769 | 99.5769 | 5.9600e-003 | 0.0000 | 99.7258 |
| **Total** | **2.3487** | **0.5082** | **0.7063** | **1.1600e-003** | | **0.0276** | **0.0276** | | **0.0276** | **0.0276** | **0.0000** | **99.5769** | **99.5769** | **5.9600e-003** | **0.0000** | **99.7258** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1196 | 0.0777 | 0.8627 | 3.0600e-003 | 0.3537 | 2.2000e-003 | 0.3559 | 0.0941 | 2.0200e-003 | 0.0961 | 0.0000 | 276.9495 | 276.9495 | 5.4600e-003 | 0.0000 | 277.0860 |
| **Total** | **0.1196** | **0.0777** | **0.8627** | **3.0600e-003** | **0.3537** | **2.2000e-003** | **0.3559** | **0.0941** | **2.0200e-003** | **0.0961** | **0.0000** | **276.9495** | **276.9495** | **5.4600e-003** | **0.0000** | **277.0860** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 2.2739 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 0.0116 | 0.0502 | 0.7146 | 1.1600e-003 | | 1.5500e-003 | 1.5500e-003 | | 1.5500e-003 | 1.5500e-003 | 0.0000 | 99.5768 | 99.5768 | 5.9600e-003 | 0.0000 | 99.7257 |
| **Total** | **2.2855** | **0.0502** | **0.7146** | **1.1600e-003** | | **1.5500e-003** | **1.5500e-003** | | **1.5500e-003** | **1.5500e-003** | **0.0000** | **99.5768** | **99.5768** | **5.9600e-003** | **0.0000** | **99.7257** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1196 | 0.0777 | 0.8627 | 3.0600e-003 | 0.3353 | 2.2000e-003 | 0.3375 | 0.0896 | 2.0200e-003 | 0.0916 | 0.0000 | 276.9495 | 276.9495 | 5.4600e-003 | 0.0000 | 277.0860 |
| **Total** | **0.1196** | **0.0777** | **0.8627** | **3.0600e-003** | **0.3353** | **2.2000e-003** | **0.3375** | **0.0896** | **2.0200e-003** | **0.0916** | **0.0000** | **276.9495** | **276.9495** | **5.4600e-003** | **0.0000** | **277.0860** |

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

Increase Diversity

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

Implement NEV Network

Expand Transit Network

Implement Trip Reduction Program

Transit Subsidy

Employee Vanpool/Shuttle

Provide Riade Sharing Program

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.5666 | 2.3475 | 6.5427 | 0.0240 | 2.2000 | 0.0186 | 2.2187 | 0.5903 | 0.0174 | 0.6076 | 0.0000 | 2,197.1066 | 2,197.1066 | 0.0734 | 0.0000 | 2,198.9408 |
| Unmitigated | 0.6647 | 2.9406 | 8.9941 | 0.0352 | 3.3138 | 0.0268 | 3.3406 | 0.8891 | 0.0250 | 0.9141 | 0.0000 | 3,228.2757 | 3,228.2757 | 0.0995 | 0.0000 | 3,230.7631 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| City Park | 0.00 | 0.00 | 0.00 | | |
| Condo/Townhouse High Rise | 600.00 | 538.75 | 428.75 | 2,040,171 | 1,354,477 |
| Other Asphalt Surfaces | 0.00 | 0.00 | 0.00 | | |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Recreational Swimming Pool | 0.00 | 0.00 | 0.00 | | |
| Retirement Community | 2,280.00 | 964.25 | 926.25 | 6,834,252 | 4,537,284 |
| Total | 2,880.00 | 1,503.00 | 1,355.00 | 8,874,423 | 5,891,761 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| City Park | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 66 | 28 | 6 |
| Condo/Townhouse High Rise | 16.80 | 7.50 | 8.90 | 31.00 | 15.00 | 54.00 | 86 | 11 | 3 |
| Other Asphalt Surfaces | 9.50 | 7.30 | 7.30 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Parking Lot | 9.50 | 7.30 | 7.30 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Recreational Swimming Pool | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 52 | 39 | 9 |
| Retirement Community | 16.80 | 7.50 | 8.90 | 31.00 | 15.00 | 54.00 | 86 | 11 | 3 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| City Park | 0.590657 | 0.037535 | 0.185105 | 0.118290 | 0.015611 | 0.005013 | 0.010768 | 0.024764 | 0.001635 | 0.001742 | 0.005351 | 0.002726 | 0.000802 |
| Condo/Townhouse High Rise | 0.590657 | 0.037535 | 0.185105 | 0.118290 | 0.015611 | 0.005013 | 0.010768 | 0.024764 | 0.001635 | 0.001742 | 0.005351 | 0.002726 | 0.000802 |
| Other Asphalt Surfaces | 0.590657 | 0.037535 | 0.185105 | 0.118290 | 0.015611 | 0.005013 | 0.010768 | 0.024764 | 0.001635 | 0.001742 | 0.005351 | 0.002726 | 0.000802 |
| Parking Lot | 0.590657 | 0.037535 | 0.185105 | 0.118290 | 0.015611 | 0.005013 | 0.010768 | 0.024764 | 0.001635 | 0.001742 | 0.005351 | 0.002726 | 0.000802 |
| Recreational Swimming Pool | 0.590657 | 0.037535 | 0.185105 | 0.118290 | 0.015611 | 0.005013 | 0.010768 | 0.024764 | 0.001635 | 0.001742 | 0.005351 | 0.002726 | 0.000802 |
| Retirement Community | 0.590657 | 0.037535 | 0.185105 | 0.118290 | 0.015611 | 0.005013 | 0.010768 | 0.024764 | 0.001635 | 0.001742 | 0.005351 | 0.002726 | 0.000802 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Percent of Electricity Use Generated with Renewable Energy

Install Energy Efficient Appliances

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Electricity Mitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 181.5334 | 181.5334 | 0.0361 | 7.4600e-003 | 184.6580 |
| NaturalGas Mitigated | 0.0204 | 0.1745 | 0.0743 | 1.1100e-003 | | 0.0141 | 0.0141 | | 0.0141 | 0.0141 | 0.0000 | 202.1288 | 202.1288 | 3.8700e-003 | 3.7100e-003 | 203.3300 |
| NaturalGas Unmitigated | 0.0320 | 0.2730 | 0.1162 | 1.7400e-003 | | 0.0221 | 0.0221 | | 0.0221 | 0.0221 | 0.0000 | 316.1478 | 316.1478 | 6.0600e-003 | 5.8000e-003 | 318.0265 |

### 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Condo/Townhouse High Rise | 1.07993e+006 | 5.8200e-003 | 0.0498 | 0.0212 | 3.2000e-004 | | 4.0200e-003 | 4.0200e-003 | | 4.0200e-003 | 4.0200e-003 | 0.0000 | 57.6292 | 57.6292 | 1.1000e-003 | 1.0600e-003 | 57.9717 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Retirement Community | 4.84445e+006 | 0.0261 | 0.2232 | 0.0950 | 1.4200e-003 | | 0.0181 | 0.0181 | | 0.0181 | 0.0181 | 0.0000 | 258.5185 | 258.5185 | 4.9500e-003 | 4.7400e-003 | 260.0548 |
| **Total** | | **0.0319** | **0.2730** | **0.1162** | **1.7400e-003** | | **0.0221** | **0.0221** | | **0.0221** | **0.0221** | **0.0000** | **316.1477** | **316.1477** | **6.0500e-003** | **5.8000e-003** | **318.0265** |

## Mitigated

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Condo/Townhouse High Rise | 716586 | 3.8600e-003 | 0.0330 | 0.0141 | 2.1000e-004 | | 2.6700e-003 | 2.6700e-003 | | 2.6700e-003 | 2.6700e-003 | 0.0000 | 38.2398 | 38.2398 | 7.3000e-004 | 7.0000e-004 | 38.4670 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Retirement Community | 3.07116e+006 | 0.0166 | 0.1415 | 0.0602 | 9.0000e-004 | | 0.0114 | 0.0114 | | 0.0114 | 0.0114 | 0.0000 | 163.8890 | 163.8890 | 3.1400e-003 | 3.0000e-003 | 164.8629 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | | **0.0204** | **0.1745** | **0.0743** | **1.1100e-003** | | **0.0141** | **0.0141** | | **0.0141** | **0.0141** | **0.0000** | **202.1288** | **202.1288** | **3.8700e-003** | **3.7000e-003** | **203.3300** |

## 5.3 Energy by Land Use - Electricity

### Unmitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Condo/Townhouse High Rise | 548501 | 36.3242 | 7.2200e-003 | 1.4900e-003 | 36.9494 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 36400 | 2.4106 | 4.8000e-004 | 1.0000e-004 | 2.4521 |
| Recreational Swimming Pool | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Retirement Community | 2.15628e+006 | 142.7986 | 0.0284 | 5.8700e-003 | 145.2565 |
| **Total** | | **181.5334** | **0.0361** | **7.4600e-003** | **184.6580** |

### Mitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Condo/Townhouse High Rise | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

| | | | | | |
|---|---|---|---|---|---|
| Recreational Swimming Pool | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Retirement Community | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## 6.0 Area Detail

### 6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

Use Low VOC Cleaning Supplies

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 2.3507 | 0.0407 | 3.3909 | 1.5000e-004 | | 0.0184 | 0.0184 | | 0.0184 | 0.0184 | 0.0000 | 5.1001 | 5.1001 | 3.6800e-003 | 0.0000 | 5.1921 |
| Unmitigated | 2.9906 | 0.0721 | 4.4723 | 3.7000e-004 | | 0.0264 | 0.0264 | | 0.0264 | 0.0264 | 0.0000 | 31.2610 | 31.2610 | 7.5000e-003 | 4.4000e-004 | 31.5793 |

### 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.4364 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 2.4168 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 2.4200e-003 | 0.0207 | 8.8100e-003 | 1.3000e-004 | | 1.6700e-003 | 1.6700e-003 | | 1.6700e-003 | 1.6700e-003 | 0.0000 | 23.9691 | 23.9691 | 4.6000e-004 | 4.4000e-004 | 24.1116 |
| Landscaping | 0.1349 | 0.0514 | 4.4635 | 2.4000e-004 | | 0.0247 | 0.0247 | | 0.0247 | 0.0247 | 0.0000 | 7.2918 | 7.2918 | 7.0400e-003 | 0.0000 | 7.4677 |
| **Total** | **2.9906** | **0.0721** | **4.4723** | **3.7000e-004** | | **0.0264** | **0.0264** | | **0.0264** | **0.0264** | **0.0000** | **31.2610** | **31.2610** | **7.5000e-003** | **4.4000e-004** | **31.5793** |

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.0385 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 2.2407 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 0.0715 | 0.0407 | 3.3909 | 1.5000e-004 | | 0.0184 | 0.0184 | | 0.0184 | 0.0184 | 0.0000 | 5.1001 | 5.1001 | 3.6800e-003 | 0.0000 | 5.1921 |
| **Total** | **2.3507** | **0.0407** | **3.3909** | **1.5000e-004** | | **0.0184** | **0.0184** | | **0.0184** | **0.0184** | **0.0000** | **5.1001** | **5.1001** | **3.6800e-003** | **0.0000** | **5.1921** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

Use Reclaimed Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Turf Reduction

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 38.2034 | 1.0278 | 0.0253 | 71.4355 |
| Unmitigated | 47.7542 | 1.2847 | 0.0316 | 89.2944 |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| City Park | 0 / 67.0208 | 15.5345 | 3.0900e-003 | 6.4000e-004 | 15.8019 |
| Condo/Townhouse High Rise | 8.14425 / 5.13442 | 6.6923 | 0.2662 | 6.4400e-003 | 15.2649 |
| Other Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0.118286 / 0.0724981 | 0.0967 | 3.8700e-003 | 9.0000e-005 | 0.2212 |

| | | | | | |
|---|---|---|---|---|---|
| Retirement Community | 30.9482 / 19.5108 | 25.4307 | 1.0116 | 0.0245 | 58.0065 |
| **Total** | | **47.7542** | **1.2847** | **0.0316** | **89.2944** |

**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| City Park | 0 / 53.6167 | 12.4276 | 2.4700e-003 | 5.1000e-004 | 12.6415 |
| Condo/Townhouse High Rise | 6.5154 / 4.10754 | 5.3538 | 0.2130 | 5.1500e-003 | 12.2119 |
| Other Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0.094629 / 0.0579984 | 0.0774 | 3.0900e-003 | 7.0000e-005 | 0.1770 |
| Retirement Community | 24.7585 / 15.6086 | 20.3446 | 0.8092 | 0.0196 | 46.4052 |
| **Total** | | **38.2034** | **1.0278** | **0.0253** | **71.4355** |

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|

| | MT/yr | | | |
|---|---|---|---|---|
| Mitigated | 14.8305 | 0.8765 | 0.0000 | 36.7420 |
| Unmitigated | 59.3221 | 3.5058 | 0.0000 | 146.9679 |

## 8.2 Waste by Land Use

### Unmitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| City Park | 4.84 | 0.9825 | 0.0581 | 0.0000 | 2.4340 |
| Condo/Townhouse High Rise | 57.5 | 11.6720 | 0.6898 | 0.0000 | 28.9168 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 11.4 | 2.3141 | 0.1368 | 0.0000 | 5.7331 |
| Retirement Community | 218.5 | 44.3535 | 2.6212 | 0.0000 | 109.8840 |
| **Total** | | **59.3221** | **3.5058** | **0.0000** | **146.9679** |

### Mitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |

| | | | | | |
|---|---|---|---|---|---|
| City Park | 1.21 | 0.2456 | 0.0145 | 0.0000 | 0.6085 |
| Condo/Townhouse High Rise | 14.375 | 2.9180 | 0.1725 | 0.0000 | 7.2292 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 2.85 | 0.5785 | 0.0342 | 0.0000 | 1.4333 |
| Retirement Community | 54.625 | 11.0884 | 0.6553 | 0.0000 | 27.4710 |
| **Total** | | **14.8305** | **0.8765** | **0.0000** | **36.7420** |

## 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Stationary Equipment

### Fire Pumps and Emergency Generators

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

### Boilers

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

### User Defined Equipment

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|

| Category | MT | | | |
|---|---|---|---|---|
| Unmitigated | -637.8800 | 0.0000 | 0.0000 | -637.8800 |

## 11.1 Vegetation Land Change

### Vegetation Type

| | Initial/Final | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| | Acres | MT | | | |
| Grassland | 204 / 56 | -637.8800 | 0.0000 | 0.0000 | -637.8800 |
| **Total** | | **-637.8800** | **0.0000** | **0.0000** | **-637.8800** |

# Vineyards at Deer Creek - Phase 1

## Contra Costa County, Mitigation Report

## Construction Mitigation Summary

| Phase | ROG | NOx | CO | SO2 | Exhaust PM10 | Exhaust PM2.5 | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Reduction | | | | | | | | | | | | |
| Architectural Coating | 0.03 | 0.78 | -0.00 | 0.00 | 0.88 | 0.89 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Building Construction | 0.15 | 0.25 | -0.02 | 0.00 | 0.74 | 0.73 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Grading | 0.80 | 0.93 | -0.04 | 0.00 | 0.95 | 0.94 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Intrastructure Improvements | 0.78 | 0.91 | -0.08 | 0.00 | 0.95 | 0.95 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Paving | 0.33 | 0.90 | -0.18 | 0.00 | 0.94 | 0.94 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Site Preparation | 0.87 | 0.95 | 0.01 | 0.00 | 0.97 | 0.97 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## OFFROAD Equipment Mitigation

| Equipment Type | Fuel Type | Tier | Number Mitigated | Total Number of Equipment | DPF | Oxidation Catalyst |
|---|---|---|---|---|---|---|
| Air Compressors | Diesel | Tier 4 Final | 3 | 3 | No Change | 0.00 |
| Concrete/Industrial Saws | Diesel | No Change | 0 | 1 | No Change | 0.00 |
| Cranes | Diesel | Tier 4 Final | 1 | 1 | No Change | 0.00 |
| Excavators | Diesel | Tier 4 Final | 8 | 8 | No Change | 0.00 |
| Forklifts | Diesel | Tier 4 Final | 3 | 3 | No Change | 0.00 |
| Generator Sets | Diesel | Tier 4 Final | 1 | 1 | No Change | 0.00 |
| Graders | Diesel | Tier 4 Final | 1 | 1 | No Change | 0.00 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Pavers | Diesel | Tier 4 Final | 2 | 2 | No Change | 0.00 |
| Paving Equipment | Diesel | Tier 4 Final | 2 | 2 | No Change | 0.00 |
| Rollers | Diesel | Tier 4 Final | 2 | 2 | No Change | 0.00 |
| Rubber Tired Dozers | Diesel | Tier 4 Final | 6 | 6 | No Change | 0.00 |
| Rubber Tired Loaders | Diesel | Tier 4 Final | 3 | 3 | No Change | 0.00 |
| Scrapers | Diesel | Tier 4 Final | 4 | 4 | No Change | 0.00 |
| Tractors/Loaders/Backhoes | Diesel | Tier 4 Final | 12 | 12 | No Change | 0.00 |
| Welders | Diesel | No Change | 0 | 1 | No Change | 0.00 |

| Equipment Type | ROG | NOx | CO | SO2 | Exhaust PM10 | Exhaust PM2.5 | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Unmitigated tons/yr | | | | | | Unmitigated mt/yr | | | | | |
| Air Compressors | 1.48070E-001 | 1.01311E+000 | 1.35651E+000 | 2.22000E-003 | 5.69100E-002 | 5.69100E-002 | 0.00000E+000 | 1.91111E+002 | 1.91111E+002 | 1.19200E-002 | 0.00000E+000 | 1.91409E+002 |
| Cranes | 9.19700E-002 | 1.02242E+000 | 4.69900E-001 | 1.45000E-003 | 4.24500E-002 | 3.90600E-002 | 0.00000E+000 | 1.27086E+002 | 1.27086E+002 | 4.11000E-002 | 0.00000E+000 | 1.28114E+002 |
| Excavators | 4.79000E-002 | 4.50060E-001 | 6.83810E-001 | 1.08000E-003 | 2.18300E-002 | 2.00800E-002 | 0.00000E+000 | 9.48372E+001 | 9.48372E+001 | 3.06700E-002 | 0.00000E+000 | 9.56040E+001 |
| Forklifts | 9.45800E-002 | 8.79420E-001 | 9.89270E-001 | 1.31000E-003 | 5.70300E-002 | 5.24700E-002 | 0.00000E+000 | 1.15423E+002 | 1.15423E+002 | 3.73300E-002 | 0.00000E+000 | 1.16357E+002 |
| Generator Sets | 9.21300E-002 | 8.17600E-001 | 1.05254E+000 | 1.88000E-003 | 4.02200E-002 | 4.02200E-002 | 0.00000E+000 | 1.61932E+002 | 1.61932E+002 | 7.49000E-003 | 0.00000E+000 | 1.62119E+002 |
| Graders | 2.49100E-002 | 3.25850E-001 | 9.72000E-002 | 3.60000E-004 | 1.03200E-002 | 9.50000E-003 | 0.00000E+000 | 3.20169E+001 | 3.20169E+001 | 1.03500E-002 | 0.00000E+000 | 3.22758E+001 |
| Pavers | 5.42000E-003 | 5.70900E-002 | 6.39100E-002 | 1.00000E-004 | 2.76000E-003 | 2.54000E-003 | 0.00000E+000 | 9.08213E+000 | 9.08213E+000 | 2.94000E-003 | 0.00000E+000 | 9.15557E+000 |
| Paving Equipment | 4.22000E-003 | 4.26900E-002 | 5.59100E-002 | 9.00000E-005 | 2.11000E-003 | 1.94000E-003 | 0.00000E+000 | 7.87257E+000 | 7.87257E+000 | 2.55000E-003 | 0.00000E+000 | 7.93623E+000 |
| Rollers | 4.17000E-003 | 4.23300E-002 | 4.13700E-002 | 6.00000E-005 | 2.59000E-003 | 2.38000E-003 | 0.00000E+000 | 5.07112E+000 | 5.07112E+000 | 1.64000E-003 | 0.00000E+000 | 5.11212E+000 |
| Rubber Tired Dozers | 7.32500E-002 | 7.67990E-001 | 2.82640E-001 | 6.00000E-004 | 3.72700E-002 | 3.42900E-002 | 0.00000E+000 | 5.25393E+001 | 5.25393E+001 | 1.69900E-002 | 0.00000E+000 | 5.29641E+001 |
| Rubber Tired Loaders | 2.64300E-002 | 2.23730E-001 | 2.06570E-001 | 2.60000E-004 | 1.67900E-002 | 1.54400E-002 | 0.00000E+000 | 2.24599E+001 | 2.24599E+001 | 7.26000E-003 | 0.00000E+000 | 2.26415E+001 |
| Scrapers | 2.04480E-001 | 2.35461E+000 | 1.54103E+000 | 3.33000E-003 | 9.16000E-002 | 8.42800E-002 | 0.00000E+000 | 2.92967E+002 | 2.92967E+002 | 9.47500E-002 | 0.00000E+000 | 2.95336E+002 |
| Tractors/Loaders/Backhoes | 1.63770E-001 | 1.66188E+000 | 2.19996E+000 | 3.05000E-003 | 9.00000E-002 | 8.28000E-002 | 0.00000E+000 | 2.68117E+002 | 2.68117E+002 | 8.67100E-002 | 0.00000E+000 | 2.70285E+002 |
| Welders | 7.70800E-002 | 4.14830E-001 | 4.84140E-001 | 7.30000E-004 | 1.74400E-002 | 1.74400E-002 | 0.00000E+000 | 5.39252E+001 | 5.39252E+001 | 6.25000E-003 | 0.00000E+000 | 5.40814E+001 |

| Equipment Type | ROG | NOx | CO | SO2 | Exhaust PM10 | Exhaust PM2.5 | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mitigated tons/yr | | | | | | Mitigated mt/yr | | | | | |
| Air Compressors | 2.22400E-002 | 9.63800E-002 | 1.37156E+000 | 2.22000E-003 | 2.97000E-003 | 2.97000E-003 | 0.00000E+000 | 1.91111E+002 | 1.91111E+002 | 1.19200E-002 | 0.00000E+000 | 1.91409E+002 |
| Cranes | 1.77700E-002 | 7.70100E-002 | 6.51610E-001 | 1.45000E-003 | 2.37000E-003 | 2.37000E-003 | 0.00000E+000 | 1.27086E+002 | 1.27086E+002 | 4.11000E-002 | 0.00000E+000 | 1.28113E+002 |
| Excavators | 1.32800E-002 | 5.75400E-002 | 8.18870E-001 | 1.08000E-003 | 1.77000E-003 | 1.77000E-003 | 0.00000E+000 | 9.48371E+001 | 9.48371E+001 | 3.06700E-002 | 0.00000E+000 | 9.56039E+001 |
| Forklifts | 1.61900E-002 | 7.01600E-002 | 9.98370E-001 | 1.31000E-003 | 2.16000E-003 | 2.16000E-003 | 0.00000E+000 | 1.15423E+002 | 1.15423E+002 | 3.73300E-002 | 0.00000E+000 | 1.16357E+002 |
| Generator Sets | 1.88500E-002 | 8.16600E-002 | 1.16215E+000 | 1.88000E-003 | 2.51000E-003 | 2.51000E-003 | 0.00000E+000 | 1.61932E+002 | 1.61932E+002 | 7.49000E-003 | 0.00000E+000 | 1.62119E+002 |
| Graders | 4.46000E-003 | 1.93400E-002 | 1.63620E-001 | 3.60000E-004 | 5.90000E-004 | 5.90000E-004 | 0.00000E+000 | 3.20169E+001 | 3.20169E+001 | 1.03500E-002 | 0.00000E+000 | 3.22758E+001 |
| Pavers | 1.27000E-003 | 5.51000E-003 | 7.83900E-002 | 1.00000E-004 | 1.70000E-004 | 1.70000E-004 | 0.00000E+000 | 9.08212E+000 | 9.08212E+000 | 2.94000E-003 | 0.00000E+000 | 9.15556E+000 |
| Paving Equipment | 1.11000E-003 | 4.79000E-003 | 6.82200E-002 | 9.00000E-005 | 1.50000E-004 | 1.50000E-004 | 0.00000E+000 | 7.87256E+000 | 7.87256E+000 | 2.55000E-003 | 0.00000E+000 | 7.93622E+000 |
| Rollers | 7.10000E-004 | 3.07000E-003 | 4.36400E-002 | 6.00000E-005 | 9.00000E-005 | 9.00000E-005 | 0.00000E+000 | 5.07112E+000 | 5.07112E+000 | 1.64000E-003 | 0.00000E+000 | 5.11212E+000 |
| Rubber Tired Dozers | 7.32000E-003 | 3.17100E-002 | 2.68350E-001 | 6.00000E-004 | 9.80000E-004 | 9.80000E-004 | 0.00000E+000 | 5.25392E+001 | 5.25392E+001 | 1.69900E-002 | 0.00000E+000 | 5.29640E+001 |
| Rubber Tired Loaders | 3.18000E-003 | 1.38000E-002 | 1.96400E-001 | 2.60000E-004 | 4.20000E-004 | 4.20000E-004 | 0.00000E+000 | 2.24598E+001 | 2.24598E+001 | 7.26000E-003 | 0.00000E+000 | 2.26414E+001 |
| Scrapers | 4.10100E-002 | 1.77720E-001 | 1.50375E+000 | 3.33000E-003 | 5.47000E-003 | 5.47000E-003 | 0.00000E+000 | 2.92966E+002 | 2.92966E+002 | 9.47500E-002 | 0.00000E+000 | 2.95335E+002 |
| Tractors/Loaders/Backhoes | 3.72600E-002 | 1.61460E-001 | 2.29771E+000 | 3.05000E-003 | 4.97000E-003 | 4.97000E-003 | 0.00000E+000 | 2.68117E+002 | 2.68117E+002 | 8.67100E-002 | 0.00000E+000 | 2.70284E+002 |
| Welders | 7.70800E-002 | 4.14830E-001 | 4.84140E-001 | 7.30000E-004 | 1.74400E-002 | 1.74400E-002 | 0.00000E+000 | 5.39252E+001 | 5.39252E+001 | 6.25000E-003 | 0.00000E+000 | 5.40813E+001 |

| Equipment Type | ROG | NOx | CO | SO2 | Exhaust PM10 | Exhaust PM2.5 | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Percent Reduction | | | | | | | | | | | |
| Air Compressors | 8.49801E-001 | 9.04867E-001 | -1.10946E-002 | 0.00000E+000 | 9.47812E-001 | 9.47812E-001 | 0.00000E+000 | 1.15116E-006 | 1.15116E-006 | 0.00000E+000 | 0.00000E+000 | 1.20162E-006 |
| Cranes | 8.06785E-001 | 9.24679E-001 | -3.86699E-001 | 0.00000E+000 | 9.44170E-001 | 9.39324E-001 | 0.00000E+000 | 1.25899E-006 | 1.25899E-006 | 0.00000E+000 | 0.00000E+000 | 1.17084E-006 |
| Excavators | 7.22756E-001 | 8.72150E-001 | -1.97511E-001 | 0.00000E+000 | 9.18919E-001 | 9.11853E-001 | 0.00000E+000 | 1.15988E-006 | 1.15988E-006 | 0.00000E+000 | 0.00000E+000 | 1.15058E-006 |
| Forklifts | 8.28822E-001 | 9.20220E-001 | -9.19870E-003 | 0.00000E+000 | 9.62125E-001 | 9.58834E-001 | 0.00000E+000 | 1.21293E-006 | 1.21293E-006 | 0.00000E+000 | 0.00000E+000 | 1.20320E-006 |
| Generator Sets | 7.95398E-001 | 9.00122E-001 | -1.04139E-001 | 0.00000E+000 | 9.37593E-001 | 9.37593E-001 | 0.00000E+000 | 1.23509E-006 | 1.23509E-006 | 0.00000E+000 | 0.00000E+000 | 1.17198E-006 |
| Graders | 8.20955E-001 | 9.40648E-001 | -6.83333E-001 | 0.00000E+000 | 9.42829E-001 | 9.37895E-001 | 0.00000E+000 | 1.24934E-006 | 1.24934E-006 | 0.00000E+000 | 0.00000E+000 | 1.23932E-006 |
| Pavers | 7.65683E-001 | 9.03486E-001 | -2.26569E-001 | 0.00000E+000 | 9.38406E-001 | 9.33071E-001 | 0.00000E+000 | 1.10106E-006 | 1.10106E-006 | 0.00000E+000 | 0.00000E+000 | 1.09223E-006 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Paving Equipment | 7.36967E-001 | 8.87796E-001 | -2.20175E-001 | 0.00000E+000 | 9.28910E-001 | 9.22680E-001 | 0.00000E+000 | 1.27023E-006 | 1.27023E-006 | 0.00000E+000 | 0.00000E+000 | 1.26004E-006 |
| Rollers | 8.29736E-001 | 9.27475E-001 | -5.48707E-002 | 0.00000E+000 | 9.65251E-001 | 9.62185E-001 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 |
| Rubber Tired Dozers | 9.00068E-001 | 9.58710E-001 | 5.05590E-002 | 0.00000E+000 | 9.73705E-001 | 9.71420E-001 | 0.00000E+000 | 1.14200E-006 | 1.14200E-006 | 0.00000E+000 | 0.00000E+000 | 1.32165E-006 |
| Rubber Tired Loaders | 8.79682E-001 | 9.38319E-001 | 4.92327E-002 | 0.00000E+000 | 9.74985E-001 | 9.72798E-001 | 0.00000E+000 | 8.90478E-007 | 8.90478E-007 | 0.00000E+000 | 0.00000E+000 | 8.83335E-007 |
| Scrapers | 7.99442E-001 | 9.24523E-001 | 2.41916E-002 | 0.00000E+000 | 9.40284E-001 | 9.35097E-001 | 0.00000E+000 | 1.16054E-006 | 1.16054E-006 | 0.00000E+000 | 0.00000E+000 | 1.18509E-006 |
| Tractors/Loaders/Backhoes | 7.72486E-001 | 9.02845E-001 | -4.44326E-002 | 0.00000E+000 | 9.44778E-001 | 9.39976E-001 | 0.00000E+000 | 1.19351E-006 | 1.19351E-006 | 0.00000E+000 | 0.00000E+000 | 1.18394E-006 |
| Welders | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 1.11265E-006 | 1.11265E-006 | 0.00000E+000 | 0.00000E+000 | 1.29435E-006 |

## Fugitive Dust Mitigation

| Yes/No | Mitigation Measure | Mitigation Input | | Mitigation Input | | Mitigation Input | |
|---|---|---|---|---|---|---|---|
| No | Soil Stabilizer for unpaved Roads | PM10 Reduction | 0.00 | PM2.5 Reduction | 0.00 | | |
| Yes | Replace Ground Cover of Area Disturbed | PM10 Reduction | 5.00 | PM2.5 Reduction | 5.00 | | |
| Yes | Water Exposed Area | PM10 Reduction | 55.00 | PM2.5 Reduction | 55.00 | Frequency (per day) | 2.00 |
| Yes | Unpaved Road Mitigation | Moisture Content % | 12.00 | Vehicle Speed (mph) | 15.00 | | |
| Yes | Clean Paved Road | % PM Reduction | 6.00 | | | | |

| | | Unmitigated | | Mitigated | | Percent Reduction | |
|---|---|---|---|---|---|---|---|
| Phase | Source | PM10 | PM2.5 | PM10 | PM2.5 | PM10 | PM2.5 |
| Architectural Coating | Fugitive Dust | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Architectural Coating | Roads | 0.68 | 0.18 | 0.64 | 0.17 | 0.05 | 0.05 |
| Building Construction | Fugitive Dust | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Building Construction | Roads | 4.58 | 1.23 | 4.35 | 1.18 | 0.05 | 0.05 |
| Grading | Fugitive Dust | 0.59 | 0.21 | 0.25 | 0.09 | 0.57 | 0.57 |
| Grading | Roads | 0.01 | 0.00 | 0.01 | 0.00 | 0.05 | 0.05 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Intrastructure Improvements | Fugitive Dust | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Intrastructure Improvements | Roads | 0.01 | 0.00 | 0.01 | 0.00 | 0.05 | 0.05 |
| Paving | Fugitive Dust | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Paving | Roads | 0.00 | 0.00 | 0.00 | 0.00 | 0.05 | 0.06 |
| Site Preparation | Fugitive Dust | 0.09 | 0.05 | 0.04 | 0.02 | 0.57 | 0.57 |
| Site Preparation | Roads | 0.00 | 0.00 | 0.00 | 0.00 | 0.04 | 0.05 |

## Operational Percent Reduction Summary

| Category | ROG | NOx | CO | SO2 | Exhaust PM10 | Exhaust PM2.5 | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Reduction | | | | | | | | | | | | |
| Architectural Coating | 91.17 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Consumer Products | 7.29 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Electricity | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Hearth | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 0.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Landscaping | 47.02 | 20.82 | 24.03 | 37.50 | 25.52 | 25.52 | 0.00 | 30.06 | 30.06 | 47.73 | 0.00 | 30.47 |
| Mobile | 14.77 | 20.17 | 27.26 | 31.98 | 30.47 | 30.52 | 0.00 | 31.94 | 31.94 | 26.25 | 0.00 | 31.94 |
| Natural Gas | 36.07 | 36.06 | 36.07 | 36.21 | 36.07 | 36.07 | 0.00 | 36.07 | 36.07 | 36.03 | 36.21 | 36.07 |
| Water Indoor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.02 | 20.00 |
| Water Outdoor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## Operational Mobile Mitigation

Project Setting:

| Mitigation | Category | Measure | % Reduction | Input Value 1 | Input Value 2 | Input Value 3 |
|---|---|---|---|---|---|---|
| No | Land Use | Increase Density | 0.00 | 0.00 | 0.00 | |
| Yes | Land Use | Increase Diversity | 0.16 | 0.42 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| No | Land Use | Improve Walkability Design | 0.00 | 0.00 | | |
| No | Land Use | Improve Destination Accessibility | 0.00 | 0.00 | | |
| Yes | Land Use | Increase Transit Accessibility | 0.06 | 1.00 | | |
| No | Land Use | Integrate Below Market Rate Housing | 0.00 | 0.00 | | |
| | Land Use | Land Use SubTotal | 0.21 | | | |
| Yes | Neighborhood Enhancements | Improve Pedestrian Network | 2.00 | Project Site and Connecting Off-Site | | |
| Yes | Neighborhood Enhancements | Provide Traffic Calming Measures | 0.50 | 75.00 | 50.00 | |
| Yes | Neighborhood Enhancements | Implement NEV Network | 0.01 | | | |
| | Neighborhood Enhancements | Neighborhood Enhancements Subtotal | 0.15 | | | |
| Yes | Parking Policy Pricing | Limit Parking Supply | 0.00 | 0.00 | | |
| No | Parking Policy Pricing | Unbundle Parking Costs | 0.00 | 0.00 | | |
| No | Parking Policy Pricing | On-street Market Pricing | 0.00 | 0.00 | | |
| | Parking Policy Pricing | Parking Policy Pricing Subtotal | 0.00 | | | |
| No | Transit Improvements | Provide BRT System | 0.00 | 0.00 | | |
| Yes | Transit Improvements | Expand Transit Network | 0.00 | 2.00 | | |
| No | Transit Improvements | Increase Transit Frequency | 0.00 | | 0.00 | |
| | Transit Improvements | Transit Improvements Subtotal | 0.00 | | | |
| | | Land Use and Site Enhancement Subtotal | 0.33 | | | |
| Yes | Commute | Implement Trip Reduction Program | | 100.00 | Required | |
| Yes | Commute | Transit Subsidy | | 100.00 | $1.49 | |
| No | Commute | Implement Employee Parking "Cash Out" | | 0.00 | | |
| No | Commute | Workplace Parking Charge | | 0.00 | | |
| No | Commute | Encourage Telecommuting and Alternative Work Schedules | 0.00 | | | |
| No | Commute | Market Commute Trip Reduction Option | 0.00 | 0.00 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Yes | Commute | Employee Vanpool/Shuttle | 0.01 | 100.00 | 2.00 | |
| Yes | Commute | Provide Ride Sharing Program | | 100.00 | | |
| | Commute | Commute Subtotal | 0.01 | | | |
| No | School Trip | Implement School Bus Program | 0.00 | 0.00 | | |
| | | Total VMT Reduction | 0.34 | | | |

**Area Mitigation**

| Measure Implemented | Mitigation Measure | Input Value |
|---|---|---|
| No | Only Natural Gas Hearth | |
| Yes | No Hearth | |
| Yes | Use Low VOC Cleaning Supplies | |
| Yes | Use Low VOC Paint (Residential Interior) | 10.00 |
| Yes | Use Low VOC Paint (Residential Exterior) | 10.00 |
| Yes | Use Low VOC Paint (Non-residential Interior) | 10.00 |
| Yes | Use Low VOC Paint (Non-residential Exterior) | 10.00 |
| Yes | Use Low VOC Paint (Parking) | 10.00 |
| Yes | % Electric Lawnmower | 100.00 |
| Yes | % Electric Leafblower | 100.00 |
| Yes | % Electric Chainsaw | 100.00 |

**Energy Mitigation Measures**

| Measure Implemented | Mitigation Measure | Input Value 1 | Input Value 2 |
|---|---|---|---|
| Yes | Exceed Title 24 | 53.00 | |
| Yes | Install High Efficiency Lighting | 75.00 | |
| Yes | On-site Renewable | 0.00 | 100.00 |

| Appliance Type | Land Use Subtype | % Improvement |
|---|---|---|
| ClothWasher | Condo/Townhouse High Ri... | 30.00 |
| ClothWasher | Retirement Community | 30.00 |
| DishWasher | Condo/Townhouse High Ri... | 15.00 |
| DishWasher | Retirement Community | 15.00 |
| Fan | Condo/Townhouse High Ri... | 50.00 |
| Fan | Retirement Community | 50.00 |
| Refrigerator | Condo/Townhouse High Ri... | 15.00 |
| Refrigerator | Retirement Community | 15.00 |

**Water Mitigation Measures**

| Measure Implemented | Mitigation Measure | Input Value 1 | Input Value 2 |
|---|---|---|---|
| No | Apply Water Conservation on Strategy | 0.00 | 0.00 |
| Yes | Use Reclaimed Water | 0.00 | 50.00 |
| No | Use Grey Water | 0.00 | |
| Yes | Install low-flow bathroom faucet | 32.00 | |
| Yes | Install low-flow Kitchen faucet | 18.00 | |
| Yes | Install low-flow Toilet | 20.00 | |
| Yes | Install low-flow Shower | 20.00 | |
| Yes | Turf Reduction | 75.00 | |
| No | Use Water Efficient Irrigation Systems | 6.10 | |
| No | Water Efficient Landscape | 0.00 | 0.00 |

**Solid Waste Mitigation**

| Mitigation Measures | Input Value |
|---|---|

| | |
|---|---|
| Institute Recycling and Composting Services<br>Percent Reduction in Waste Disposed | 75.00 |

# Vineyards at Deer Creek - Phase 2

**Contra Costa County, Winter**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Parking Lot | 260.00 | Space | 2.34 | 104,000.00 | 0 |
| City Park | 56.25 | Acre | 56.25 | 2,450,250.00 | 0 |
| Recreational Swimming Pool | 2.00 | 1000sqft | 0.05 | 2,000.00 | 0 |
| Condo/Townhouse High Rise | 125.00 | Dwelling Unit | 1.95 | 125,000.00 | 358 |
| Retirement Community | 475.00 | Dwelling Unit | 95.00 | 475,000.00 | 1359 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 58 |
| **Climate Zone** | 4 | | | **Operational Year** | 2026 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 146 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - Per PG&E 2018 CRSR

Land Use - Parking: assumed 2 spaces for 125 DUs, plus 10 extra spaces for recreation uses
City Park is open space/ agricultural uses

Construction Phase - Per Construction Questionnaire

Off-road Equipment - Estimated equipment use

Off-road Equipment -

Off-road Equipment - No demolition

Off-road Equipment - Estimated equipment use

Off-road Equipment -

Off-road Equipment - Estimated equipment use

Off-road Equipment -

Off-road Equipment -

Trips and VMT - vendor trips would be lower since city park was used to model the proposed natural open space, informal parkland, low impact trails, etc.

Demolition - No demolition

Grading - Balanced between all phases

Vehicle Trips - Per Fehr and Peers TIA 2019

Woodstoves - Per BAAQMD Regulation 6, Rule 3

Energy Use -

Land Use Change -

Construction Off-road Equipment Mitigation - Per BAAQMD basic and advanced control measure

Mobile Land Use Mitigation - Green building design elements include narrower roadways

Mobile Commute Mitigation -

Area Mitigation - No hearth, low VOC cleaning supplies, low VOC paint, and electric landscape equipment

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblAreaMitigation | UseLowVOCPaintNonresidentialExteriorValue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintNonresidentialInteriorValue | 100 | 10 |
| tblAreaMitigation | UseLowVOCPaintParkingCheck | False | True |
| tblAreaMitigation | UseLowVOCPaintParkingValue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintResidentialExteriorValue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintResidentialInteriorValue | 100 | 10 |
| tblConstDustMitigation | CleanPavedRoadPercentReduction | 0 | 6 |
| tblConstDustMitigation | WaterUnpavedRoadMoistureContent | 0 | 12 |
| tblConstDustMitigation | WaterUnpavedRoadVehicleSpeed | 0 | 15 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |

| | | | |
|---|---|---|---|
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 8.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 6.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 4.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 12.00 |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstructionPhase | NumDays | 220.00 | 499.00 |
| tblConstructionPhase | NumDays | 3,100.00 | 577.00 |
| tblConstructionPhase | NumDays | 200.00 | 0.00 |
| tblConstructionPhase | NumDays | 310.00 | 110.00 |

| | | | |
|---|---|---|---|
| tblConstructionPhase | NumDays | 220.00 | 22.00 |
| tblConstructionPhase | NumDays | 120.00 | 10.00 |
| tblFireplaces | NumberGas | 18.75 | 40.00 |
| tblFireplaces | NumberGas | 71.25 | 152.00 |
| tblFireplaces | NumberWood | 21.25 | 0.00 |
| tblFireplaces | NumberWood | 80.75 | 0.00 |
| tblOffRoadEquipment | HorsePower | 203.00 | 247.00 |
| tblOffRoadEquipment | LoadFactor | 0.36 | 0.40 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 4.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 3.00 |
| tblProjectCharacteristics | CO2IntensityFactor | 641.35 | 146 |
| tblTripsAndVMT | VendorTripNumber | 483.00 | 283.00 |
| tblVehicleTrips | HO_TL | 5.70 | 8.90 |
| tblVehicleTrips | HO_TL | 5.70 | 8.90 |
| tblVehicleTrips | HS_TL | 4.80 | 7.50 |
| tblVehicleTrips | HS_TL | 4.80 | 7.50 |
| tblVehicleTrips | HW_TL | 10.80 | 16.80 |
| tblVehicleTrips | HW_TL | 10.80 | 16.80 |
| tblVehicleTrips | ST_TR | 22.75 | 0.00 |
| tblVehicleTrips | ST_TR | 9.10 | 0.00 |
| tblVehicleTrips | SU_TR | 16.74 | 0.00 |
| tblVehicleTrips | SU_TR | 13.60 | 0.00 |
| tblVehicleTrips | WD_TR | 1.89 | 0.00 |
| tblVehicleTrips | WD_TR | 4.18 | 4.80 |
| tblVehicleTrips | WD_TR | 33.82 | 0.00 |
| tblVehicleTrips | WD_TR | 2.40 | 4.80 |
| tblWoodstoves | NumberCatalytic | 2.50 | 0.00 |
| tblWoodstoves | NumberCatalytic | 9.50 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 2.50 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 9.50 | 0.00 |

## 2.0 Emissions Summary

### 2.1 Overall Construction (Maximum Daily Emission)

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2024 | 7.6048 | 47.8117 | 64.9084 | 0.2207 | 18.2141 | 1.9450 | 19.4443 | 9.9699 | 1.7894 | 11.1017 | 0.0000 | 22,235.6747 | 22,235.6747 | 2.8970 | 0.0000 | 22,280.6381 |
| 2025 | 24.3100 | 39.1565 | 58.1340 | 0.2201 | 16.7598 | 0.7926 | 17.5524 | 4.4888 | 0.7533 | 5.2422 | 0.0000 | 22,198.3359 | 22,198.3359 | 1.1326 | 0.0000 | 22,226.6501 |
| 2026 | 24.0461 | 38.6260 | 55.8218 | 0.2154 | 16.7599 | 0.7894 | 17.5493 | 4.4888 | 0.7504 | 5.2392 | 0.0000 | 21,731.1405 | 21,731.1405 | 1.1069 | 0.0000 | 21,758.8128 |
| **Maximum** | **24.3100** | **47.8117** | **64.9084** | **0.2207** | **18.2141** | **1.9450** | **19.4443** | **9.9699** | **1.7894** | **11.1017** | **0.0000** | **22,235.6747** | **22,235.6747** | **2.8970** | **0.0000** | **22,280.6381** |

**Mitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2024 | 5.9454 | 27.1603 | 69.0386 | 0.2207 | 13.6769 | 0.2213 | 13.8982 | 4.2827 | 0.2144 | 4.3456 | 0.0000 | 22,235.6747 | 22,235.6747 | 2.8970 | 0.0000 | 22,280.6381 |
| 2025 | 23.0229 | 26.2093 | 59.7342 | 0.2201 | 15.9038 | 0.2011 | 16.1050 | 4.2787 | 0.1932 | 4.4719 | 0.0000 | 22,198.3359 | 22,198.3359 | 1.1326 | 0.0000 | 22,226.6501 |
| 2026 | 22.7591 | 25.6789 | 57.4220 | 0.2154 | 15.9039 | 0.1980 | 16.1019 | 4.2787 | 0.1903 | 4.4690 | 0.0000 | 21,731.1404 | 21,731.1404 | 1.1069 | 0.0000 | 21,758.8128 |
| **Maximum** | **23.0229** | **27.1603** | **69.0386** | **0.2207** | **15.9039** | **0.2213** | **16.1050** | **4.2827** | **0.2144** | **4.4719** | **0.0000** | **22,235.6747** | **22,235.6747** | **2.8970** | **0.0000** | **22,280.6381** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **7.57** | **37.06** | **-4.10** | **0.00** | **12.08** | **82.41** | **15.48** | **32.23** | **81.85** | **38.44** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 17.3247 | 4.2857 | 51.0674 | 0.0263 | | 0.5749 | 0.5749 | | 0.5749 | 0.5749 | 0.0000 | 4,832.7304 | 4,832.7304 | 0.1765 | 0.0870 | 4,863.0572 |
| Energy | 0.1750 | 1.4958 | 0.6365 | 9.5500e-003 | | 0.1209 | 0.1209 | | 0.1209 | 0.1209 | | 1,909.5520 | 1,909.5520 | 0.0366 | 0.0350 | 1,920.8995 |
| Mobile | 3.5027 | 16.7550 | 49.2376 | 0.2022 | 22.0090 | 0.1537 | 22.1627 | 5.8864 | 0.1430 | 6.0294 | | 20,448.4390 | 20,448.4390 | 0.6151 | | 20,463.8168 |
| **Total** | **21.0025** | **22.5366** | **100.9415** | **0.2380** | **22.0090** | **0.8496** | **22.8586** | **5.8864** | **0.8389** | **6.7253** | **0.0000** | **27,190.7214** | **27,190.7214** | **0.8282** | **0.1220** | **27,247.7735** |

### Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 13.0990 | 0.4523 | 37.6026 | 1.7000e-003 | | 0.2047 | 0.2047 | | 0.2047 | 0.2047 | 0.0000 | 62.4075 | 62.4075 | 0.0448 | 0.0000 | 63.5268 |
| Energy | 0.1119 | 0.9564 | 0.4070 | 6.1000e-003 | | 0.0773 | 0.0773 | | 0.0773 | 0.0773 | | 1,220.8706 | 1,220.8706 | 0.0234 | 0.0224 | 1,228.1256 |
| Mobile | 3.2215 | 15.0986 | 42.4672 | 0.1688 | 18.1932 | 0.1297 | 18.3229 | 4.8659 | 0.1207 | 4.9865 | | 17,080.2310 | 17,080.2310 | 0.5332 | | 17,093.5602 |
| **Total** | **16.4324** | **16.5073** | **80.4768** | **0.1766** | **18.1932** | **0.4117** | **18.6049** | **4.8659** | **0.4027** | **5.2685** | **0.0000** | **18,363.5090** | **18,363.5090** | **0.6013** | **0.0224** | **18,385.2126** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **21.76** | **26.75** | **20.27** | **25.79** | **17.34** | **51.54** | **18.61** | **17.34** | **52.00** | **21.66** | **0.00** | **32.46** | **32.46** | **27.39** | **81.65** | **32.53** |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Demolition | Demolition | 1/1/2024 | 12/31/2023 | 5 | 0 | |
| 2 | Site Preparation | Site Preparation | 1/1/2024 | 1/12/2024 | 5 | 10 | |
| 3 | Grading | Grading | 1/13/2024 | 6/14/2024 | 5 | 110 | |
| 4 | Infrastructure Improvements | Trenching | 6/15/2024 | 9/16/2024 | 5 | 66 | |
| 5 | Paving | Paving | 9/17/2024 | 10/16/2024 | 5 | 22 | |
| 6 | Building Construction | Building Construction | 10/16/2024 | 12/31/2026 | 5 | 577 | |
| 7 | Architectural Coating | Architectural Coating | 2/1/2025 | 12/31/2026 | 5 | 499 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 495**

**Acres of Paving: 2.34**

**Residential Indoor: 1,215,000; Residential Outdoor: 405,000; Non-Residential Indoor: 4,500; Non-Residential Outdoor: 1,500; Striped**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Demolition | Excavators | 3 | 8.00 | 158 | 0.38 |
| Demolition | Rubber Tired Dozers | 2 | 8.00 | 247 | 0.40 |
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 4 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |

| | | | | | |
|---|---|---|---|---|---|
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 3 | 6.00 | 78 | 0.48 |
| Infrastructure Improvements | Excavators | 3 | 8.00 | 158 | 0.38 |
| Infrastructure Improvements | Rubber Tired Loaders | 3 | 8.00 | 247 | 0.40 |
| Infrastructure Improvements | Tractors/Loaders/Backhoes | 3 | 8.00 | 97 | 0.37 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Demolition | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 10 | 25.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 1,506.00 | 283.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 3 | 301.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Infrastructure Improvements | 9 | 23.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

## 3.3 Site Preparation - 2024

## Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 18.0663 | 0.0000 | 18.0663 | 9.9307 | 0.0000 | 9.9307 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.6609 | 27.1760 | 18.3356 | 0.0381 | | 1.2294 | 1.2294 | | 1.1310 | 1.1310 | | 3,688.0100 | 3,688.0100 | 1.1928 | | 3,717.8294 |
| **Total** | **2.6609** | **27.1760** | **18.3356** | **0.0381** | **18.0663** | **1.2294** | **19.2956** | **9.9307** | **1.1310** | **11.0617** | | **3,688.0100** | **3,688.0100** | **1.1928** | | **3,717.8294** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0499 | 0.0312 | 0.3283 | 1.1700e-003 | 0.1479 | 8.7000e-004 | 0.1487 | 0.0392 | 8.0000e-004 | 0.0400 | | 116.8294 | 116.8294 | 2.1700e-003 | | 116.8836 |
| **Total** | **0.0499** | **0.0312** | **0.3283** | **1.1700e-003** | **0.1479** | **8.7000e-004** | **0.1487** | **0.0392** | **8.0000e-004** | **0.0400** | | **116.8294** | **116.8294** | **2.1700e-003** | | **116.8836** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fugitive Dust | | | | | 7.7233 | 0.0000 | 7.7233 | 4.2454 | 0.0000 | 4.2454 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.4656 | 2.0175 | 20.8690 | 0.0381 | | 0.0621 | 0.0621 | | 0.0621 | 0.0621 | 0.0000 | 3,688.0100 | 3,688.0100 | 1.1928 | | 3,717.8294 |
| **Total** | **0.4656** | **2.0175** | **20.8690** | **0.0381** | **7.7233** | **0.0621** | **7.7854** | **4.2454** | **0.0621** | **4.3075** | **0.0000** | **3,688.0100** | **3,688.0100** | **1.1928** | | **3,717.8294** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0499 | 0.0312 | 0.3283 | 1.1700e-003 | 0.1402 | 8.7000e-004 | 0.1410 | 0.0373 | 8.0000e-004 | 0.0381 | | 116.8294 | 116.8294 | 2.1700e-003 | | 116.8836 |
| **Total** | **0.0499** | **0.0312** | **0.3283** | **1.1700e-003** | **0.1402** | **8.7000e-004** | **0.1410** | **0.0373** | **8.0000e-004** | **0.0381** | | **116.8294** | **116.8294** | **2.1700e-003** | | **116.8836** |

## 3.4 Grading - 2024

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 10.7943 | 0.0000 | 10.7943 | 3.8255 | 0.0000 | 3.8255 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.7383 | 47.7684 | 39.6568 | 0.0924 | | 1.9437 | 1.9437 | | 1.7882 | 1.7882 | | 8,947.9447 | 8,947.9447 | 2.8940 | | 9,020.2933 |
| **Total** | **4.7383** | **47.7684** | **39.6568** | **0.0924** | **10.7943** | **1.9437** | **12.7381** | **3.8255** | **1.7882** | **5.6138** | | **8,947.9447** | **8,947.9447** | **2.8940** | | **9,020.2933** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0692 | 0.0433 | 0.4560 | 1.6300e-003 | 0.2054 | 1.2100e-003 | 0.2066 | 0.0545 | 1.1100e-003 | 0.0556 | | 162.2630 | 162.2630 | 3.0100e-003 | | 162.3383 |
| **Total** | **0.0692** | **0.0433** | **0.4560** | **1.6300e-003** | **0.2054** | **1.2100e-003** | **0.2066** | **0.0545** | **1.1100e-003** | **0.0556** | | **162.2630** | **162.2630** | **3.0100e-003** | | **162.3383** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 4.6146 | 0.0000 | 4.6146 | 1.6354 | 0.0000 | 1.6354 | | | 0.0000 | | | 0.0000 |
| Off-Road | 1.1344 | 4.9156 | 46.6696 | 0.0924 | | 0.1513 | 0.1513 | | 0.1513 | 0.1513 | 0.0000 | 8,947.9447 | 8,947.9447 | 2.8940 | | 9,020.2933 |
| **Total** | **1.1344** | **4.9156** | **46.6696** | **0.0924** | **4.6146** | **0.1513** | **4.7658** | **1.6354** | **0.1513** | **1.7867** | **0.0000** | **8,947.9447** | **8,947.9447** | **2.8940** | | **9,020.2933** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0692 | 0.0433 | 0.4560 | 1.6300e-003 | 0.1947 | 1.2100e-003 | 0.1959 | 0.0518 | 1.1100e-003 | 0.0530 | | 162.2630 | 162.2630 | 3.0100e-003 | | 162.3383 |
| **Total** | **0.0692** | **0.0433** | **0.4560** | **1.6300e-003** | **0.1947** | **1.2100e-003** | **0.1959** | **0.0518** | **1.1100e-003** | **0.0530** | | **162.2630** | **162.2630** | **3.0100e-003** | | **162.3383** |

## 3.5 Infrastructure Improvements - 2024

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 2.0026 | 17.9943 | 22.5696 | 0.0502 | | 0.7226 | 0.7226 | | 0.6648 | 0.6648 | | 4,861.9582 | 4,861.9582 | 1.5725 | | 4,901.2696 |
| **Total** | **2.0026** | **17.9943** | **22.5696** | **0.0502** | | **0.7226** | **0.7226** | | **0.6648** | **0.6648** | | **4,861.9582** | **4,861.9582** | **1.5725** | | **4,901.2696** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0637 | 0.0399 | 0.4195 | 1.5000e-003 | 0.1889 | 1.1100e-003 | 0.1901 | 0.0501 | 1.0200e-003 | 0.0511 | | 149.2820 | 149.2820 | 2.7700e-003 | | 149.3512 |
| **Total** | **0.0637** | **0.0399** | **0.4195** | **1.5000e-003** | **0.1889** | **1.1100e-003** | **0.1901** | **0.0501** | **1.0200e-003** | **0.0511** | | **149.2820** | **149.2820** | **2.7700e-003** | | **149.3512** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.6182 | 2.6789 | 30.2810 | 0.0502 | | 0.0824 | 0.0824 | | 0.0824 | 0.0824 | 0.0000 | 4,861.9582 | 4,861.9582 | 1.5725 | | 4,901.2696 |
| **Total** | **0.6182** | **2.6789** | **30.2810** | **0.0502** | | **0.0824** | **0.0824** | | **0.0824** | **0.0824** | **0.0000** | **4,861.9582** | **4,861.9582** | **1.5725** | | **4,901.2696** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0637 | 0.0399 | 0.4195 | 1.5000e-003 | 0.1791 | 1.1100e-003 | 0.1802 | 0.0477 | 1.0200e-003 | 0.0487 | | 149.2820 | 149.2820 | 2.7700e-003 | | 149.3512 |
| **Total** | **0.0637** | **0.0399** | **0.4195** | **1.5000e-003** | **0.1791** | **1.1100e-003** | **0.1802** | **0.0477** | **1.0200e-003** | **0.0487** | | **149.2820** | **149.2820** | **2.7700e-003** | | **149.3512** |

## 3.6 Paving - 2024

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| Category | lb/day | | | | | | | | | | lb/day | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 0.9882 | 9.5246 | 14.6258 | 0.0228 | | 0.4685 | 0.4685 | | 0.4310 | 0.4310 | | 2,207.5472 | 2,207.5472 | 0.7140 | | 2,225.3963 |
| Paving | 0.2787 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.2668** | **9.5246** | **14.6258** | **0.0228** | | **0.4685** | **0.4685** | | **0.4310** | **0.4310** | | **2,207.5472** | **2,207.5472** | **0.7140** | | **2,225.3963** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0415 | 0.0260 | 0.2736 | 9.8000e-004 | 0.1232 | 7.2000e-004 | 0.1240 | 0.0327 | 6.7000e-004 | 0.0334 | | 97.3578 | 97.3578 | 1.8100e-003 | | 97.4030 |
| **Total** | **0.0415** | **0.0260** | **0.2736** | **9.8000e-004** | **0.1232** | **7.2000e-004** | **0.1240** | **0.0327** | **6.7000e-004** | **0.0334** | | **97.3578** | **97.3578** | **1.8100e-003** | | **97.4030** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.2805 | 1.2154 | 17.2957 | 0.0228 | | 0.0374 | 0.0374 | | 0.0374 | 0.0374 | 0.0000 | 2,207.5472 | 2,207.5472 | 0.7140 | | 2,225.3963 |
| Paving | 0.2787 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **0.5591** | **1.2154** | **17.2957** | **0.0228** | | **0.0374** | **0.0374** | | **0.0374** | **0.0374** | **0.0000** | **2,207.5472** | **2,207.5472** | **0.7140** | | **2,225.3963** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0415 | 0.0260 | 0.2736 | 9.8000e-004 | 0.1168 | 7.2000e-004 | 0.1175 | 0.0311 | 6.7000e-004 | 0.0318 | | 97.3578 | 97.3578 | 1.8100e-003 | | 97.4030 |
| **Total** | **0.0415** | **0.0260** | **0.2736** | **9.8000e-004** | **0.1168** | **7.2000e-004** | **0.1175** | **0.0311** | **6.7000e-004** | **0.0318** | | **97.3578** | **97.3578** | **1.8100e-003** | | **97.4030** |

## 3.7 Building Construction - 2024

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.4716 | 13.4438 | 16.1668 | 0.0270 | | 0.6133 | 0.6133 | | 0.5769 | 0.5769 | | 2,555.6989 | 2,555.6989 | 0.6044 | | 2,570.8077 |
| **Total** | **1.4716** | **13.4438** | **16.1668** | **0.0270** | | **0.6133** | **0.6133** | | **0.5769** | **0.5769** | | **2,555.6989** | **2,555.6989** | **0.6044** | | **2,570.8077** |

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| Category | lb/day | | | | | | | | | | | lb/day | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.6539 | 20.6964 | 6.3750 | 0.0720 | 1.9157 | 0.0251 | 1.9408 | 0.5515 | 0.0240 | 0.5755 | | 7,600.3476 | 7,600.3476 | 0.2970 | | 7,607.7717 |
| Worker | 4.1710 | 2.6111 | 27.4673 | 0.0980 | 12.3714 | 0.0727 | 12.4442 | 3.2815 | 0.0669 | 3.3484 | | 9,774.7232 | 9,774.7232 | 0.1815 | | 9,779.2594 |
| **Total** | **4.8248** | **23.3074** | **33.8422** | **0.1700** | **14.2871** | **0.0979** | **14.3850** | **3.8329** | **0.0910** | **3.9239** | | **17,375.0708** | **17,375.0708** | **0.4784** | | **17,387.0311** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.5199 | 2.6115 | 17.6271 | 0.0270 | | 0.0853 | 0.0853 | | 0.0853 | 0.0853 | 0.0000 | 2,555.6989 | 2,555.6989 | 0.6044 | | 2,570.8077 |
| **Total** | **0.5199** | **2.6115** | **17.6271** | **0.0270** | | **0.0853** | **0.0853** | | **0.0853** | **0.0853** | **0.0000** | **2,555.6989** | **2,555.6989** | **0.6044** | | **2,570.8077** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.6539 | 20.6964 | 6.3750 | 0.0720 | 1.8338 | 0.0251 | 1.8589 | 0.5313 | 0.0240 | 0.5554 | | 7,600.3476 | 7,600.3476 | 0.2970 | | 7,607.7717 |
| Worker | 4.1710 | 2.6111 | 27.4673 | 0.0980 | 11.7263 | 0.0727 | 11.7990 | 3.1231 | 0.0669 | 3.1901 | | 9,774.7232 | 9,774.7232 | 0.1815 | | 9,779.2594 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | **4.8248** | **23.3074** | **33.8422** | **0.1700** | **13.5601** | **0.0979** | **13.6579** | **3.6545** | **0.0910** | **3.7454** | | **17,375.0708** | **17,375.0708** | **0.4784** | | **17,387.0311** |

## 3.7 Building Construction - 2025

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.6340 | 20.4074 | 6.1665 | 0.0715 | 1.9158 | 0.0245 | 1.9403 | 0.5515 | 0.0234 | 0.5749 | | 7,553.0792 | 7,553.0792 | 0.2889 | | 7,560.3009 |
| Worker | 3.9321 | 2.3693 | 25.3823 | 0.0939 | 12.3714 | 0.0716 | 12.4431 | 3.2815 | 0.0659 | 3.3474 | | 9,371.4022 | 9,371.4022 | 0.1639 | | 9,375.5006 |
| **Total** | **4.5661** | **22.7767** | **31.5488** | **0.1655** | **14.2872** | **0.0962** | **14.3833** | **3.8330** | **0.0894** | **3.9223** | | **16,924.4815** | **16,924.4815** | **0.4528** | | **16,935.8014** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.5038 | 2.5728 | 17.6150 | 0.0270 | | 0.0788 | 0.0788 | | 0.0788 | 0.0788 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **0.5038** | **2.5728** | **17.6150** | **0.0270** | | **0.0788** | **0.0788** | | **0.0788** | **0.0788** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.6340 | 20.4074 | 6.1665 | 0.0715 | 1.8338 | 0.0245 | 1.8583 | 0.5314 | 0.0234 | 0.5548 | | 7,553.0792 | 7,553.0792 | 0.2889 | | 7,560.3009 |
| Worker | 3.9321 | 2.3693 | 25.3823 | 0.0939 | 11.7263 | 0.0716 | 11.7980 | 3.1231 | 0.0659 | 3.1891 | | 9,371.4022 | 9,371.4022 | 0.1639 | | 9,375.5006 |
| **Total** | **4.5661** | **22.7767** | **31.5488** | **0.1655** | **13.5601** | **0.0962** | **13.6563** | **3.6545** | **0.0894** | **3.7439** | | **16,924.4815** | **16,924.4815** | **0.4528** | | **16,935.8014** |

## 3.7 Building Construction - 2026

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.6168 | 20.1228 | 6.0098 | 0.0711 | 1.9158 | 0.0239 | 1.9397 | 0.5515 | 0.0228 | 0.5743 | | 7,510.0011 | 7,510.0011 | 0.2813 | | 7,517.0338 |
| Worker | 3.7264 | 2.1644 | 23.5859 | 0.0904 | 12.3714 | 0.0696 | 12.4410 | 3.2815 | 0.0640 | 3.3455 | | 9,017.9321 | 9,017.9321 | 0.1488 | | 9,021.6528 |
| **Total** | **4.3433** | **22.2873** | **29.5957** | **0.1615** | **14.2872** | **0.0934** | **14.3807** | **3.8330** | **0.0868** | **3.9198** | | **16,527.9331** | **16,527.9331** | **0.4301** | | **16,538.6866** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.5038 | 2.5728 | 17.6150 | 0.0270 | | 0.0788 | 0.0788 | | 0.0788 | 0.0788 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **0.5038** | **2.5728** | **17.6150** | **0.0270** | | **0.0788** | **0.0788** | | **0.0788** | **0.0788** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.6168 | 20.1228 | 6.0098 | 0.0711 | 1.8339 | 0.0239 | 1.8577 | 0.5314 | 0.0228 | 0.5542 | | 7,510.0011 | 7,510.0011 | 0.2813 | | 7,517.0338 |
| Worker | 3.7264 | 2.1644 | 23.5859 | 0.0904 | 11.7263 | 0.0696 | 11.7959 | 3.1231 | 0.0640 | 3.1871 | | 9,017.9321 | 9,017.9321 | 0.1488 | | 9,021.6528 |
| **Total** | **4.3433** | **22.2873** | **29.5957** | **0.1615** | **13.5602** | **0.0934** | **13.6536** | **3.6545** | **0.0868** | **3.7413** | | **16,527.9331** | **16,527.9331** | **0.4301** | | **16,538.6866** |

## 3.8 Architectural Coating - 2025

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 17.0781 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.5126 | 3.4365 | 5.4274 | 8.9100e-003 | | 0.1545 | 0.1545 | | 0.1545 | 0.1545 | | 844.3442 | 844.3442 | 0.0461 | | 845.4956 |
| **Total** | **17.5907** | **3.4365** | **5.4274** | **8.9100e-003** | | **0.1545** | **0.1545** | | **0.1545** | **0.1545** | | **844.3442** | **844.3442** | **0.0461** | | **845.4956** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Worker | 0.7859 | 0.4736 | 5.0731 | 0.0188 | 2.4726 | 0.0143 | 2.4870 | 0.6559 | 0.0132 | 0.6690 | | 1,873.0359 | 1,873.0359 | 0.0328 | | 1,873.8550 |
| **Total** | **0.7859** | **0.4736** | **5.0731** | **0.0188** | **2.4726** | **0.0143** | **2.4870** | **0.6559** | **0.0132** | **0.6690** | | **1,873.0359** | **1,873.0359** | **0.0328** | | **1,873.8550** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 17.0781 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.0891 | 0.3863 | 5.4972 | 8.9100e-003 | | 0.0119 | 0.0119 | | 0.0119 | 0.0119 | 0.0000 | 844.3441 | 844.3441 | 0.0461 | | 845.4956 |
| **Total** | **17.1672** | **0.3863** | **5.4972** | **8.9100e-003** | | **0.0119** | **0.0119** | | **0.0119** | **0.0119** | **0.0000** | **844.3441** | **844.3441** | **0.0461** | | **845.4956** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.7859 | 0.4736 | 5.0731 | 0.0188 | 2.3437 | 0.0143 | 2.3580 | 0.6242 | 0.0132 | 0.6374 | | 1,873.0359 | 1,873.0359 | 0.0328 | | 1,873.8550 |
| **Total** | **0.7859** | **0.4736** | **5.0731** | **0.0188** | **2.3437** | **0.0143** | **2.3580** | **0.6242** | **0.0132** | **0.6374** | | **1,873.0359** | **1,873.0359** | **0.0328** | | **1,873.8550** |

## 3.8 Architectural Coating - 2026

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 17.0781 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.5126 | 3.4365 | 5.4274 | 8.9100e-003 | | 0.1545 | 0.1545 | | 0.1545 | 0.1545 | | 844.3442 | 844.3442 | 0.0461 | | 845.4956 |
| **Total** | **17.5907** | **3.4365** | **5.4274** | **8.9100e-003** | | **0.1545** | **0.1545** | | **0.1545** | **0.1545** | | **844.3442** | **844.3442** | **0.0461** | | **845.4956** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.7448 | 0.4326 | 4.7141 | 0.0181 | 2.4726 | 0.0139 | 2.4865 | 0.6559 | 0.0128 | 0.6687 | | 1,802.3888 | 1,802.3888 | 0.0298 | | 1,803.1325 |
| **Total** | **0.7448** | **0.4326** | **4.7141** | **0.0181** | **2.4726** | **0.0139** | **2.4865** | **0.6559** | **0.0128** | **0.6687** | | **1,802.3888** | **1,802.3888** | **0.0298** | | **1,803.1325** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 17.0781 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 0.0891 | 0.3863 | 5.4972 | 8.9100e-003 | | 0.0119 | 0.0119 | | 0.0119 | 0.0119 | 0.0000 | 844.3441 | 844.3441 | 0.0461 | | 845.4956 |
| **Total** | **17.1672** | **0.3863** | **5.4972** | **8.9100e-003** | | **0.0119** | **0.0119** | | **0.0119** | **0.0119** | **0.0000** | **844.3441** | **844.3441** | **0.0461** | | **845.4956** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.7448 | 0.4326 | 4.7141 | 0.0181 | 2.3437 | 0.0139 | 2.3576 | 0.6242 | 0.0128 | 0.6370 | | 1,802.3888 | 1,802.3888 | 0.0298 | | 1,803.1325 |
| **Total** | **0.7448** | **0.4326** | **4.7141** | **0.0181** | **2.3437** | **0.0139** | **2.3576** | **0.6242** | **0.0128** | **0.6370** | | **1,802.3888** | **1,802.3888** | **0.0298** | | **1,803.1325** |

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

Increase Diversity

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

Implement NEV Network

Expand Transit Network

Implement Trip Reduction Program

Transit Subsidy

Employee Vanpool/Shuttle

Provide Riade Sharing Program

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 3.2215 | 15.0986 | 42.4672 | 0.1688 | 18.1932 | 0.1297 | 18.3229 | 4.8659 | 0.1207 | 4.9865 | | 17,080.2310 | 17,080.2310 | 0.5332 | | 17,093.5602 |
| Unmitigated | 3.5027 | 16.7550 | 49.2376 | 0.2022 | 22.0090 | 0.1537 | 22.1627 | 5.8864 | 0.1430 | 6.0294 | | 20,448.4390 | 20,448.4390 | 0.6151 | | 20,463.8168 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| City Park | 0.00 | 0.00 | 0.00 | | |
| Condo/Townhouse High Rise | 600.00 | 538.75 | 428.75 | 2,040,171 | 1,788,465 |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Recreational Swimming Pool | 0.00 | 0.00 | 0.00 | | |
| Retirement Community | 2,280.00 | 964.25 | 926.25 | 6,834,252 | 5,991,077 |
| Total | 2,880.00 | 1,503.00 | 1,355.00 | 8,874,423 | 7,779,542 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| City Park | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 66 | 28 | 6 |
| Condo/Townhouse High Rise | 16.80 | 7.50 | 8.90 | 31.00 | 15.00 | 54.00 | 86 | 11 | 3 |
| Parking Lot | 9.50 | 7.30 | 7.30 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Recreational Swimming Pool | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 52 | 39 | 9 |
| Retirement Community | 16.80 | 7.50 | 8.90 | 31.00 | 15.00 | 54.00 | 86 | 11 | 3 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| City Park | 0.599857 | 0.035995 | 0.184589 | 0.112732 | 0.013754 | 0.004911 | 0.010789 | 0.025450 | 0.001650 | 0.001625 | 0.005224 | 0.002699 | 0.000725 |
| Condo/Townhouse High Rise | 0.599857 | 0.035995 | 0.184589 | 0.112732 | 0.013754 | 0.004911 | 0.010789 | 0.025450 | 0.001650 | 0.001625 | 0.005224 | 0.002699 | 0.000725 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Parking Lot | 0.599857 | 0.035995 | 0.184589 | 0.112732 | 0.013754 | 0.004911 | 0.010789 | 0.025450 | 0.001650 | 0.001625 | 0.005224 | 0.002699 | 0.000725 |
| Recreational Swimming Pool | 0.599857 | 0.035995 | 0.184589 | 0.112732 | 0.013754 | 0.004911 | 0.010789 | 0.025450 | 0.001650 | 0.001625 | 0.005224 | 0.002699 | 0.000725 |
| Retirement Community | 0.599857 | 0.035995 | 0.184589 | 0.112732 | 0.013754 | 0.004911 | 0.010789 | 0.025450 | 0.001650 | 0.001625 | 0.005224 | 0.002699 | 0.000725 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Percent of Electricity Use Generated with Renewable Energy

Install Energy Efficient Appliances

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.1119 | 0.9564 | 0.4070 | 6.1000e-003 | | 0.0773 | 0.0773 | | 0.0773 | 0.0773 | | 1,220.8706 | 1,220.8706 | 0.0234 | 0.0224 | 1,228.1256 |
| NaturalGas Unmitigated | 0.1750 | 1.4958 | 0.6365 | 9.5500e-003 | | 0.1209 | 0.1209 | | 0.1209 | 0.1209 | | 1,909.5520 | 1,909.5520 | 0.0366 | 0.0350 | 1,920.8995 |

### 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Condo/Townhouse High Rise | 2958.72 | 0.0319 | 0.2727 | 0.1160 | 1.7400e-003 | | 0.0221 | 0.0221 | | 0.0221 | 0.0221 | | 348.0842 | 348.0842 | 6.6700e-003 | 6.3800e-003 | 350.1527 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Retirement Community | 13272.5 | 0.1431 | 1.2232 | 0.5205 | 7.8100e-003 | | 0.0989 | 0.0989 | | 0.0989 | 0.0989 | | 1,561.4678 | 1,561.4678 | 0.0299 | 0.0286 | 1,570.7468 |
| **Total** | | **0.1750** | **1.4958** | **0.6365** | **9.5500e-003** | | **0.1209** | **0.1209** | | **0.1209** | **0.1209** | | **1,909.5520** | **1,909.5520** | **0.0366** | **0.0350** | **1,920.8995** |

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Condo/Townhouse High Rise | 1.96325 | 0.0212 | 0.1809 | 0.0770 | 1.1500e-003 | | 0.0146 | 0.0146 | | 0.0146 | 0.0146 | | 230.9707 | 230.9707 | 4.4300e-003 | 4.2300e-003 | 232.3432 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Retirement Community | 8.41415 | 0.0907 | 0.7754 | 0.3300 | 4.9500e-003 | | 0.0627 | 0.0627 | | 0.0627 | 0.0627 | | 989.8999 | 989.8999 | 0.0190 | 0.0182 | 995.7824 |
| **Total** | | **0.1119** | **0.9564** | **0.4070** | **6.1000e-003** | | **0.0773** | **0.0773** | | **0.0773** | **0.0773** | | **1,220.8706** | **1,220.8706** | **0.0234** | **0.0224** | **1,228.1256** |

## 6.0 Area Detail

### 6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

Use Low VOC Cleaning Supplies

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 13.0990 | 0.4523 | 37.6026 | 1.7000e-003 | | 0.2047 | 0.2047 | | 0.2047 | 0.2047 | 0.0000 | 62.4075 | 62.4075 | 0.0448 | 0.0000 | 63.5268 |
| Unmitigated | 17.3247 | 4.2857 | 51.0674 | 0.0263 | | 0.5749 | 0.5749 | | 0.5749 | 0.5749 | 0.0000 | 4,832.7304 | 4,832.7304 | 0.1765 | 0.0870 | 4,863.0572 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 2.3348 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 13.0673 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.4348 | 3.7158 | 1.5812 | 0.0237 | | 0.3004 | 0.3004 | | 0.3004 | 0.3004 | 0.0000 | 4,743.5294 | 4,743.5294 | 0.0909 | 0.0870 | 4,771.7178 |
| Landscaping | 1.4878 | 0.5699 | 49.4863 | 2.6200e-003 | | 0.2745 | 0.2745 | | 0.2745 | 0.2745 | | 89.2010 | 89.2010 | 0.0855 | | 91.3394 |
| **Total** | **17.3247** | **4.2857** | **51.0675** | **0.0263** | | **0.5749** | **0.5749** | | **0.5749** | **0.5749** | **0.0000** | **4,832.7304** | **4,832.7304** | **0.1765** | **0.0870** | **4,863.0572** |

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.2073 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 12.1025 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 0.7892 | 0.4523 | 37.6026 | 1.7000e-003 | | 0.2047 | 0.2047 | | 0.2047 | 0.2047 | | 62.4075 | 62.4075 | 0.0448 | | 63.5268 |
| **Total** | **13.0990** | **0.4523** | **37.6026** | **1.7000e-003** | | **0.2047** | **0.2047** | | **0.2047** | **0.2047** | **0.0000** | **62.4075** | **62.4075** | **0.0448** | **0.0000** | **63.5268** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

Use Reclaimed Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Turf Reduction

Use Water Efficient Irrigation System

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

## 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

**Boilers**

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

**User Defined Equipment**

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

# Vineyards at Deer Creek - Phase 2

**Contra Costa County, Summer**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Parking Lot | 260.00 | Space | 2.34 | 104,000.00 | 0 |
| City Park | 56.25 | Acre | 56.25 | 2,450,250.00 | 0 |
| Recreational Swimming Pool | 2.00 | 1000sqft | 0.05 | 2,000.00 | 0 |
| Condo/Townhouse High Rise | 125.00 | Dwelling Unit | 1.95 | 125,000.00 | 358 |
| Retirement Community | 475.00 | Dwelling Unit | 95.00 | 475,000.00 | 1359 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 58 |
| **Climate Zone** | 4 | | | **Operational Year** | 2026 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 146 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - Per PG&E 2018 CRSR

Land Use - Parking: assumed 2 spaces for 125 DUs, plus 10 extra spaces for recreation uses
City Park is open space/ agricultural uses

Construction Phase - Per Construction Questionnaire

Off-road Equipment - Estimated equipment use

Off-road Equipment -

Off-road Equipment - No demolition

Off-road Equipment - Estimated equipment use

Off-road Equipment -

Off-road Equipment - Estimated equipment use

Off-road Equipment -

Off-road Equipment -

Trips and VMT - vendor trips would be lower since city park was used to model the proposed natural open space, informal parkland, low impact trails, etc.

Demolition - No demolition

Grading - Balanced between all phases

Vehicle Trips - Per Fehr and Peers TIA 2019

Woodstoves - Per BAAQMD Regulation 6, Rule 3

Energy Use -

Land Use Change -

Construction Off-road Equipment Mitigation - Per BAAQMD basic and advanced control measure

Mobile Land Use Mitigation - Green building design elements include narrower roadways

Mobile Commute Mitigation -

Area Mitigation - No hearth, low VOC cleaning supplies, low VOC paint, and electric landscape equipment

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblAreaMitigation | UseLowVOCPaintNonresidentialExteriorValue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintNonresidentialInteriorValue | 100 | 10 |
| tblAreaMitigation | UseLowVOCPaintParkingCheck | False | True |
| tblAreaMitigation | UseLowVOCPaintParkingValue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintResidentialExteriorValue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintResidentialInteriorValue | 100 | 10 |
| tblConstDustMitigation | CleanPavedRoadPercentReduction | 0 | 6 |
| tblConstDustMitigation | WaterUnpavedRoadMoistureContent | 0 | 12 |
| tblConstDustMitigation | WaterUnpavedRoadVehicleSpeed | 0 | 15 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |

| | | | |
|---|---|---|---|
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 8.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 6.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 4.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 12.00 |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstructionPhase | NumDays | 220.00 | 499.00 |
| tblConstructionPhase | NumDays | 3,100.00 | 577.00 |
| tblConstructionPhase | NumDays | 200.00 | 0.00 |
| tblConstructionPhase | NumDays | 310.00 | 110.00 |

| | | | |
|---|---|---|---|
| tblConstructionPhase | NumDays | 220.00 | 22.00 |
| tblConstructionPhase | NumDays | 120.00 | 10.00 |
| tblFireplaces | NumberGas | 18.75 | 40.00 |
| tblFireplaces | NumberGas | 71.25 | 152.00 |
| tblFireplaces | NumberWood | 21.25 | 0.00 |
| tblFireplaces | NumberWood | 80.75 | 0.00 |
| tblOffRoadEquipment | HorsePower | 203.00 | 247.00 |
| tblOffRoadEquipment | LoadFactor | 0.36 | 0.40 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 4.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 3.00 |
| tblProjectCharacteristics | CO2IntensityFactor | 641.35 | 146 |
| tblTripsAndVMT | VendorTripNumber | 483.00 | 283.00 |
| tblVehicleTrips | HO_TL | 5.70 | 8.90 |
| tblVehicleTrips | HO_TL | 5.70 | 8.90 |
| tblVehicleTrips | HS_TL | 4.80 | 7.50 |
| tblVehicleTrips | HS_TL | 4.80 | 7.50 |
| tblVehicleTrips | HW_TL | 10.80 | 16.80 |
| tblVehicleTrips | HW_TL | 10.80 | 16.80 |
| tblVehicleTrips | ST_TR | 22.75 | 0.00 |
| tblVehicleTrips | ST_TR | 9.10 | 0.00 |
| tblVehicleTrips | SU_TR | 16.74 | 0.00 |
| tblVehicleTrips | SU_TR | 13.60 | 0.00 |
| tblVehicleTrips | WD_TR | 1.89 | 0.00 |
| tblVehicleTrips | WD_TR | 4.18 | 4.80 |
| tblVehicleTrips | WD_TR | 33.82 | 0.00 |
| tblVehicleTrips | WD_TR | 2.40 | 4.80 |
| tblWoodstoves | NumberCatalytic | 2.50 | 0.00 |
| tblWoodstoves | NumberCatalytic | 9.50 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 2.50 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 9.50 | 0.00 |

## 2.0 Emissions Summary

### 2.1 Overall Construction (Maximum Daily Emission)

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2024 | 7.4780 | 47.8036 | 67.1360 | 0.2328 | 18.2141 | 1.9450 | 19.4443 | 9.9699 | 1.7894 | 11.1017 | 0.0000 | 23,455.3135 | 23,455.3135 | 2.8973 | 0.0000 | 23,500.1651 |
| 2025 | 24.1614 | 38.5343 | 60.7705 | 0.2336 | 16.7598 | 0.7917 | 17.5516 | 4.4888 | 0.7525 | 5.2414 | 0.0000 | 23,556.7911 | 23,556.7911 | 1.1309 | 0.0000 | 23,585.0641 |
| 2026 | 23.8890 | 38.0565 | 58.3229 | 0.2285 | 16.7599 | 0.7887 | 17.5486 | 4.4888 | 0.7497 | 5.2385 | 0.0000 | 23,043.2523 | 23,043.2523 | 1.1047 | 0.0000 | 23,070.8706 |
| **Maximum** | **24.1614** | **47.8036** | **67.1360** | **0.2336** | **18.2141** | **1.9450** | **19.4443** | **9.9699** | **1.7894** | **11.1017** | **0.0000** | **23,556.7911** | **23,556.7911** | **2.8973** | **0.0000** | **23,585.0641** |

**Mitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2024 | 5.8186 | 26.5701 | 71.2662 | 0.2328 | 13.6769 | 0.2204 | 13.8972 | 4.2827 | 0.2135 | 4.3456 | 0.0000 | 23,455.3135 | 23,455.3135 | 2.8973 | 0.0000 | 23,500.1651 |
| 2025 | 22.8743 | 25.5872 | 62.3707 | 0.2336 | 15.9038 | 0.2003 | 16.1041 | 4.2787 | 0.1924 | 4.4711 | 0.0000 | 23,556.7910 | 23,556.7910 | 1.1309 | 0.0000 | 23,585.0641 |
| 2026 | 22.6019 | 25.1094 | 59.9232 | 0.2285 | 15.9039 | 0.1972 | 16.1011 | 4.2787 | 0.1896 | 4.4683 | 0.0000 | 23,043.2523 | 23,043.2523 | 1.1047 | 0.0000 | 23,070.8706 |
| **Maximum** | **22.8743** | **26.5701** | **71.2662** | **0.2336** | **15.9039** | **0.2204** | **16.1041** | **4.2827** | **0.2135** | **4.4711** | **0.0000** | **23,556.7910** | **23,556.7910** | **2.8973** | **0.0000** | **23,585.0641** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **7.62** | **37.89** | **-3.94** | **0.00** | **12.08** | **82.47** | **15.48** | **32.23** | **81.91** | **38.44** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 17.3247 | 4.2857 | 51.0674 | 0.0263 | | 0.5749 | 0.5749 | | 0.5749 | 0.5749 | 0.0000 | 4,832.7304 | 4,832.7304 | 0.1765 | 0.0870 | 4,863.0572 |
| Energy | 0.1750 | 1.4958 | 0.6365 | 9.5500e-003 | | 0.1209 | 0.1209 | | 0.1209 | 0.1209 | | 1,909.5520 | 1,909.5520 | 0.0366 | 0.0350 | 1,920.8995 |
| Mobile | 4.2212 | 15.8281 | 52.1272 | 0.2187 | 22.0090 | 0.1533 | 22.1623 | 5.8864 | 0.1426 | 6.0290 | | 22,108.0162 | 22,108.0162 | 0.6172 | | 22,123.4454 |
| **Total** | **21.7209** | **21.6096** | **103.8311** | **0.2546** | **22.0090** | **0.8491** | **22.8582** | **5.8864** | **0.8385** | **6.7249** | **0.0000** | **28,850.2986** | **28,850.2986** | **0.8302** | **0.1220** | **28,907.4021** |

### Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 13.0990 | 0.4523 | 37.6026 | 1.7000e-003 | | 0.2047 | 0.2047 | | 0.2047 | 0.2047 | 0.0000 | 62.4075 | 62.4075 | 0.0448 | 0.0000 | 63.5268 |
| Energy | 0.1119 | 0.9564 | 0.4070 | 6.1000e-003 | | 0.0773 | 0.0773 | | 0.0773 | 0.0773 | | 1,220.8706 | 1,220.8706 | 0.0234 | 0.0224 | 1,228.1256 |
| Mobile | 3.9347 | 14.3421 | 44.2741 | 0.1827 | 18.1932 | 0.1293 | 18.3225 | 4.8659 | 0.1203 | 4.9861 | | 18,469.6211 | 18,469.6211 | 0.5309 | | 18,482.8925 |
| **Total** | **17.1455** | **15.7508** | **82.2837** | **0.1905** | **18.1932** | **0.4113** | **18.6045** | **4.8659** | **0.4022** | **5.2681** | **0.0000** | **19,752.8991** | **19,752.8991** | **0.5990** | **0.0224** | **19,774.5449** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **21.06** | **27.11** | **20.75** | **25.18** | **17.34** | **51.57** | **18.61** | **17.34** | **52.03** | **21.66** | **0.00** | **31.53** | **31.53** | **27.85** | **81.65** | **31.59** |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Demolition | Demolition | 1/1/2024 | 12/31/2023 | 5 | 0 | |
| 2 | Site Preparation | Site Preparation | 1/1/2024 | 1/12/2024 | 5 | 10 | |
| 3 | Grading | Grading | 1/13/2024 | 6/14/2024 | 5 | 110 | |
| 4 | Infrastructure Improvements | Trenching | 6/15/2024 | 9/16/2024 | 5 | 66 | |
| 5 | Paving | Paving | 9/17/2024 | 10/16/2024 | 5 | 22 | |
| 6 | Building Construction | Building Construction | 10/16/2024 | 12/31/2026 | 5 | 577 | |
| 7 | Architectural Coating | Architectural Coating | 2/1/2025 | 12/31/2026 | 5 | 499 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 495**

**Acres of Paving: 2.34**

**Residential Indoor: 1,215,000; Residential Outdoor: 405,000; Non-Residential Indoor: 4,500; Non-Residential Outdoor: 1,500; Striped**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Demolition | Excavators | 3 | 8.00 | 158 | 0.38 |
| Demolition | Rubber Tired Dozers | 2 | 8.00 | 247 | 0.40 |
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 4 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |

| | | | | | |
|---|---|---|---|---|---|
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 3 | 6.00 | 78 | 0.48 |
| Infrastructure Improvements | Excavators | 3 | 8.00 | 158 | 0.38 |
| Infrastructure Improvements | Rubber Tired Loaders | 3 | 8.00 | 247 | 0.40 |
| Infrastructure Improvements | Tractors/Loaders/Backhoes | 3 | 8.00 | 97 | 0.37 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Demolition | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 10 | 25.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 1,506.00 | 283.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 3 | 301.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Infrastructure Improvements | 9 | 23.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

## 3.3 Site Preparation - 2024

## Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 18.0663 | 0.0000 | 18.0663 | 9.9307 | 0.0000 | 9.9307 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.6609 | 27.1760 | 18.3356 | 0.0381 | | 1.2294 | 1.2294 | | 1.1310 | 1.1310 | | 3,688.0100 | 3,688.0100 | 1.1928 | | 3,717.8294 |
| **Total** | **2.6609** | **27.1760** | **18.3356** | **0.0381** | **18.0663** | **1.2294** | **19.2956** | **9.9307** | **1.1310** | **11.0617** | | **3,688.0100** | **3,688.0100** | **1.1928** | | **3,717.8294** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0488 | 0.0254 | 0.3640 | 1.2900e-003 | 0.1479 | 8.7000e-004 | 0.1487 | 0.0392 | 8.0000e-004 | 0.0400 | | 128.9293 | 128.9293 | 2.3900e-003 | | 128.9890 |
| **Total** | **0.0488** | **0.0254** | **0.3640** | **1.2900e-003** | **0.1479** | **8.7000e-004** | **0.1487** | **0.0392** | **8.0000e-004** | **0.0400** | | **128.9293** | **128.9293** | **2.3900e-003** | | **128.9890** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fugitive Dust | | | | | 7.7233 | 0.0000 | 7.7233 | 4.2454 | 0.0000 | 4.2454 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.4656 | 2.0175 | 20.8690 | 0.0381 | | 0.0621 | 0.0621 | | 0.0621 | 0.0621 | 0.0000 | 3,688.0100 | 3,688.0100 | 1.1928 | | 3,717.8294 |
| **Total** | **0.4656** | **2.0175** | **20.8690** | **0.0381** | **7.7233** | **0.0621** | **7.7854** | **4.2454** | **0.0621** | **4.3075** | **0.0000** | **3,688.0100** | **3,688.0100** | **1.1928** | | **3,717.8294** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0488 | 0.0254 | 0.3640 | 1.2900e-003 | 0.1402 | 8.7000e-004 | 0.1410 | 0.0373 | 8.0000e-004 | 0.0381 | | 128.9293 | 128.9293 | 2.3900e-003 | | 128.9890 |
| **Total** | **0.0488** | **0.0254** | **0.3640** | **1.2900e-003** | **0.1402** | **8.7000e-004** | **0.1410** | **0.0373** | **8.0000e-004** | **0.0381** | | **128.9293** | **128.9293** | **2.3900e-003** | | **128.9890** |

## 3.4 Grading - 2024

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 10.7943 | 0.0000 | 10.7943 | 3.8255 | 0.0000 | 3.8255 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.7383 | 47.7684 | 39.6568 | 0.0924 | | 1.9437 | 1.9437 | | 1.7882 | 1.7882 | | 8,947.9447 | 8,947.9447 | 2.8940 | | 9,020.2933 |
| **Total** | **4.7383** | **47.7684** | **39.6568** | **0.0924** | **10.7943** | **1.9437** | **12.7381** | **3.8255** | **1.7882** | **5.6138** | | **8,947.9447** | **8,947.9447** | **2.8940** | | **9,020.2933** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0678 | 0.0352 | 0.5055 | 1.8000e-003 | 0.2054 | 1.2100e-003 | 0.2066 | 0.0545 | 1.1100e-003 | 0.0556 | | 179.0685 | 179.0685 | 3.3200e-003 | | 179.1513 |
| **Total** | **0.0678** | **0.0352** | **0.5055** | **1.8000e-003** | **0.2054** | **1.2100e-003** | **0.2066** | **0.0545** | **1.1100e-003** | **0.0556** | | **179.0685** | **179.0685** | **3.3200e-003** | | **179.1513** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 4.6146 | 0.0000 | 4.6146 | 1.6354 | 0.0000 | 1.6354 | | | 0.0000 | | | 0.0000 |
| Off-Road | 1.1344 | 4.9156 | 46.6696 | 0.0924 | | 0.1513 | 0.1513 | | 0.1513 | 0.1513 | 0.0000 | 8,947.9447 | 8,947.9447 | 2.8940 | | 9,020.2933 |
| **Total** | **1.1344** | **4.9156** | **46.6696** | **0.0924** | **4.6146** | **0.1513** | **4.7658** | **1.6354** | **0.1513** | **1.7867** | **0.0000** | **8,947.9447** | **8,947.9447** | **2.8940** | | **9,020.2933** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0678 | 0.0352 | 0.5055 | 1.8000e-003 | 0.1947 | 1.2100e-003 | 0.1959 | 0.0518 | 1.1100e-003 | 0.0530 | | 179.0685 | 179.0685 | 3.3200e-003 | | 179.1513 |
| **Total** | **0.0678** | **0.0352** | **0.5055** | **1.8000e-003** | **0.1947** | **1.2100e-003** | **0.1959** | **0.0518** | **1.1100e-003** | **0.0530** | | **179.0685** | **179.0685** | **3.3200e-003** | | **179.1513** |

## 3.5 Infrastructure Improvements - 2024

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 2.0026 | 17.9943 | 22.5696 | 0.0502 | | 0.7226 | 0.7226 | | 0.6648 | 0.6648 | | 4,861.9582 | 4,861.9582 | 1.5725 | | 4,901.2696 |
| **Total** | **2.0026** | **17.9943** | **22.5696** | **0.0502** | | **0.7226** | **0.7226** | | **0.6648** | **0.6648** | | **4,861.9582** | **4,861.9582** | **1.5725** | | **4,901.2696** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0624 | 0.0324 | 0.4651 | 1.6500e-003 | 0.1889 | 1.1100e-003 | 0.1901 | 0.0501 | 1.0200e-003 | 0.0511 | | 164.7430 | 164.7430 | 3.0500e-003 | | 164.8192 |
| **Total** | **0.0624** | **0.0324** | **0.4651** | **1.6500e-003** | **0.1889** | **1.1100e-003** | **0.1901** | **0.0501** | **1.0200e-003** | **0.0511** | | **164.7430** | **164.7430** | **3.0500e-003** | | **164.8192** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.6182 | 2.6789 | 30.2810 | 0.0502 | | 0.0824 | 0.0824 | | 0.0824 | 0.0824 | 0.0000 | 4,861.9582 | 4,861.9582 | 1.5725 | | 4,901.2696 |
| **Total** | **0.6182** | **2.6789** | **30.2810** | **0.0502** | | **0.0824** | **0.0824** | | **0.0824** | **0.0824** | **0.0000** | **4,861.9582** | **4,861.9582** | **1.5725** | | **4,901.2696** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0624 | 0.0324 | 0.4651 | 1.6500e-003 | 0.1791 | 1.1100e-003 | 0.1802 | 0.0477 | 1.0200e-003 | 0.0487 | | 164.7430 | 164.7430 | 3.0500e-003 | | 164.8192 |
| **Total** | **0.0624** | **0.0324** | **0.4651** | **1.6500e-003** | **0.1791** | **1.1100e-003** | **0.1802** | **0.0477** | **1.0200e-003** | **0.0487** | | **164.7430** | **164.7430** | **3.0500e-003** | | **164.8192** |

## 3.6 Paving - 2024

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| Category | lb/day | | | | | | | | | | lb/day | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 0.9882 | 9.5246 | 14.6258 | 0.0228 | | 0.4685 | 0.4685 | | 0.4310 | 0.4310 | | 2,207.5472 | 2,207.5472 | 0.7140 | | 2,225.3963 |
| Paving | 0.2787 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.2668** | **9.5246** | **14.6258** | **0.0228** | | **0.4685** | **0.4685** | | **0.4310** | **0.4310** | | **2,207.5472** | **2,207.5472** | **0.7140** | | **2,225.3963** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0407 | 0.0211 | 0.3033 | 1.0800e-003 | 0.1232 | 7.2000e-004 | 0.1240 | 0.0327 | 6.7000e-004 | 0.0334 | | 107.4411 | 107.4411 | 1.9900e-003 | | 107.4908 |
| **Total** | **0.0407** | **0.0211** | **0.3033** | **1.0800e-003** | **0.1232** | **7.2000e-004** | **0.1240** | **0.0327** | **6.7000e-004** | **0.0334** | | **107.4411** | **107.4411** | **1.9900e-003** | | **107.4908** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.2805 | 1.2154 | 17.2957 | 0.0228 | | 0.0374 | 0.0374 | | 0.0374 | 0.0374 | 0.0000 | 2,207.5472 | 2,207.5472 | 0.7140 | | 2,225.3963 |
| Paving | 0.2787 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **0.5591** | **1.2154** | **17.2957** | **0.0228** | | **0.0374** | **0.0374** | | **0.0374** | **0.0374** | **0.0000** | **2,207.5472** | **2,207.5472** | **0.7140** | | **2,225.3963** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0407 | 0.0211 | 0.3033 | 1.0800e-003 | 0.1168 | 7.2000e-004 | 0.1175 | 0.0311 | 6.7000e-004 | 0.0318 | | 107.4411 | 107.4411 | 1.9900e-003 | | 107.4908 |
| **Total** | **0.0407** | **0.0211** | **0.3033** | **1.0800e-003** | **0.1168** | **7.2000e-004** | **0.1175** | **0.0311** | **6.7000e-004** | **0.0318** | | **107.4411** | **107.4411** | **1.9900e-003** | | **107.4908** |

## 3.7 Building Construction - 2024

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.4716 | 13.4438 | 16.1668 | 0.0270 | | 0.6133 | 0.6133 | | 0.5769 | 0.5769 | | 2,555.6989 | 2,555.6989 | 0.6044 | | 2,570.8077 |
| **Total** | **1.4716** | **13.4438** | **16.1668** | **0.0270** | | **0.6133** | **0.6133** | | **0.5769** | **0.5769** | | **2,555.6989** | **2,555.6989** | **0.6044** | | **2,570.8077** |

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| Category | lb/day | | | | | | | | | | | lb/day | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.6150 | 20.6013 | 5.5871 | 0.0738 | 1.9157 | 0.0242 | 1.9399 | 0.5515 | 0.0231 | 0.5746 | | 7,797.5428 | 7,797.5428 | 0.2741 | | 7,804.3940 |
| Worker | 4.0839 | 2.1209 | 30.4531 | 0.1082 | 12.3714 | 0.0727 | 12.4442 | 3.2815 | 0.0669 | 3.3484 | | 10,787.0835 | 10,787.0835 | 0.1997 | | 10,792.0763 |
| **Total** | **4.6989** | **22.7222** | **36.0401** | **0.1820** | **14.2871** | **0.0969** | **14.3840** | **3.8329** | **0.0901** | **3.9230** | | **18,584.6264** | **18,584.6264** | **0.4738** | | **18,596.4703** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.5199 | 2.6115 | 17.6271 | 0.0270 | | 0.0853 | 0.0853 | | 0.0853 | 0.0853 | 0.0000 | 2,555.6989 | 2,555.6989 | 0.6044 | | 2,570.8077 |
| **Total** | **0.5199** | **2.6115** | **17.6271** | **0.0270** | | **0.0853** | **0.0853** | | **0.0853** | **0.0853** | **0.0000** | **2,555.6989** | **2,555.6989** | **0.6044** | | **2,570.8077** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.6150 | 20.6013 | 5.5871 | 0.0738 | 1.8338 | 0.0242 | 1.8579 | 0.5313 | 0.0231 | 0.5545 | | 7,797.5428 | 7,797.5428 | 0.2741 | | 7,804.3940 |
| Worker | 4.0839 | 2.1209 | 30.4531 | 0.1082 | 11.7263 | 0.0727 | 11.7990 | 3.1231 | 0.0669 | 3.1901 | | 10,787.0835 | 10,787.0835 | 0.1997 | | 10,792.0763 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | **4.6989** | **22.7222** | **36.0401** | **0.1820** | **13.5601** | **0.0969** | **13.6570** | **3.6545** | **0.0901** | **3.7445** | | **18,584.6264** | **18,584.6264** | **0.4738** | | **18,596.4703** |

## 3.7 Building Construction - 2025

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.5968 | 20.3180 | 5.4069 | 0.0734 | 1.9158 | 0.0237 | 1.9394 | 0.5515 | 0.0226 | 0.5741 | | 7,747.5956 | 7,747.5956 | 0.2669 | | 7,754.2685 |
| Worker | 3.8392 | 1.9253 | 28.2127 | 0.1037 | 12.3714 | 0.0716 | 12.4431 | 3.2815 | 0.0659 | 3.3474 | | 10,341.4586 | 10,341.4586 | 0.1809 | | 10,345.9799 |
| **Total** | **4.4360** | **22.2433** | **33.6196** | **0.1770** | **14.2872** | **0.0953** | **14.3825** | **3.8330** | **0.0886** | **3.9215** | | **18,089.0542** | **18,089.0542** | **0.4478** | | **18,100.2484** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.5038 | 2.5728 | 17.6150 | 0.0270 | | 0.0788 | 0.0788 | | 0.0788 | 0.0788 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **0.5038** | **2.5728** | **17.6150** | **0.0270** | | **0.0788** | **0.0788** | | **0.0788** | **0.0788** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.5968 | 20.3180 | 5.4069 | 0.0734 | 1.8338 | 0.0237 | 1.8575 | 0.5314 | 0.0226 | 0.5540 | | 7,747.5956 | 7,747.5956 | 0.2669 | | 7,754.2685 |
| Worker | 3.8392 | 1.9253 | 28.2127 | 0.1037 | 11.7263 | 0.0716 | 11.7980 | 3.1231 | 0.0659 | 3.1891 | | 10,341.4586 | 10,341.4586 | 0.1809 | | 10,345.9799 |
| **Total** | **4.4360** | **22.2433** | **33.6196** | **0.1770** | **13.5601** | **0.0953** | **13.6555** | **3.6545** | **0.0886** | **3.7431** | | **18,089.0542** | **18,089.0542** | **0.4478** | | **18,100.2484** |

## 3.7 Building Construction - 2026

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.5809 | 20.0392 | 5.2722 | 0.0729 | 1.9158 | 0.0232 | 1.9390 | 0.5515 | 0.0221 | 0.5736 | | 7,702.2006 | 7,702.2006 | 0.2603 | | 7,708.7075 |
| Worker | 3.6254 | 1.7594 | 26.2851 | 0.0997 | 12.3714 | 0.0696 | 12.4410 | 3.2815 | 0.0640 | 3.3455 | | 9,951.2956 | 9,951.2956 | 0.1646 | | 9,955.4096 |
| **Total** | **4.2063** | **21.7987** | **31.5573** | **0.1726** | **14.2872** | **0.0927** | **14.3799** | **3.8330** | **0.0861** | **3.9191** | | **17,653.4962** | **17,653.4962** | **0.4248** | | **17,664.1171** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.5038 | 2.5728 | 17.6150 | 0.0270 | | 0.0788 | 0.0788 | | 0.0788 | 0.0788 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **0.5038** | **2.5728** | **17.6150** | **0.0270** | | **0.0788** | **0.0788** | | **0.0788** | **0.0788** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.5809 | 20.0392 | 5.2722 | 0.0729 | 1.8339 | 0.0232 | 1.8570 | 0.5314 | 0.0221 | 0.5535 | | 7,702.2006 | 7,702.2006 | 0.2603 | | 7,708.7075 |
| Worker | 3.6254 | 1.7594 | 26.2851 | 0.0997 | 11.7263 | 0.0696 | 11.7959 | 3.1231 | 0.0640 | 3.1871 | | 9,951.2956 | 9,951.2956 | 0.1646 | | 9,955.4096 |
| **Total** | **4.2063** | **21.7987** | **31.5573** | **0.1726** | **13.5602** | **0.0927** | **13.6529** | **3.6545** | **0.0861** | **3.7406** | | **17,653.4962** | **17,653.4962** | **0.4248** | | **17,664.1171** |

## 3.8 Architectural Coating - 2025

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 17.0781 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.5126 | 3.4365 | 5.4274 | 8.9100e-003 | | 0.1545 | 0.1545 | | 0.1545 | 0.1545 | | 844.3442 | 844.3442 | 0.0461 | | 845.4956 |
| **Total** | **17.5907** | **3.4365** | **5.4274** | **8.9100e-003** | | **0.1545** | **0.1545** | | **0.1545** | **0.1545** | | **844.3442** | **844.3442** | **0.0461** | | **845.4956** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Worker | 0.7673 | 0.3848 | 5.6388 | 0.0207 | 2.4726 | 0.0143 | 2.4870 | 0.6559 | 0.0132 | 0.6690 | | 2,066.9184 | 2,066.9184 | 0.0362 | | 2,067.8220 |
| **Total** | **0.7673** | **0.3848** | **5.6388** | **0.0207** | **2.4726** | **0.0143** | **2.4870** | **0.6559** | **0.0132** | **0.6690** | | **2,066.9184** | **2,066.9184** | **0.0362** | | **2,067.8220** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 17.0781 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.0891 | 0.3863 | 5.4972 | 8.9100e-003 | | 0.0119 | 0.0119 | | 0.0119 | 0.0119 | 0.0000 | 844.3441 | 844.3441 | 0.0461 | | 845.4956 |
| **Total** | **17.1672** | **0.3863** | **5.4972** | **8.9100e-003** | | **0.0119** | **0.0119** | | **0.0119** | **0.0119** | **0.0000** | **844.3441** | **844.3441** | **0.0461** | | **845.4956** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.7673 | 0.3848 | 5.6388 | 0.0207 | 2.3437 | 0.0143 | 2.3580 | 0.6242 | 0.0132 | 0.6374 | | 2,066.9184 | 2,066.9184 | 0.0362 | | 2,067.8220 |
| **Total** | **0.7673** | **0.3848** | **5.6388** | **0.0207** | **2.3437** | **0.0143** | **2.3580** | **0.6242** | **0.0132** | **0.6374** | | **2,066.9184** | **2,066.9184** | **0.0362** | | **2,067.8220** |

## 3.8 Architectural Coating - 2026

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 17.0781 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.5126 | 3.4365 | 5.4274 | 8.9100e-003 | | 0.1545 | 0.1545 | | 0.1545 | 0.1545 | | 844.3442 | 844.3442 | 0.0461 | | 845.4956 |
| **Total** | **17.5907** | **3.4365** | **5.4274** | **8.9100e-003** | | **0.1545** | **0.1545** | | **0.1545** | **0.1545** | | **844.3442** | **844.3442** | **0.0461** | | **845.4956** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.7246 | 0.3517 | 5.2535 | 0.0199 | 2.4726 | 0.0139 | 2.4865 | 0.6559 | 0.0128 | 0.6687 | | 1,988.9376 | 1,988.9376 | 0.0329 | | 1,989.7598 |
| **Total** | **0.7246** | **0.3517** | **5.2535** | **0.0199** | **2.4726** | **0.0139** | **2.4865** | **0.6559** | **0.0128** | **0.6687** | | **1,988.9376** | **1,988.9376** | **0.0329** | | **1,989.7598** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 17.0781 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 0.0891 | 0.3863 | 5.4972 | 8.9100e-003 | | 0.0119 | 0.0119 | | 0.0119 | 0.0119 | 0.0000 | 844.3441 | 844.3441 | 0.0461 | | 845.4956 |
| **Total** | **17.1672** | **0.3863** | **5.4972** | **8.9100e-003** | | **0.0119** | **0.0119** | | **0.0119** | **0.0119** | **0.0000** | **844.3441** | **844.3441** | **0.0461** | | **845.4956** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.7246 | 0.3517 | 5.2535 | 0.0199 | 2.3437 | 0.0139 | 2.3576 | 0.6242 | 0.0128 | 0.6370 | | 1,988.9376 | 1,988.9376 | 0.0329 | | 1,989.7598 |
| **Total** | **0.7246** | **0.3517** | **5.2535** | **0.0199** | **2.3437** | **0.0139** | **2.3576** | **0.6242** | **0.0128** | **0.6370** | | **1,988.9376** | **1,988.9376** | **0.0329** | | **1,989.7598** |

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

Increase Diversity

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

Implement NEV Network

Expand Transit Network

Implement Trip Reduction Program

Transit Subsidy

Employee Vanpool/Shuttle

Provide Riade Sharing Program

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 3.9347 | 14.3421 | 44.2741 | 0.1827 | 18.1932 | 0.1293 | 18.3225 | 4.8659 | 0.1203 | 4.9861 | | 18,469.6211 | 18,469.6211 | 0.5309 | | 18,482.8925 |
| Unmitigated | 4.2212 | 15.8281 | 52.1272 | 0.2187 | 22.0090 | 0.1533 | 22.1623 | 5.8864 | 0.1426 | 6.0290 | | 22,108.0162 | 22,108.0162 | 0.6172 | | 22,123.4454 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| City Park | 0.00 | 0.00 | 0.00 | | |
| Condo/Townhouse High Rise | 600.00 | 538.75 | 428.75 | 2,040,171 | 1,788,465 |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Recreational Swimming Pool | 0.00 | 0.00 | 0.00 | | |
| Retirement Community | 2,280.00 | 964.25 | 926.25 | 6,834,252 | 5,991,077 |
| Total | 2,880.00 | 1,503.00 | 1,355.00 | 8,874,423 | 7,779,542 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C- | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| City Park | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 66 | 28 | 6 |
| Condo/Townhouse High Rise | 16.80 | 7.50 | 8.90 | 31.00 | 15.00 | 54.00 | 86 | 11 | 3 |
| Parking Lot | 9.50 | 7.30 | 7.30 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Recreational Swimming Pool | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 52 | 39 | 9 |
| Retirement Community | 16.80 | 7.50 | 8.90 | 31.00 | 15.00 | 54.00 | 86 | 11 | 3 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| City Park | 0.599857 | 0.035995 | 0.184589 | 0.112732 | 0.013754 | 0.004911 | 0.010789 | 0.025450 | 0.001650 | 0.001625 | 0.005224 | 0.002699 | 0.000725 |
| Condo/Townhouse High Rise | 0.599857 | 0.035995 | 0.184589 | 0.112732 | 0.013754 | 0.004911 | 0.010789 | 0.025450 | 0.001650 | 0.001625 | 0.005224 | 0.002699 | 0.000725 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Parking Lot | 0.599857 | 0.035995 | 0.184589 | 0.112732 | 0.013754 | 0.004911 | 0.010789 | 0.025450 | 0.001650 | 0.001625 | 0.005224 | 0.002699 | 0.000725 |
| Recreational Swimming Pool | 0.599857 | 0.035995 | 0.184589 | 0.112732 | 0.013754 | 0.004911 | 0.010789 | 0.025450 | 0.001650 | 0.001625 | 0.005224 | 0.002699 | 0.000725 |
| Retirement Community | 0.599857 | 0.035995 | 0.184589 | 0.112732 | 0.013754 | 0.004911 | 0.010789 | 0.025450 | 0.001650 | 0.001625 | 0.005224 | 0.002699 | 0.000725 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Percent of Electricity Use Generated with Renewable Energy

Install Energy Efficient Appliances

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.1119 | 0.9564 | 0.4070 | 6.1000e-003 | | 0.0773 | 0.0773 | | 0.0773 | 0.0773 | | 1,220.8706 | 1,220.8706 | 0.0234 | 0.0224 | 1,228.1256 |
| NaturalGas Unmitigated | 0.1750 | 1.4958 | 0.6365 | 9.5500e-003 | | 0.1209 | 0.1209 | | 0.1209 | 0.1209 | | 1,909.5520 | 1,909.5520 | 0.0366 | 0.0350 | 1,920.8995 |

### 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Condo/Townhouse High Rise | 2958.72 | 0.0319 | 0.2727 | 0.1160 | 1.7400e-003 | | 0.0221 | 0.0221 | | 0.0221 | 0.0221 | | 348.0842 | 348.0842 | 6.6700e-003 | 6.3800e-003 | 350.1527 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Retirement Community | 13272.5 | 0.1431 | 1.2232 | 0.5205 | 7.8100e-003 | | 0.0989 | 0.0989 | | 0.0989 | 0.0989 | | 1,561.4678 | 1,561.4678 | 0.0299 | 0.0286 | 1,570.7468 |
| **Total** | | **0.1750** | **1.4958** | **0.6365** | **9.5500e-003** | | **0.1209** | **0.1209** | | **0.1209** | **0.1209** | | **1,909.5520** | **1,909.5520** | **0.0366** | **0.0350** | **1,920.8995** |

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Condo/Townhouse High Rise | 1.96325 | 0.0212 | 0.1809 | 0.0770 | 1.1500e-003 | | 0.0146 | 0.0146 | | 0.0146 | 0.0146 | | 230.9707 | 230.9707 | 4.4300e-003 | 4.2300e-003 | 232.3432 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Retirement Community | 8.41415 | 0.0907 | 0.7754 | 0.3300 | 4.9500e-003 | | 0.0627 | 0.0627 | | 0.0627 | 0.0627 | | 989.8999 | 989.8999 | 0.0190 | 0.0182 | 995.7824 |
| **Total** | | **0.1119** | **0.9564** | **0.4070** | **6.1000e-003** | | **0.0773** | **0.0773** | | **0.0773** | **0.0773** | | **1,220.8706** | **1,220.8706** | **0.0234** | **0.0224** | **1,228.1256** |

## 6.0 Area Detail

### 6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

Use Low VOC Cleaning Supplies

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 13.0990 | 0.4523 | 37.6026 | 1.7000e-003 | | 0.2047 | 0.2047 | | 0.2047 | 0.2047 | 0.0000 | 62.4075 | 62.4075 | 0.0448 | 0.0000 | 63.5268 |
| Unmitigated | 17.3247 | 4.2857 | 51.0674 | 0.0263 | | 0.5749 | 0.5749 | | 0.5749 | 0.5749 | 0.0000 | 4,832.7304 | 4,832.7304 | 0.1765 | 0.0870 | 4,863.0572 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 2.3348 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 13.0673 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.4348 | 3.7158 | 1.5812 | 0.0237 | | 0.3004 | 0.3004 | | 0.3004 | 0.3004 | 0.0000 | 4,743.5294 | 4,743.5294 | 0.0909 | 0.0870 | 4,771.7178 |
| Landscaping | 1.4878 | 0.5699 | 49.4863 | 2.6200e-003 | | 0.2745 | 0.2745 | | 0.2745 | 0.2745 | | 89.2010 | 89.2010 | 0.0855 | | 91.3394 |
| **Total** | **17.3247** | **4.2857** | **51.0675** | **0.0263** | | **0.5749** | **0.5749** | | **0.5749** | **0.5749** | **0.0000** | **4,832.7304** | **4,832.7304** | **0.1765** | **0.0870** | **4,863.0572** |

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.2073 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 12.1025 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 0.7892 | 0.4523 | 37.6026 | 1.7000e-003 | | 0.2047 | 0.2047 | | 0.2047 | 0.2047 | | 62.4075 | 62.4075 | 0.0448 | | 63.5268 |
| **Total** | **13.0990** | **0.4523** | **37.6026** | **1.7000e-003** | | **0.2047** | **0.2047** | | **0.2047** | **0.2047** | **0.0000** | **62.4075** | **62.4075** | **0.0448** | **0.0000** | **63.5268** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

Use Reclaimed Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Turf Reduction

Use Water Efficient Irrigation System

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

## 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

**Boilers**

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

**User Defined Equipment**

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

# Vineyards at Deer Creek - Phase 2

**Contra Costa County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Parking Lot | 260.00 | Space | 2.34 | 104,000.00 | 0 |
| City Park | 56.25 | Acre | 56.25 | 2,450,250.00 | 0 |
| Recreational Swimming Pool | 2.00 | 1000sqft | 0.05 | 2,000.00 | 0 |
| Condo/Townhouse High Rise | 125.00 | Dwelling Unit | 1.95 | 125,000.00 | 358 |
| Retirement Community | 475.00 | Dwelling Unit | 95.00 | 475,000.00 | 1359 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 58 |
| **Climate Zone** | 4 | | | **Operational Year** | 2026 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 146 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - Per PG&E 2018 CRSR

Land Use - Parking: assumed 2 spaces for 125 DUs, plus 10 extra spaces for recreation uses
City Park is open space/ agricultural uses

Construction Phase - Per Construction Questionnaire

Off-road Equipment - Estimated equipment use

Off-road Equipment -

Off-road Equipment - No demolition

Off-road Equipment - Estimated equipment use

Off-road Equipment -

Off-road Equipment - Estimated equipment use

Off-road Equipment -

Off-road Equipment -

Trips and VMT - vendor trips would be lower since city park was used to model the proposed natural open space, informal parkland, low impact trails, etc.

Demolition - No demolition

Grading - Balanced between all phases

Vehicle Trips - Per Fehr and Peers TIA 2019

Woodstoves - Per BAAQMD Regulation 6, Rule 3

Energy Use -

Land Use Change -

Construction Off-road Equipment Mitigation - Per BAAQMD basic and advanced control measure

Mobile Land Use Mitigation - Green building design elements include narrower roadways

Mobile Commute Mitigation -

Area Mitigation - No hearth, low VOC cleaning supplies, low VOC paint, and electric landscape equipment

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblAreaMitigation | UseLowVOCPaintNonresidentialExterior Value | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintNonresidentialInterior Value | 100 | 10 |
| tblAreaMitigation | UseLowVOCPaintParkingCheck | False | True |
| tblAreaMitigation | UseLowVOCPaintParkingValue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintResidentialExteriorValue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintResidentialInteriorValue | 100 | 10 |
| tblConstDustMitigation | CleanPavedRoadPercentReduction | 0 | 6 |
| tblConstDustMitigation | WaterUnpavedRoadMoistureContent | 0 | 12 |
| tblConstDustMitigation | WaterUnpavedRoadVehicleSpeed | 0 | 15 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |

| | | | |
|---|---|---|---|
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 8.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 6.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 4.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 12.00 |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstructionPhase | NumDays | 220.00 | 499.00 |
| tblConstructionPhase | NumDays | 3,100.00 | 577.00 |
| tblConstructionPhase | NumDays | 200.00 | 0.00 |
| tblConstructionPhase | NumDays | 310.00 | 110.00 |

| | | | |
|---|---|---|---|
| tblConstructionPhase | NumDays | 220.00 | 22.00 |
| tblConstructionPhase | NumDays | 120.00 | 10.00 |
| tblFireplaces | NumberGas | 18.75 | 40.00 |
| tblFireplaces | NumberGas | 71.25 | 152.00 |
| tblFireplaces | NumberWood | 21.25 | 0.00 |
| tblFireplaces | NumberWood | 80.75 | 0.00 |
| tblOffRoadEquipment | HorsePower | 203.00 | 247.00 |
| tblOffRoadEquipment | LoadFactor | 0.36 | 0.40 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 4.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 3.00 |
| tblProjectCharacteristics | CO2IntensityFactor | 641.35 | 146 |
| tblTripsAndVMT | VendorTripNumber | 483.00 | 283.00 |
| tblVehicleTrips | HO_TL | 5.70 | 8.90 |
| tblVehicleTrips | HO_TL | 5.70 | 8.90 |
| tblVehicleTrips | HS_TL | 4.80 | 7.50 |
| tblVehicleTrips | HS_TL | 4.80 | 7.50 |
| tblVehicleTrips | HW_TL | 10.80 | 16.80 |
| tblVehicleTrips | HW_TL | 10.80 | 16.80 |
| tblVehicleTrips | ST_TR | 22.75 | 0.00 |
| tblVehicleTrips | ST_TR | 9.10 | 0.00 |
| tblVehicleTrips | SU_TR | 16.74 | 0.00 |
| tblVehicleTrips | SU_TR | 13.60 | 0.00 |
| tblVehicleTrips | WD_TR | 1.89 | 0.00 |
| tblVehicleTrips | WD_TR | 4.18 | 4.80 |
| tblVehicleTrips | WD_TR | 33.82 | 0.00 |
| tblVehicleTrips | WD_TR | 2.40 | 4.80 |
| tblWoodstoves | NumberCatalytic | 2.50 | 0.00 |
| tblWoodstoves | NumberCatalytic | 9.50 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 2.50 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 9.50 | 0.00 |

# 2.0 Emissions Summary

## 2.1 Overall Construction

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2024 | 0.5216 | 4.4709 | 4.5706 | 0.0128 | 1.0826 | 0.1617 | 1.2443 | 0.3673 | 0.1491 | 0.5164 | 0.0000 | 1,148.1321 | 1,148.1321 | 0.2310 | 0.0000 | 1,153.9069 |
| 2025 | 2.9001 | 5.0380 | 7.3420 | 0.0287 | 2.0857 | 0.1014 | 2.1872 | 0.5603 | 0.0963 | 0.6567 | 0.0000 | 2,629.3706 | 2,629.3706 | 0.1320 | 0.0000 | 2,632.6709 |
| 2026 | 3.0783 | 5.0163 | 7.1700 | 0.0284 | 2.1132 | 0.1030 | 2.2162 | 0.5676 | 0.0979 | 0.6655 | 0.0000 | 2,601.8665 | 2,601.8665 | 0.1299 | 0.0000 | 2,605.1130 |
| **Maximum** | **3.0783** | **5.0380** | **7.3420** | **0.0287** | **2.1132** | **0.1617** | **2.2162** | **0.5676** | **0.1491** | **0.6655** | **0.0000** | **2,629.3706** | **2,629.3706** | **0.2310** | **0.0000** | **2,632.6709** |

### Mitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2024 | 0.2328 | 1.0935 | 5.2930 | 0.0128 | 0.6708 | 0.0169 | 0.6877 | 0.2134 | 0.0167 | 0.2301 | 0.0000 | 1,148.1313 | 1,148.1313 | 0.2310 | 0.0000 | 1,153.9061 |
| 2025 | 2.7370 | 3.3835 | 7.5501 | 0.0287 | 1.9799 | 0.0259 | 2.0058 | 0.5344 | 0.0249 | 0.5592 | 0.0000 | 2,629.3701 | 2,629.3701 | 0.1320 | 0.0000 | 2,632.6704 |
| 2026 | 2.9103 | 3.3267 | 7.3788 | 0.0284 | 2.0059 | 0.0258 | 2.0317 | 0.5413 | 0.0248 | 0.5661 | 0.0000 | 2,601.8660 | 2,601.8660 | 0.1299 | 0.0000 | 2,605.1125 |
| **Maximum** | **2.9103** | **3.3835** | **7.5501** | **0.0287** | **2.0059** | **0.0259** | **2.0317** | **0.5413** | **0.0249** | **0.5661** | **0.0000** | **2,629.3701** | **2,629.3701** | **0.2310** | **0.0000** | **2,632.6704** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **9.54** | **46.27** | **-5.97** | **0.00** | **11.83** | **81.27** | **16.33** | **13.79** | **80.68** | **26.28** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---|---|---|---|---|
| 1 | 1-1-2024 | 3-31-2024 | 1.6128 | 0.1849 |
| 2 | 4-1-2024 | 6-30-2024 | 1.5240 | 0.1842 |
| 3 | 7-1-2024 | 9-30-2024 | 0.6140 | 0.1037 |
| 4 | 10-1-2024 | 12-31-2024 | 1.2459 | 0.8703 |
| 5 | 1-1-2025 | 3-31-2025 | 1.7932 | 1.3742 |
| 6 | 4-1-2025 | 6-30-2025 | 2.0376 | 1.5750 |
| 7 | 7-1-2025 | 9-30-2025 | 2.0600 | 1.5923 |
| 8 | 10-1-2025 | 12-31-2025 | 2.0853 | 1.6176 |
| 9 | 1-1-2026 | 3-31-2026 | 2.0145 | 1.5569 |
| 10 | 4-1-2026 | 6-30-2026 | 2.0132 | 1.5506 |
| 11 | 7-1-2026 | 9-30-2026 | 2.0354 | 1.5677 |
| | | Highest | 2.0853 | 1.6176 |

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 2.9472 | 0.0720 | 4.4626 | 3.7000e-004 | | 0.0264 | 0.0264 | | 0.0264 | 0.0264 | 0.0000 | 31.2521 | 31.2521 | 7.4400e-003 | 4.4000e-004 | 31.5691 |
| Energy | 0.0320 | 0.2730 | 0.1162 | 1.7400e-003 | | 0.0221 | 0.0221 | | 0.0221 | 0.0221 | 0.0000 | 497.6812 | 497.6812 | 0.0421 | 0.0133 | 502.6845 |
| Mobile | 0.5585 | 2.5489 | 7.4284 | 0.0318 | 3.3125 | 0.0239 | 3.3364 | 0.8885 | 0.0222 | 0.9107 | 0.0000 | 2,921.5518 | 2,921.5518 | 0.0854 | 0.0000 | 2,923.6857 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 59.3221 | 0.0000 | 59.3221 | 3.5058 | 0.0000 | 146.9679 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 12.4398 | 35.3145 | 47.7542 | 1.2847 | 0.0316 | 89.2944 |
| **Total** | **3.5377** | **2.8939** | **12.0071** | **0.0339** | **3.3125** | **0.0723** | **3.3848** | **0.8885** | **0.0707** | **0.9592** | **71.7618** | **3,485.7996** | **3,557.5614** | **4.9255** | **0.0453** | **3,694.2017** |

### Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 2.3176 | 0.0407 | 3.3842 | 1.5000e-004 | | 0.0184 | 0.0184 | | 0.0184 | 0.0184 | 0.0000 | 5.0954 | 5.0954 | 3.6600e-003 | 0.0000 | 5.1868 |
| Energy | 0.0204 | 0.1745 | 0.0743 | 1.1100e-003 | | 0.0141 | 0.0141 | | 0.0141 | 0.0141 | 0.0000 | 202.1288 | 202.1288 | 3.8700e-003 | 3.7100e-003 | 203.3300 |
| Mobile | 0.5151 | 2.3026 | 6.3740 | 0.0266 | 2.7382 | 0.0202 | 2.7584 | 0.7345 | 0.0187 | 0.7532 | 0.0000 | 2,441.4571 | 2,441.4571 | 0.0738 | 0.0000 | 2,443.3012 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 14.8305 | 0.0000 | 14.8305 | 0.8765 | 0.0000 | 36.7420 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 9.9518 | 27.2139 | 37.1657 | 1.0276 | 0.0253 | 70.3800 |
| **Total** | **2.8530** | **2.5178** | **9.8325** | **0.0279** | **2.7382** | **0.0527** | **2.7909** | **0.7345** | **0.0513** | **0.7857** | **24.7823** | **2,675.8952** | **2,700.6775** | **1.9853** | **0.0290** | **2,758.9399** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **19.35** | **13.00** | **18.11** | **17.91** | **17.34** | **27.17** | **17.55** | **17.34** | **27.44** | **18.08** | **65.47** | **23.23** | **24.09** | **59.69** | **36.10** | **25.32** |

## 2.3 Vegetation

**Vegetation**

| | CO2e |
|---|---|
| Category | MT |
| Vegetation Land Change | -637.8800 |
| **Total** | **-637.8800** |

## 3.0 Construction Detail

## Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Demolition | Demolition | 1/1/2024 | 12/31/2023 | 5 | 0 | |
| 2 | Site Preparation | Site Preparation | 1/1/2024 | 1/12/2024 | 5 | 10 | |
| 3 | Grading | Grading | 1/13/2024 | 6/14/2024 | 5 | 110 | |
| 4 | Infrastructure Improvements | Trenching | 6/15/2024 | 9/16/2024 | 5 | 66 | |
| 5 | Paving | Paving | 9/17/2024 | 10/16/2024 | 5 | 22 | |
| 6 | Building Construction | Building Construction | 10/16/2024 | 12/31/2026 | 5 | 577 | |
| 7 | Architectural Coating | Architectural Coating | 2/1/2025 | 12/31/2026 | 5 | 499 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 495**

**Acres of Paving: 2.34**

**Residential Indoor: 1,215,000; Residential Outdoor: 405,000; Non-Residential Indoor: 4,500; Non-Residential Outdoor: 1,500; Striped**

## OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Demolition | Excavators | 3 | 8.00 | 158 | 0.38 |
| Demolition | Rubber Tired Dozers | 2 | 8.00 | 247 | 0.40 |
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 4 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |

| | | | | | |
|---|---|---|---|---|---|
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 3 | 6.00 | 78 | 0.48 |
| Infrastructure Improvements | Excavators | 3 | 8.00 | 158 | 0.38 |
| Infrastructure Improvements | Rubber Tired Loaders | 3 | 8.00 | 247 | 0.40 |
| Infrastructure Improvements | Tractors/Loaders/Backhoes | 3 | 8.00 | 97 | 0.37 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Demolition | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 10 | 25.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 1,506.00 | 283.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 3 | 301.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Infrastructure Improvements | 9 | 23.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

## 3.3 Site Preparation - 2024

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.0903 | 0.0000 | 0.0903 | 0.0497 | 0.0000 | 0.0497 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0133 | 0.1359 | 0.0917 | 1.9000e-004 | | 6.1500e-003 | 6.1500e-003 | | 5.6600e-003 | 5.6600e-003 | 0.0000 | 16.7285 | 16.7285 | 5.4100e-003 | 0.0000 | 16.8638 |
| **Total** | **0.0133** | **0.1359** | **0.0917** | **1.9000e-004** | **0.0903** | **6.1500e-003** | **0.0965** | **0.0497** | **5.6600e-003** | **0.0553** | **0.0000** | **16.7285** | **16.7285** | **5.4100e-003** | **0.0000** | **16.8638** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 2.3000e-004 | 1.4000e-004 | 1.6100e-003 | 1.0000e-005 | 7.1000e-004 | 0.0000 | 7.2000e-004 | 1.9000e-004 | 0.0000 | 1.9000e-004 | 0.0000 | 0.5365 | 0.5365 | 1.0000e-005 | 0.0000 | 0.5368 |
| **Total** | **2.3000e-004** | **1.4000e-004** | **1.6100e-003** | **1.0000e-005** | **7.1000e-004** | **0.0000** | **7.2000e-004** | **1.9000e-004** | **0.0000** | **1.9000e-004** | **0.0000** | **0.5365** | **0.5365** | **1.0000e-005** | **0.0000** | **0.5368** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.0386 | 0.0000 | 0.0386 | 0.0212 | 0.0000 | 0.0212 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 2.3300e-003 | 0.0101 | 0.1043 | 1.9000e-004 | | 3.1000e-004 | 3.1000e-004 | | 3.1000e-004 | 3.1000e-004 | 0.0000 | 16.7285 | 16.7285 | 5.4100e-003 | 0.0000 | 16.8638 |
| **Total** | **2.3300e-003** | **0.0101** | **0.1043** | **1.9000e-004** | **0.0386** | **3.1000e-004** | **0.0389** | **0.0212** | **3.1000e-004** | **0.0215** | **0.0000** | **16.7285** | **16.7285** | **5.4100e-003** | **0.0000** | **16.8638** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 2.3000e-004 | 1.4000e-004 | 1.6100e-003 | 1.0000e-005 | 6.8000e-004 | 0.0000 | 6.8000e-004 | 1.8000e-004 | 0.0000 | 1.8000e-004 | 0.0000 | 0.5365 | 0.5365 | 1.0000e-005 | 0.0000 | 0.5368 |
| **Total** | **2.3000e-004** | **1.4000e-004** | **1.6100e-003** | **1.0000e-005** | **6.8000e-004** | **0.0000** | **6.8000e-004** | **1.8000e-004** | **0.0000** | **1.8000e-004** | **0.0000** | **0.5365** | **0.5365** | **1.0000e-005** | **0.0000** | **0.5368** |

## 3.4 Grading - 2024

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.5937 | 0.0000 | 0.5937 | 0.2104 | 0.0000 | 0.2104 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.2606 | 2.6273 | 2.1811 | 5.0800e-003 | | 0.1069 | 0.1069 | | 0.0984 | 0.0984 | 0.0000 | 446.4591 | 446.4591 | 0.1444 | 0.0000 | 450.0690 |
| **Total** | **0.2606** | **2.6273** | **2.1811** | **5.0800e-003** | **0.5937** | **0.1069** | **0.7006** | **0.2104** | **0.0984** | **0.3088** | **0.0000** | **446.4591** | **446.4591** | **0.1444** | **0.0000** | **450.0690** |

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 3.4500e-003 | 2.1600e-003 | 0.0246 | 9.0000e-005 | 0.0109 | 7.0000e-005 | 0.0110 | 2.9000e-003 | 6.0000e-005 | 2.9600e-003 | 0.0000 | 8.1972 | 8.1972 | 1.5000e-004 | 0.0000 | 8.2010 |
| **Total** | **3.4500e-003** | **2.1600e-003** | **0.0246** | **9.0000e-005** | **0.0109** | **7.0000e-005** | **0.0110** | **2.9000e-003** | **6.0000e-005** | **2.9600e-003** | **0.0000** | **8.1972** | **8.1972** | **1.5000e-004** | **0.0000** | **8.2010** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.2538 | 0.0000 | 0.2538 | 0.0900 | 0.0000 | 0.0900 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0624 | 0.2704 | 2.5668 | 5.0800e-003 | | 8.3200e-003 | 8.3200e-003 | | 8.3200e-003 | 8.3200e-003 | 0.0000 | 446.4586 | 446.4586 | 0.1444 | 0.0000 | 450.0685 |
| **Total** | **0.0624** | **0.2704** | **2.5668** | **5.0800e-003** | **0.2538** | **8.3200e-003** | **0.2621** | **0.0900** | **8.3200e-003** | **0.0983** | **0.0000** | **446.4586** | **446.4586** | **0.1444** | **0.0000** | **450.0685** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 3.4500e-003 | 2.1600e-003 | 0.0246 | 9.0000e-005 | 0.0103 | 7.0000e-005 | 0.0104 | 2.7600e-003 | 6.0000e-005 | 2.8200e-003 | 0.0000 | 8.1972 | 8.1972 | 1.5000e-004 | 0.0000 | 8.2010 |
| **Total** | **3.4500e-003** | **2.1600e-003** | **0.0246** | **9.0000e-005** | **0.0103** | **7.0000e-005** | **0.0104** | **2.7600e-003** | **6.0000e-005** | **2.8200e-003** | **0.0000** | **8.1972** | **8.1972** | **1.5000e-004** | **0.0000** | **8.2010** |

## 3.5 Infrastructure Improvements - 2024

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0661 | 0.5938 | 0.7448 | 1.6600e-003 | | 0.0238 | 0.0238 | | 0.0219 | 0.0219 | 0.0000 | 145.5529 | 145.5529 | 0.0471 | 0.0000 | 146.7298 |
| **Total** | **0.0661** | **0.5938** | **0.7448** | **1.6600e-003** | | **0.0238** | **0.0238** | | **0.0219** | **0.0219** | **0.0000** | **145.5529** | **145.5529** | **0.0471** | **0.0000** | **146.7298** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.9000e-003 | 1.1900e-003 | 0.0136 | 5.0000e-005 | 6.0200e-003 | 4.0000e-005 | 6.0600e-003 | 1.6000e-003 | 3.0000e-005 | 1.6300e-003 | 0.0000 | 4.5249 | 4.5249 | 8.0000e-005 | 0.0000 | 4.5269 |
| **Total** | **1.9000e-003** | **1.1900e-003** | **0.0136** | **5.0000e-005** | **6.0200e-003** | **4.0000e-005** | **6.0600e-003** | **1.6000e-003** | **3.0000e-005** | **1.6300e-003** | **0.0000** | **4.5249** | **4.5249** | **8.0000e-005** | **0.0000** | **4.5269** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0204 | 0.0884 | 0.9993 | 1.6600e-003 | | 2.7200e-003 | 2.7200e-003 | | 2.7200e-003 | 2.7200e-003 | 0.0000 | 145.5527 | 145.5527 | 0.0471 | 0.0000 | 146.7296 |
| **Total** | **0.0204** | **0.0884** | **0.9993** | **1.6600e-003** | | **2.7200e-003** | **2.7200e-003** | | **2.7200e-003** | **2.7200e-003** | **0.0000** | **145.5527** | **145.5527** | **0.0471** | **0.0000** | **146.7296** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.9000e-003 | 1.1900e-003 | 0.0136 | 5.0000e-005 | 5.7100e-003 | 4.0000e-005 | 5.7400e-003 | 1.5200e-003 | 3.0000e-005 | 1.5600e-003 | 0.0000 | 4.5249 | 4.5249 | 8.0000e-005 | 0.0000 | 4.5269 |
| **Total** | **1.9000e-003** | **1.1900e-003** | **0.0136** | **5.0000e-005** | **5.7100e-003** | **4.0000e-005** | **5.7400e-003** | **1.5200e-003** | **3.0000e-005** | **1.5600e-003** | **0.0000** | **4.5249** | **4.5249** | **8.0000e-005** | **0.0000** | **4.5269** |

## 3.6 Paving - 2024

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 0.0109 | 0.1048 | 0.1609 | 2.5000e-004 | | 5.1500e-003 | 5.1500e-003 | | 4.7400e-003 | 4.7400e-003 | 0.0000 | 22.0292 | 22.0292 | 7.1200e-003 | 0.0000 | 22.2073 |
| Paving | 3.0700e-003 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0139** | **0.1048** | **0.1609** | **2.5000e-004** | | **5.1500e-003** | **5.1500e-003** | | **4.7400e-003** | **4.7400e-003** | **0.0000** | **22.0292** | **22.0292** | **7.1200e-003** | **0.0000** | **22.2073** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 4.1000e-004 | 2.6000e-004 | 2.9500e-003 | 1.0000e-005 | 1.3100e-003 | 1.0000e-005 | 1.3200e-003 | 3.5000e-004 | 1.0000e-005 | 3.6000e-004 | 0.0000 | 0.9837 | 0.9837 | 2.0000e-005 | 0.0000 | 0.9841 |
| **Total** | **4.1000e-004** | **2.6000e-004** | **2.9500e-003** | **1.0000e-005** | **1.3100e-003** | **1.0000e-005** | **1.3200e-003** | **3.5000e-004** | **1.0000e-005** | **3.6000e-004** | **0.0000** | **0.9837** | **0.9837** | **2.0000e-005** | **0.0000** | **0.9841** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 3.0900e-003 | 0.0134 | 0.1903 | 2.5000e-004 | | 4.1000e-004 | 4.1000e-004 | | 4.1000e-004 | 4.1000e-004 | 0.0000 | 22.0292 | 22.0292 | 7.1200e-003 | 0.0000 | 22.2073 |
| Paving | 3.0700e-003 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **6.1600e-003** | **0.0134** | **0.1903** | **2.5000e-004** | | **4.1000e-004** | **4.1000e-004** | | **4.1000e-004** | **4.1000e-004** | **0.0000** | **22.0292** | **22.0292** | **7.1200e-003** | **0.0000** | **22.2073** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 4.1000e-004 | 2.6000e-004 | 2.9500e-003 | 1.0000e-005 | 1.2400e-003 | 1.0000e-005 | 1.2500e-003 | 3.3000e-004 | 1.0000e-005 | 3.4000e-004 | 0.0000 | 0.9837 | 0.9837 | 2.0000e-005 | 0.0000 | 0.9841 |
| **Total** | **4.1000e-004** | **2.6000e-004** | **2.9500e-003** | **1.0000e-005** | **1.2400e-003** | **1.0000e-005** | **1.2500e-003** | **3.3000e-004** | **1.0000e-005** | **3.4000e-004** | **0.0000** | **0.9837** | **0.9837** | **2.0000e-005** | **0.0000** | **0.9841** |

## 3.7 Building Construction - 2024

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0405 | 0.3697 | 0.4446 | 7.4000e-004 | | 0.0169 | 0.0169 | | 0.0159 | 0.0159 | 0.0000 | 63.7585 | 63.7585 | 0.0151 | 0.0000 | 64.1354 |
| **Total** | **0.0405** | **0.3697** | **0.4446** | **7.4000e-004** | | **0.0169** | **0.0169** | | **0.0159** | **0.0159** | **0.0000** | **63.7585** | **63.7585** | **0.0151** | **0.0000** | **64.1354** |

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0173 | 0.5707 | 0.1638 | 2.0100e-003 | 0.0512 | 6.8000e-004 | 0.0519 | 0.0148 | 6.5000e-004 | 0.0154 | 0.0000 | 192.4624 | 192.4624 | 7.0900e-003 | 0.0000 | 192.6397 |
| Worker | 0.1039 | 0.0651 | 0.7410 | 2.7300e-003 | 0.3285 | 2.0000e-003 | 0.3305 | 0.0874 | 1.8400e-003 | 0.0892 | 0.0000 | 246.8992 | 246.8992 | 4.5600e-003 | 0.0000 | 247.0132 |
| **Total** | **0.1212** | **0.6358** | **0.9048** | **4.7400e-003** | **0.3797** | **2.6800e-003** | **0.3823** | **0.1022** | **2.4900e-003** | **0.1046** | **0.0000** | **439.3616** | **439.3616** | **0.0117** | **0.0000** | **439.6528** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0143 | 0.0718 | 0.4847 | 7.4000e-004 | | 2.3500e-003 | 2.3500e-003 | | 2.3500e-003 | 2.3500e-003 | 0.0000 | 63.7584 | 63.7584 | 0.0151 | 0.0000 | 64.1354 |
| **Total** | **0.0143** | **0.0718** | **0.4847** | **7.4000e-004** | | **2.3500e-003** | **2.3500e-003** | | **2.3500e-003** | **2.3500e-003** | **0.0000** | **63.7584** | **63.7584** | **0.0151** | **0.0000** | **64.1354** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0173 | 0.5707 | 0.1638 | 2.0100e-003 | 0.0490 | 6.8000e-004 | 0.0497 | 0.0143 | 6.5000e-004 | 0.0149 | 0.0000 | 192.4624 | 192.4624 | 7.0900e-003 | 0.0000 | 192.6397 |
| Worker | 0.1039 | 0.0651 | 0.7410 | 2.7300e-003 | 0.3114 | 2.0000e-003 | 0.3134 | 0.0832 | 1.8400e-003 | 0.0850 | 0.0000 | 246.8992 | 246.8992 | 4.5600e-003 | 0.0000 | 247.0132 |
| **Total** | **0.1212** | **0.6358** | **0.9048** | **4.7400e-003** | **0.3605** | **2.6800e-003** | **0.3631** | **0.0975** | **2.4900e-003** | **0.0999** | **0.0000** | **439.3616** | **439.3616** | **0.0117** | **0.0000** | **439.6528** |

## 3.7 Building Construction - 2025

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1785 | 1.6273 | 2.0991 | 3.5200e-003 | | 0.0689 | 0.0689 | | 0.0648 | 0.0648 | 0.0000 | 302.6549 | 302.6549 | 0.0711 | 0.0000 | 304.4335 |
| **Total** | **0.1785** | **1.6273** | **2.0991** | **3.5200e-003** | | **0.0689** | **0.0689** | | **0.0648** | **0.0648** | **0.0000** | **302.6549** | **302.6549** | **0.0711** | **0.0000** | **304.4335** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0797 | 2.6705 | 0.7520 | 9.4700e-003 | 0.2429 | 3.1400e-003 | 0.2461 | 0.0702 | 3.0000e-003 | 0.0732 | 0.0000 | 907.5418 | 907.5418 | 0.0328 | 0.0000 | 908.3606 |
| Worker | 0.4641 | 0.2802 | 3.2523 | 0.0124 | 1.5587 | 9.3500e-003 | 1.5681 | 0.4146 | 8.6100e-003 | 0.4232 | 0.0000 | 1,123.2970 | 1,123.2970 | 0.0196 | 0.0000 | 1,123.7863 |
| **Total** | **0.5438** | **2.9507** | **4.0044** | **0.0219** | **1.8017** | **0.0125** | **1.8141** | **0.4848** | **0.0116** | **0.4964** | **0.0000** | **2,030.8388** | **2,030.8388** | **0.0523** | **0.0000** | **2,032.1469** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 0.0658 | 0.3358 | 2.2988 | 3.5200e-003 | | 0.0103 | 0.0103 | | 0.0103 | 0.0103 | 0.0000 | 302.6545 | 302.6545 | 0.0711 | 0.0000 | 304.4331 |
| **Total** | **0.0658** | **0.3358** | **2.2988** | **3.5200e-003** | | **0.0103** | **0.0103** | | **0.0103** | **0.0103** | **0.0000** | **302.6545** | **302.6545** | **0.0711** | **0.0000** | **304.4331** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0797 | 2.6705 | 0.7520 | 9.4700e-003 | 0.2327 | 3.1400e-003 | 0.2358 | 0.0677 | 3.0000e-003 | 0.0707 | 0.0000 | 907.5418 | 907.5418 | 0.0328 | 0.0000 | 908.3606 |
| Worker | 0.4641 | 0.2802 | 3.2523 | 0.0124 | 1.4779 | 9.3500e-003 | 1.4872 | 0.3947 | 8.6100e-003 | 0.4033 | 0.0000 | 1,123.2970 | 1,123.2970 | 0.0196 | 0.0000 | 1,123.7863 |
| **Total** | **0.5438** | **2.9507** | **4.0044** | **0.0219** | **1.7106** | **0.0125** | **1.7230** | **0.4624** | **0.0116** | **0.4740** | **0.0000** | **2,030.8388** | **2,030.8388** | **0.0523** | **0.0000** | **2,032.1469** |

## 3.7 Building Construction - 2026

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1785 | 1.6273 | 2.0991 | 3.5200e-003 | | 0.0689 | 0.0689 | | 0.0648 | 0.0648 | 0.0000 | 302.6549 | 302.6549 | 0.0711 | 0.0000 | 304.4335 |
| **Total** | **0.1785** | **1.6273** | **2.0991** | **3.5200e-003** | | **0.0689** | **0.0689** | | **0.0648** | **0.0648** | **0.0000** | **302.6549** | **302.6549** | **0.0711** | **0.0000** | **304.4335** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0776 | 2.6334 | 0.7331 | 9.4100e-003 | 0.2429 | 3.0600e-003 | 0.2460 | 0.0702 | 2.9200e-003 | 0.0732 | 0.0000 | 902.2828 | 902.2828 | 0.0319 | 0.0000 | 903.0807 |
| Worker | 0.4389 | 0.2560 | 3.0250 | 0.0119 | 1.5587 | 9.0800e-003 | 1.5678 | 0.4146 | 8.3500e-003 | 0.4229 | 0.0000 | 1,080.9270 | 1,080.9270 | 0.0178 | 0.0000 | 1,081.3718 |
| **Total** | **0.5165** | **2.8894** | **3.7581** | **0.0214** | **1.8017** | **0.0121** | **1.8138** | **0.4848** | **0.0113** | **0.4961** | **0.0000** | **1,983.2098** | **1,983.2098** | **0.0497** | **0.0000** | **1,984.4525** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0658 | 0.3358 | 2.2988 | 3.5200e-003 | | 0.0103 | 0.0103 | | 0.0103 | 0.0103 | 0.0000 | 302.6545 | 302.6545 | 0.0711 | 0.0000 | 304.4331 |
| **Total** | **0.0658** | **0.3358** | **2.2988** | **3.5200e-003** | | **0.0103** | **0.0103** | | **0.0103** | **0.0103** | **0.0000** | **302.6545** | **302.6545** | **0.0711** | **0.0000** | **304.4331** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0776 | 2.6334 | 0.7331 | 9.4100e-003 | 0.2327 | 3.0600e-003 | 0.2357 | 0.0677 | 2.9200e-003 | 0.0706 | 0.0000 | 902.2828 | 902.2828 | 0.0319 | 0.0000 | 903.0807 |
| Worker | 0.4389 | 0.2560 | 3.0250 | 0.0119 | 1.4779 | 9.0800e-003 | 1.4870 | 0.3947 | 8.3500e-003 | 0.4031 | 0.0000 | 1,080.9270 | 1,080.9270 | 0.0178 | 0.0000 | 1,081.3718 |
| **Total** | **0.5165** | **2.8894** | **3.7581** | **0.0214** | **1.7106** | **0.0121** | **1.7227** | **0.4624** | **0.0113** | **0.4737** | **0.0000** | **1,983.2098** | **1,983.2098** | **0.0497** | **0.0000** | **1,984.4525** |

## 3.8 Architectural Coating - 2025

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 2.0323 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0610 | 0.4090 | 0.6459 | 1.0600e-003 | | 0.0184 | 0.0184 | | 0.0184 | 0.0184 | 0.0000 | 91.1512 | 91.1512 | 4.9700e-003 | 0.0000 | 91.2755 |
| **Total** | **2.0933** | **0.4090** | **0.6459** | **1.0600e-003** | | **0.0184** | **0.0184** | | **0.0184** | **0.0184** | **0.0000** | **91.1512** | **91.1512** | **4.9700e-003** | **0.0000** | **91.2755** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0846 | 0.0511 | 0.5928 | 2.2600e-003 | 0.2841 | 1.7000e-003 | 0.2858 | 0.0756 | 1.5700e-003 | 0.0771 | 0.0000 | 204.7258 | 204.7258 | 3.5700e-003 | 0.0000 | 204.8150 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | **0.0846** | **0.0511** | **0.5928** | **2.2600e-003** | **0.2841** | **1.7000e-003** | **0.2858** | **0.0756** | **1.5700e-003** | **0.0771** | **0.0000** | **204.7258** | **204.7258** | **3.5700e-003** | **0.0000** | **204.8150** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 2.0323 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0106 | 0.0460 | 0.6542 | 1.0600e-003 | | 1.4100e-003 | 1.4100e-003 | | 1.4100e-003 | 1.4100e-003 | 0.0000 | 91.1511 | 91.1511 | 4.9700e-003 | 0.0000 | 91.2754 |
| **Total** | **2.0429** | **0.0460** | **0.6542** | **1.0600e-003** | | **1.4100e-003** | **1.4100e-003** | | **1.4100e-003** | **1.4100e-003** | **0.0000** | **91.1511** | **91.1511** | **4.9700e-003** | **0.0000** | **91.2754** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0846 | 0.0511 | 0.5928 | 2.2600e-003 | 0.2694 | 1.7000e-003 | 0.2711 | 0.0719 | 1.5700e-003 | 0.0735 | 0.0000 | 204.7258 | 204.7258 | 3.5700e-003 | 0.0000 | 204.8150 |
| **Total** | **0.0846** | **0.0511** | **0.5928** | **2.2600e-003** | **0.2694** | **1.7000e-003** | **0.2711** | **0.0719** | **1.5700e-003** | **0.0735** | **0.0000** | **204.7258** | **204.7258** | **3.5700e-003** | **0.0000** | **204.8150** |

## 3.8 Architectural Coating - 2026

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 2.2287 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0669 | 0.4485 | 0.7083 | 1.1600e-003 | | 0.0202 | 0.0202 | | 0.0202 | 0.0202 | 0.0000 | 99.9599 | 99.9599 | 5.4500e-003 | 0.0000 | 100.0962 |
| **Total** | **2.2956** | **0.4485** | **0.7083** | **1.1600e-003** | | **0.0202** | **0.0202** | | **0.0202** | **0.0202** | **0.0000** | **99.9599** | **99.9599** | **5.4500e-003** | **0.0000** | **100.0962** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0877 | 0.0512 | 0.6046 | 2.3900e-003 | 0.3115 | 1.8100e-003 | 0.3134 | 0.0829 | 1.6700e-003 | 0.0845 | 0.0000 | 216.0419 | 216.0419 | 3.5600e-003 | 0.0000 | 216.1308 |
| **Total** | **0.0877** | **0.0512** | **0.6046** | **2.3900e-003** | **0.3115** | **1.8100e-003** | **0.3134** | **0.0829** | **1.6700e-003** | **0.0845** | **0.0000** | **216.0419** | **216.0419** | **3.5600e-003** | **0.0000** | **216.1308** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 2.2287 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0116 | 0.0504 | 0.7174 | 1.1600e-003 | | 1.5500e-003 | 1.5500e-003 | | 1.5500e-003 | 1.5500e-003 | 0.0000 | 99.9598 | 99.9598 | 5.4500e-003 | 0.0000 | 100.0961 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | **2.2403** | **0.0504** | **0.7174** | **1.1600e-003** | | **1.5500e-003** | **1.5500e-003** | | **1.5500e-003** | **1.5500e-003** | **0.0000** | **99.9598** | **99.9598** | **5.4500e-003** | **0.0000** | **100.0961** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0877 | 0.0512 | 0.6046 | 2.3900e-003 | 0.2954 | 1.8100e-003 | 0.2972 | 0.0789 | 1.6700e-003 | 0.0806 | 0.0000 | 216.0419 | 216.0419 | 3.5600e-003 | 0.0000 | 216.1308 |
| **Total** | **0.0877** | **0.0512** | **0.6046** | **2.3900e-003** | **0.2954** | **1.8100e-003** | **0.2972** | **0.0789** | **1.6700e-003** | **0.0806** | **0.0000** | **216.0419** | **216.0419** | **3.5600e-003** | **0.0000** | **216.1308** |

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

Increase Diversity

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

Implement NEV Network

Expand Transit Network

Implement Trip Reduction Program

Transit Subsidy

Employee Vanpool/Shuttle

Provide Riade Sharing Program

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.5151 | 2.3026 | 6.3740 | 0.0266 | 2.7382 | 0.0202 | 2.7584 | 0.7345 | 0.0187 | 0.7532 | 0.0000 | 2,441.4571 | 2,441.4571 | 0.0738 | 0.0000 | 2,443.3012 |
| Unmitigated | 0.5585 | 2.5489 | 7.4284 | 0.0318 | 3.3125 | 0.0239 | 3.3364 | 0.8885 | 0.0222 | 0.9107 | 0.0000 | 2,921.5518 | 2,921.5518 | 0.0854 | 0.0000 | 2,923.6857 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| City Park | 0.00 | 0.00 | 0.00 | | |
| Condo/Townhouse High Rise | 600.00 | 538.75 | 428.75 | 2,040,171 | 1,788,465 |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Recreational Swimming Pool | 0.00 | 0.00 | 0.00 | | |
| Retirement Community | 2,280.00 | 964.25 | 926.25 | 6,834,252 | 5,991,077 |
| Total | 2,880.00 | 1,503.00 | 1,355.00 | 8,874,423 | 7,779,542 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| City Park | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 66 | 28 | 6 |
| Condo/Townhouse High Rise | 16.80 | 7.50 | 8.90 | 31.00 | 15.00 | 54.00 | 86 | 11 | 3 |
| Parking Lot | 9.50 | 7.30 | 7.30 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Recreational Swimming Pool | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 52 | 39 | 9 |
| Retirement Community | 16.80 | 7.50 | 8.90 | 31.00 | 15.00 | 54.00 | 86 | 11 | 3 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| City Park | 0.599857 | 0.035995 | 0.184589 | 0.112732 | 0.013754 | 0.004911 | 0.010789 | 0.025450 | 0.001650 | 0.001625 | 0.005224 | 0.002699 | 0.000725 |
| Condo/Townhouse High Rise | 0.599857 | 0.035995 | 0.184589 | 0.112732 | 0.013754 | 0.004911 | 0.010789 | 0.025450 | 0.001650 | 0.001625 | 0.005224 | 0.002699 | 0.000725 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Parking Lot | 0.599857 | 0.035995 | 0.184589 | 0.112732 | 0.013754 | 0.004911 | 0.010789 | 0.025450 | 0.001650 | 0.001625 | 0.005224 | 0.002699 | 0.000725 |
| Recreational Swimming Pool | 0.599857 | 0.035995 | 0.184589 | 0.112732 | 0.013754 | 0.004911 | 0.010789 | 0.025450 | 0.001650 | 0.001625 | 0.005224 | 0.002699 | 0.000725 |
| Retirement Community | 0.599857 | 0.035995 | 0.184589 | 0.112732 | 0.013754 | 0.004911 | 0.010789 | 0.025450 | 0.001650 | 0.001625 | 0.005224 | 0.002699 | 0.000725 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Percent of Electricity Use Generated with Renewable Energy

Install Energy Efficient Appliances

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Electricity Mitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 181.5334 | 181.5334 | 0.0361 | 7.4600e-003 | 184.6580 |
| NaturalGas Mitigated | 0.0204 | 0.1745 | 0.0743 | 1.1100e-003 | | 0.0141 | 0.0141 | | 0.0141 | 0.0141 | 0.0000 | 202.1288 | 202.1288 | 3.8700e-003 | 3.7100e-003 | 203.3300 |
| NaturalGas Unmitigated | 0.0320 | 0.2730 | 0.1162 | 1.7400e-003 | | 0.0221 | 0.0221 | | 0.0221 | 0.0221 | 0.0000 | 316.1478 | 316.1478 | 6.0600e-003 | 5.8000e-003 | 318.0265 |

### 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Condo/Townhouse High Rise | 1.07993e+006 | 5.8200e-003 | 0.0498 | 0.0212 | 3.2000e-004 | | 4.0200e-003 | 4.0200e-003 | | 4.0200e-003 | 4.0200e-003 | 0.0000 | 57.6292 | 57.6292 | 1.1000e-003 | 1.0600e-003 | 57.9717 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Retirement Community | 4.84445e+006 | 0.0261 | 0.2232 | 0.0950 | 1.4200e-003 | | 0.0181 | 0.0181 | | 0.0181 | 0.0181 | 0.0000 | 258.5185 | 258.5185 | 4.9500e-003 | 4.7400e-003 | 260.0548 |
| **Total** | | **0.0319** | **0.2730** | **0.1162** | **1.7400e-003** | | **0.0221** | **0.0221** | | **0.0221** | **0.0221** | **0.0000** | **316.1477** | **316.1477** | **6.0500e-003** | **5.8000e-003** | **318.0265** |

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Condo/Townhouse High Rise | 716586 | 3.8600e-003 | 0.0330 | 0.0141 | 2.1000e-004 | | 2.6700e-003 | 2.6700e-003 | | 2.6700e-003 | 2.6700e-003 | 0.0000 | 38.2398 | 38.2398 | 7.3000e-004 | 7.0000e-004 | 38.4670 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Retirement Community | 3.07116e+006 | 0.0166 | 0.1415 | 0.0602 | 9.0000e-004 | | 0.0114 | 0.0114 | | 0.0114 | 0.0114 | 0.0000 | 163.8890 | 163.8890 | 3.1400e-003 | 3.0000e-003 | 164.8629 |
| **Total** | | **0.0204** | **0.1745** | **0.0743** | **1.1100e-003** | | **0.0141** | **0.0141** | | **0.0141** | **0.0141** | **0.0000** | **202.1288** | **202.1288** | **3.8700e-003** | **3.7000e-003** | **203.3300** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|

| Land Use | kWh/yr | MT/yr | | | |
|---|---|---|---|---|---|
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Condo/Townhouse High Rise | 548501 | 36.3242 | 7.2200e-003 | 1.4900e-003 | 36.9494 |
| Parking Lot | 36400 | 2.4106 | 4.8000e-004 | 1.0000e-004 | 2.4521 |
| Recreational Swimming Pool | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Retirement Community | 2.15628e+006 | 142.7986 | 0.0284 | 5.8700e-003 | 145.2565 |
| **Total** | | **181.5334** | **0.0361** | **7.4600e-003** | **184.6580** |

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Condo/Townhouse High Rise | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Retirement Community | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

Use Low VOC Cleaning Supplies

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 2.3176 | 0.0407 | 3.3842 | 1.5000e-004 | | 0.0184 | 0.0184 | | 0.0184 | 0.0184 | 0.0000 | 5.0954 | 5.0954 | 3.6600e-003 | 0.0000 | 5.1868 |
| Unmitigated | 2.9472 | 0.0720 | 4.4626 | 3.7000e-004 | | 0.0264 | 0.0264 | | 0.0264 | 0.0264 | 0.0000 | 31.2521 | 31.2521 | 7.4400e-003 | 4.4000e-004 | 31.5691 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.4261 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 2.3848 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 2.4200e-003 | 0.0207 | 8.8100e-003 | 1.3000e-004 | | 1.6700e-003 | 1.6700e-003 | | 1.6700e-003 | 1.6700e-003 | 0.0000 | 23.9691 | 23.9691 | 4.6000e-004 | 4.4000e-004 | 24.1116 |
| Landscaping | 0.1339 | 0.0513 | 4.4538 | 2.4000e-004 | | 0.0247 | 0.0247 | | 0.0247 | 0.0247 | 0.0000 | 7.2830 | 7.2830 | 6.9800e-003 | 0.0000 | 7.4576 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | **2.9472** | **0.0720** | **4.4626** | **3.7000e-004** | | **0.0264** | **0.0264** | | **0.0264** | **0.0264** | **0.0000** | **31.2521** | **31.2521** | **7.4400e-003** | **4.4000e-004** | **31.5691** |

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.0378 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 2.2087 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 0.0710 | 0.0407 | 3.3842 | 1.5000e-004 | | 0.0184 | 0.0184 | | 0.0184 | 0.0184 | 0.0000 | 5.0954 | 5.0954 | 3.6600e-003 | 0.0000 | 5.1868 |
| **Total** | **2.3176** | **0.0407** | **3.3842** | **1.5000e-004** | | **0.0184** | **0.0184** | | **0.0184** | **0.0184** | **0.0000** | **5.0954** | **5.0954** | **3.6600e-003** | **0.0000** | **5.1868** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

Use Reclaimed Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Turf Reduction

Use Water Efficient Irrigation System

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 37.1657 | 1.0276 | 0.0253 | 70.3800 |
| Unmitigated | 47.7542 | 1.2847 | 0.0316 | 89.2944 |

## 7.2 Water by Land Use

### Unmitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| City Park | 0 / 67.0208 | 15.5345 | 3.0900e-003 | 6.4000e-004 | 15.8019 |
| Condo/Townhouse High Rise | 8.14425 / 5.13442 | 6.6923 | 0.2662 | 6.4400e-003 | 15.2649 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0.118286 / 0.0724981 | 0.0967 | 3.8700e-003 | 9.0000e-005 | 0.2212 |
| Retirement Community | 30.9482 / 19.5108 | 25.4307 | 1.0116 | 0.0245 | 58.0065 |
| **Total** | | **47.7542** | **1.2847** | **0.0316** | **89.2944** |

### Mitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |

| | | | | | |
|---|---|---|---|---|---|
| City Park | 0 / 50.346 | 11.6695 | 2.3200e-003 | 4.8000e-004 | 11.8704 |
| Condo/Townhouse High Rise | 6.5154 / 3.85698 | 5.2958 | 0.2130 | 5.1500e-003 | 12.1528 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0.094629 / 0.0544605 | 0.0766 | 3.0900e-003 | 7.0000e-005 | 0.1761 |
| Retirement Community | 24.7585 / 14.6565 | 20.1239 | 0.8092 | 0.0196 | 46.1807 |
| **Total** | | **37.1657** | **1.0276** | **0.0253** | **70.3800** |

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 14.8305 | 0.8765 | 0.0000 | 36.7420 |
| Unmitigated | 59.3221 | 3.5058 | 0.0000 | 146.9679 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|

| Land Use | tons | MT/yr | | | |
|---|---|---|---|---|---|
| City Park | 4.84 | 0.9825 | 0.0581 | 0.0000 | 2.4340 |
| Condo/Townhouse High Rise | 57.5 | 11.6720 | 0.6898 | 0.0000 | 28.9168 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 11.4 | 2.3141 | 0.1368 | 0.0000 | 5.7331 |
| Retirement Community | 218.5 | 44.3535 | 2.6212 | 0.0000 | 109.8840 |
| **Total** | | **59.3221** | **3.5058** | **0.0000** | **146.9679** |

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| City Park | 1.21 | 0.2456 | 0.0145 | 0.0000 | 0.6085 |
| Condo/Townhouse High Rise | 14.375 | 2.9180 | 0.1725 | 0.0000 | 7.2292 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 2.85 | 0.5785 | 0.0342 | 0.0000 | 1.4333 |
| Retirement Community | 54.625 | 11.0884 | 0.6553 | 0.0000 | 27.4710 |
| **Total** | | **14.8305** | **0.8765** | **0.0000** | **36.7420** |

## 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

**Boilers**

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

**User Defined Equipment**

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT | | | |
| Unmitigated | -637.8800 | 0.0000 | 0.0000 | -637.8800 |

### 11.1 Vegetation Land Change

**Vegetation Type**

| | Initial/Final | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| | Acres | MT | | | |
| Grassland | 204 / 56 | -637.8800 | 0.0000 | 0.0000 | -637.8800 |
| **Total** | | **-637.8800** | **0.0000** | **0.0000** | **-637.8800** |

# Vineyards at Deer Creek - Phase 2

## Contra Costa County, Mitigation Report

## Construction Mitigation Summary

| Phase | ROG | NOx | CO | SO2 | Exhaust PM10 | Exhaust PM2.5 | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Reduction | | | | | | | | | | | | |
| Architectural Coating | 0.02 | 0.79 | -0.01 | 0.00 | 0.85 | 0.85 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Building Construction | 0.16 | 0.29 | -0.03 | 0.00 | 0.72 | 0.72 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Grading | 0.75 | 0.90 | -0.17 | 0.00 | 0.92 | 0.91 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Infrastructure Improvements | 0.67 | 0.85 | -0.34 | 0.00 | 0.88 | 0.87 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Paving | 0.54 | 0.87 | -0.18 | 0.00 | 0.92 | 0.91 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Site Preparation | 0.81 | 0.92 | -0.14 | 0.00 | 0.95 | 0.95 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## OFFROAD Equipment Mitigation

| Equipment Type | Fuel Type | Tier | Number Mitigated | Total Number of Equipment | DPF | Oxidation Catalyst |
|---|---|---|---|---|---|---|
| Air Compressors | Diesel | Tier 4 Final | 3 | 3 | No Change | 0.00 |
| Concrete/Industrial Saws | Diesel | Tier 4 Final | 0 | 1 | No Change | 0.00 |
| Cranes | Diesel | Tier 4 Final | 1 | 1 | No Change | 0.00 |
| Excavators | Diesel | Tier 4 Final | 8 | 8 | No Change | 0.00 |
| Forklifts | Diesel | Tier 4 Final | 3 | 3 | No Change | 0.00 |
| Generator Sets | Diesel | Tier 4 Final | 1 | 1 | No Change | 0.00 |
| Graders | Diesel | Tier 4 Final | 1 | 1 | No Change | 0.00 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Pavers | Diesel | Tier 4 Final | 2 | 2 | No Change | 0.00 |
| Paving Equipment | Diesel | Tier 4 Final | 2 | 2 | No Change | 0.00 |
| Rollers | Diesel | Tier 4 Final | 2 | 2 | No Change | 0.00 |
| Rubber Tired Dozers | Diesel | Tier 4 Final | 6 | 6 | No Change | 0.00 |
| Rubber Tired Loaders | Diesel | Tier 4 Final | 3 | 3 | No Change | 0.00 |
| Scrapers | Diesel | Tier 4 Final | 4 | 4 | No Change | 0.00 |
| Tractors/Loaders/Backhoes | Diesel | Tier 4 Final | 12 | 12 | No Change | 0.00 |
| Welders | Diesel | Tier 4 Final | 0 | 1 | No Change | 0.00 |

| Equipment Type | ROG | NOx | CO | SO2 | Exhaust PM10 | Exhaust PM2.5 | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Unmitigated tons/yr | | | | | | Unmitigated mt/yr | | | | | |
| Air Compressors | 1.27890E-001 | 8.57410E-001 | 1.35414E+000 | 2.22000E-003 | 3.85500E-002 | 3.85500E-002 | 0.00000E+000 | 1.91111E+002 | 1.91111E+002 | 1.04200E-002 | 0.00000E+000 | 1.91372E+002 |
| Cranes | 7.94200E-002 | 8.07800E-001 | 4.39270E-001 | 1.46000E-003 | 3.42600E-002 | 3.15200E-002 | 0.00000E+000 | 1.27975E+002 | 1.27975E+002 | 4.13900E-002 | 0.00000E+000 | 1.29010E+002 |
| Excavators | 3.76700E-002 | 2.93200E-001 | 6.82390E-001 | 1.08000E-003 | 1.44400E-002 | 1.32900E-002 | 0.00000E+000 | 9.48511E+001 | 9.48511E+001 | 3.06800E-002 | 0.00000E+000 | 9.56180E+001 |
| Forklifts | 7.58100E-002 | 7.13810E-001 | 9.81720E-001 | 1.32000E-003 | 3.85200E-002 | 3.54400E-002 | 0.00000E+000 | 1.16229E+002 | 1.16229E+002 | 3.75900E-002 | 0.00000E+000 | 1.17169E+002 |
| Generator Sets | 7.73700E-002 | 6.95190E-001 | 1.05589E+000 | 1.90000E-003 | 2.79400E-002 | 2.79400E-002 | 0.00000E+000 | 1.63062E+002 | 1.63062E+002 | 6.08000E-003 | 0.00000E+000 | 1.63214E+002 |
| Graders | 1.95000E-002 | 2.28560E-001 | 9.11000E-002 | 3.60000E-004 | 7.41000E-003 | 6.82000E-003 | 0.00000E+000 | 3.19582E+001 | 3.19582E+001 | 1.03400E-002 | 0.00000E+000 | 3.22166E+001 |
| Pavers | 4.04000E-003 | 3.83200E-002 | 6.36500E-002 | 1.00000E-004 | 1.79000E-003 | 1.65000E-003 | 0.00000E+000 | 9.08416E+000 | 9.08416E+000 | 2.94000E-003 | 0.00000E+000 | 9.15761E+000 |
| Paving Equipment | 3.62000E-003 | 3.29100E-002 | 5.65400E-002 | 9.00000E-005 | 1.59000E-003 | 1.46000E-003 | 0.00000E+000 | 7.87277E+000 | 7.87277E+000 | 2.55000E-003 | 0.00000E+000 | 7.93643E+000 |
| Rollers | 3.21000E-003 | 3.35300E-002 | 4.07000E-002 | 6.00000E-005 | 1.77000E-003 | 1.63000E-003 | 0.00000E+000 | 5.07226E+000 | 5.07226E+000 | 1.64000E-003 | 0.00000E+000 | 5.11327E+000 |
| Rubber Tired Dozers | 4.86500E-002 | 4.98940E-001 | 2.19180E-001 | 6.00000E-004 | 2.24800E-002 | 2.06800E-002 | 0.00000E+000 | 5.25157E+001 | 5.25157E+001 | 1.69800E-002 | 0.00000E+000 | 5.29403E+001 |
| Rubber Tired Loaders | 3.39900E-002 | 3.11550E-001 | 2.00230E-001 | 8.40000E-004 | 1.04200E-002 | 9.59000E-003 | 0.00000E+000 | 7.35214E+001 | 7.35214E+001 | 2.37800E-002 | 0.00000E+000 | 7.41158E+001 |
| Scrapers | 1.67210E-001 | 1.69305E+000 | 1.31274E+000 | 3.34000E-003 | 6.69200E-002 | 6.15600E-002 | 0.00000E+000 | 2.93204E+002 | 2.93204E+002 | 9.48300E-002 | 0.00000E+000 | 2.95574E+002 |
| Tractors/Loaders/Backhoes | 1.33870E-001 | 1.35090E+000 | 2.20093E+000 | 3.08000E-003 | 5.70800E-002 | 5.25200E-002 | 0.00000E+000 | 2.70191E+002 | 2.70191E+002 | 8.73900E-002 | 0.00000E+000 | 2.72375E+002 |
| Welders | 6.38500E-002 | 3.88250E-001 | 4.76830E-001 | 7.40000E-004 | 1.19800E-002 | 1.19800E-002 | 0.00000E+000 | 5.43017E+001 | 5.43017E+001 | 5.20000E-003 | 0.00000E+000 | 5.44316E+001 |

| Equipment Type | ROG | NOx | CO | SO2 | Exhaust PM10 | Exhaust PM2.5 | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mitigated tons/yr | | | | | | Mitigated mt/yr | | | | | |
| Air Compressors | 2.22400E-002 | 9.63800E-002 | 1.37156E+000 | 2.22000E-003 | 2.97000E-003 | 2.97000E-003 | 0.00000E+000 | 1.91111E+002 | 1.91111E+002 | 1.04200E-002 | 0.00000E+000 | 1.91371E+002 |
| Cranes | 1.79000E-002 | 7.75500E-002 | 6.56160E-001 | 1.46000E-003 | 2.39000E-003 | 2.39000E-003 | 0.00000E+000 | 1.27975E+002 | 1.27975E+002 | 4.13900E-002 | 0.00000E+000 | 1.29010E+002 |
| Excavators | 1.32800E-002 | 5.75400E-002 | 8.18870E-001 | 1.08000E-003 | 1.77000E-003 | 1.77000E-003 | 0.00000E+000 | 9.48510E+001 | 9.48510E+001 | 3.06800E-002 | 0.00000E+000 | 9.56179E+001 |
| Forklifts | 1.63000E-002 | 7.06500E-002 | 1.00534E+000 | 1.32000E-003 | 2.17000E-003 | 2.17000E-003 | 0.00000E+000 | 1.16229E+002 | 1.16229E+002 | 3.75900E-002 | 0.00000E+000 | 1.17169E+002 |
| Generator Sets | 1.89800E-002 | 8.22300E-002 | 1.17026E+000 | 1.90000E-003 | 2.53000E-003 | 2.53000E-003 | 0.00000E+000 | 1.63062E+002 | 1.63062E+002 | 6.08000E-003 | 0.00000E+000 | 1.63214E+002 |
| Graders | 4.46000E-003 | 1.93400E-002 | 1.63620E-001 | 3.60000E-004 | 5.90000E-004 | 5.90000E-004 | 0.00000E+000 | 3.19582E+001 | 3.19582E+001 | 1.03400E-002 | 0.00000E+000 | 3.22166E+001 |
| Pavers | 1.27000E-003 | 5.51000E-003 | 7.83900E-002 | 1.00000E-004 | 1.70000E-004 | 1.70000E-004 | 0.00000E+000 | 9.08415E+000 | 9.08415E+000 | 2.94000E-003 | 0.00000E+000 | 9.15760E+000 |
| Paving Equipment | 1.11000E-003 | 4.79000E-003 | 6.82200E-002 | 9.00000E-005 | 1.50000E-004 | 1.50000E-004 | 0.00000E+000 | 7.87276E+000 | 7.87276E+000 | 2.55000E-003 | 0.00000E+000 | 7.93642E+000 |
| Rollers | 7.10000E-004 | 3.07000E-003 | 4.36400E-002 | 6.00000E-005 | 9.00000E-005 | 9.00000E-005 | 0.00000E+000 | 5.07225E+000 | 5.07225E+000 | 1.64000E-003 | 0.00000E+000 | 5.11326E+000 |
| Rubber Tired Dozers | 7.32000E-003 | 3.17100E-002 | 2.68350E-001 | 6.00000E-004 | 9.80000E-004 | 9.80000E-004 | 0.00000E+000 | 5.25157E+001 | 5.25157E+001 | 1.69800E-002 | 0.00000E+000 | 5.29403E+001 |
| Rubber Tired Loaders | 1.03500E-002 | 4.48500E-002 | 3.79520E-001 | 8.40000E-004 | 1.38000E-003 | 1.38000E-003 | 0.00000E+000 | 7.35213E+001 | 7.35213E+001 | 2.37800E-002 | 0.00000E+000 | 7.41157E+001 |
| Scrapers | 4.10100E-002 | 1.77720E-001 | 1.50375E+000 | 3.34000E-003 | 5.47000E-003 | 5.47000E-003 | 0.00000E+000 | 2.93203E+002 | 2.93203E+002 | 9.48300E-002 | 0.00000E+000 | 2.95574E+002 |
| Tractors/Loaders/Backhoes | 3.74600E-002 | 1.62320E-001 | 2.31001E+000 | 3.08000E-003 | 4.99000E-003 | 4.99000E-003 | 0.00000E+000 | 2.70190E+002 | 2.70190E+002 | 8.73900E-002 | 0.00000E+000 | 2.72375E+002 |
| Welders | 6.38500E-002 | 3.88250E-001 | 4.76830E-001 | 7.40000E-004 | 1.19800E-002 | 1.19800E-002 | 0.00000E+000 | 5.43016E+001 | 5.43016E+001 | 5.20000E-003 | 0.00000E+000 | 5.44315E+001 |

| Equipment Type | ROG | NOx | CO | SO2 | Exhaust PM10 | Exhaust PM2.5 | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Percent Reduction | | | | | | | | | | | |
| Air Compressors | 8.26101E-001 | 8.87592E-001 | -1.28643E-002 | 0.00000E+000 | 9.22957E-001 | 9.22957E-001 | 0.00000E+000 | 1.15116E-006 | 1.15116E-006 | 0.00000E+000 | 0.00000E+000 | 1.14960E-006 |
| Cranes | 7.74616E-001 | 9.03999E-001 | -4.93751E-001 | 0.00000E+000 | 9.30239E-001 | 9.24175E-001 | 0.00000E+000 | 1.17210E-006 | 1.17210E-006 | 0.00000E+000 | 0.00000E+000 | 1.16270E-006 |
| Excavators | 6.47465E-001 | 8.03752E-001 | -2.00003E-001 | 0.00000E+000 | 8.77424E-001 | 8.66817E-001 | 0.00000E+000 | 1.15971E-006 | 1.15971E-006 | 0.00000E+000 | 0.00000E+000 | 1.15041E-006 |
| Forklifts | 7.84989E-001 | 9.01024E-001 | -2.40598E-002 | 0.00000E+000 | 9.43666E-001 | 9.38770E-001 | 0.00000E+000 | 1.20452E-006 | 1.20452E-006 | 0.00000E+000 | 0.00000E+000 | 1.19486E-006 |
| Generator Sets | 7.54685E-001 | 8.81716E-001 | -1.08316E-001 | 0.00000E+000 | 9.09449E-001 | 9.09449E-001 | 0.00000E+000 | 1.16520E-006 | 1.16520E-006 | 0.00000E+000 | 0.00000E+000 | 1.22538E-006 |
| Graders | 7.71282E-001 | 9.15383E-001 | -7.96048E-001 | 0.00000E+000 | 9.20378E-001 | 9.13490E-001 | 0.00000E+000 | 9.38726E-007 | 9.38726E-007 | 0.00000E+000 | 0.00000E+000 | 1.24160E-006 |
| Pavers | 6.85644E-001 | 8.56211E-001 | -2.31579E-001 | 0.00000E+000 | 9.05028E-001 | 8.96970E-001 | 0.00000E+000 | 1.10082E-006 | 1.10082E-006 | 0.00000E+000 | 0.00000E+000 | 1.09199E-006 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Paving Equipment | 6.93370E-001 | 8.54452E-001 | -2.06579E-001 | 0.00000E+000 | 9.05660E-001 | 8.97260E-001 | 0.00000E+000 | 1.27020E-006 | 1.27020E-006 | 0.00000E+000 | 0.00000E+000 | 1.26001E-006 |
| Rollers | 7.78816E-001 | 9.08440E-001 | -7.22359E-002 | 0.00000E+000 | 9.49153E-001 | 9.44785E-001 | 0.00000E+000 | 1.97151E-006 | 1.97151E-006 | 0.00000E+000 | 0.00000E+000 | 1.95570E-006 |
| Rubber Tired Dozers | 8.49538E-001 | 9.36445E-001 | -2.24336E-001 | 0.00000E+000 | 9.56406E-001 | 9.52611E-001 | 0.00000E+000 | 1.14252E-006 | 1.14252E-006 | 0.00000E+000 | 0.00000E+000 | 1.13335E-006 |
| Rubber Tired Loaders | 6.95499E-001 | 8.56042E-001 | -8.95420E-001 | 0.00000E+000 | 8.67562E-001 | 8.56100E-001 | 0.00000E+000 | 1.22413E-006 | 1.22413E-006 | 0.00000E+000 | 0.00000E+000 | 1.21432E-006 |
| Scrapers | 7.54740E-001 | 8.95030E-001 | -1.45505E-001 | 0.00000E+000 | 9.18261E-001 | 9.11144E-001 | 0.00000E+000 | 1.19371E-006 | 1.19371E-006 | 0.00000E+000 | 0.00000E+000 | 1.18414E-006 |
| Tractors/Loaders/Backhoes | 7.20176E-001 | 8.79843E-001 | -4.95609E-002 | 0.00000E+000 | 9.12579E-001 | 9.04989E-001 | 0.00000E+000 | 1.18435E-006 | 1.18435E-006 | 0.00000E+000 | 0.00000E+000 | 1.17485E-006 |
| Welders | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 1.10494E-006 | 1.10494E-006 | 0.00000E+000 | 0.00000E+000 | 1.28602E-006 |

## Fugitive Dust Mitigation

| Yes/No | Mitigation Measure | Mitigation Input | | Mitigation Input | | Mitigation Input | |
|---|---|---|---|---|---|---|---|
| No | Soil Stabilizer for unpaved Roads | PM10 Reduction | 0.00 | PM2.5 Reduction | 0.00 | | |
| Yes | Replace Ground Cover of Area Disturbed | PM10 Reduction | 5.00 | PM2.5 Reduction | 5.00 | | |
| Yes | Water Exposed Area | PM10 Reduction | 55.00 | PM2.5 Reduction | 55.00 | Frequency (per day) | 2.00 |
| Yes | Unpaved Road Mitigation | Moisture Content % | 12.00 | Vehicle Speed (mph) | 15.00 | | |
| Yes | Clean Paved Road | % PM Reduction | 6.00 | | | | |

| | | Unmitigated | | Mitigated | | Percent Reduction | |
|---|---|---|---|---|---|---|---|
| Phase | Source | PM10 | PM2.5 | PM10 | PM2.5 | PM10 | PM2.5 |
| Architectural Coating | Fugitive Dust | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Architectural Coating | Roads | 0.60 | 0.16 | 0.56 | 0.15 | 0.05 | 0.05 |
| Building Construction | Fugitive Dust | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Building Construction | Roads | 3.98 | 1.07 | 3.78 | 1.02 | 0.05 | 0.05 |
| Grading | Fugitive Dust | 0.59 | 0.21 | 0.25 | 0.09 | 0.57 | 0.57 |
| Grading | Roads | 0.01 | 0.00 | 0.01 | 0.00 | 0.05 | 0.05 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Infrastructure Improvements | Fugitive Dust | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Infrastructure Improvements | Roads | 0.01 | 0.00 | 0.01 | 0.00 | 0.05 | 0.05 |
| Paving | Fugitive Dust | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Paving | Roads | 0.00 | 0.00 | 0.00 | 0.00 | 0.05 | 0.06 |
| Site Preparation | Fugitive Dust | 0.09 | 0.05 | 0.04 | 0.02 | 0.57 | 0.57 |
| Site Preparation | Roads | 0.00 | 0.00 | 0.00 | 0.00 | 0.04 | 0.05 |

## Operational Percent Reduction Summary

| Category | ROG | NOx | CO | SO2 | Exhaust PM10 | Exhaust PM2.5 | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Reduction | | | | | | | | | | | | |
| Architectural Coating | 91.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Consumer Products | 7.38 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Electricity | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Hearth | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 0.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Landscaping | 46.95 | 20.63 | 24.01 | 37.50 | 25.46 | 25.46 | 0.00 | 30.04 | 30.04 | 47.56 | 0.00 | 30.45 |
| Mobile | 7.78 | 9.66 | 14.19 | 16.43 | 15.62 | 15.62 | 0.00 | 16.43 | 16.43 | 13.58 | 0.00 | 16.43 |
| Natural Gas | 36.07 | 36.06 | 36.07 | 36.21 | 36.07 | 36.07 | 0.00 | 36.07 | 36.07 | 36.03 | 36.21 | 36.07 |
| Water Indoor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 20.00 | 22.94 | 22.17 | 20.02 | 20.15 | 21.18 |
| Water Outdoor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## Operational Mobile Mitigation

Project Setting: Low Density Suburban

| Mitigation | Category | Measure | % Reduction | Input Value 1 | Input Value 2 | Input Value 3 |
|---|---|---|---|---|---|---|
| No | Land Use | Increase Density | 0.00 | 0.00 | 0.00 | |
| Yes | Land Use | Increase Diversity | 0.14 | 0.39 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| No | Land Use | Improve Walkability Design | 0.00 | 0.00 | | |
| No | Land Use | Improve Destination Accessibility | 0.00 | 0.00 | | |
| Yes | Land Use | Increase Transit Accessibility | 0.06 | 1.00 | | |
| No | Land Use | Integrate Below Market Rate Housing | 0.00 | 0.00 | | |
| | Land Use | Land Use SubTotal | 0.05 | | | |
| Yes | Neighborhood Enhancements | Improve Pedestrian Network | 2.00 | Project Site and Connecting Off-Site | | |
| Yes | Neighborhood Enhancements | Provide Traffic Calming Measures | 0.50 | 75.00 | 50.00 | |
| Yes | Neighborhood Enhancements | Implement NEV Network | 0.01 | | | |
| | Neighborhood Enhancements | Neighborhood Enhancements Subtotal | 0.15 | | | |
| Yes | Parking Policy Pricing | Limit Parking Supply | 0.00 | 0.00 | | |
| No | Parking Policy Pricing | Unbundle Parking Costs | 0.00 | 0.00 | | |
| No | Parking Policy Pricing | On-street Market Pricing | 0.00 | 0.00 | | |
| | Parking Policy Pricing | Parking Policy Pricing Subtotal | 0.00 | | | |
| No | Transit Improvements | Provide BRT System | 0.00 | 0.00 | | |
| Yes | Transit Improvements | Expand Transit Network | 0.00 | 2.00 | | |
| No | Transit Improvements | Increase Transit Frequency | 0.00 | | 0.00 | |
| | Transit Improvements | Transit Improvements Subtotal | 0.00 | | | |
| | | Land Use and Site Enhancement Subtotal | 0.15 | | | |
| Yes | Commute | Implement Trip Reduction Program | 21.00 | 100.00 | Required | |
| Yes | Commute | Transit Subsidy | 3.30 | 100.00 | $1.49 | |
| No | Commute | Implement Employee Parking "Cash Out" | 3.00 | 0.00 | | |
| No | Commute | Workplace Parking Charge | | 0.00 | | |
| No | Commute | Encourage Telecommuting and Alternative Work Schedules | 0.00 | | | |
| No | Commute | Market Commute Trip Reduction Option | 0.00 | 0.00 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Yes | Commute | Employee Vanpool/Shuttle | 0.01 | 100.00 | 2.00 | |
| Yes | Commute | Provide Ride Sharing Program | 5.00 | 100.00 | | |
| | Commute | Commute Subtotal | 0.25 | | | |
| No | School Trip | Implement School Bus Program | 0.00 | 0.00 | | |
| | | Total VMT Reduction | 0.36 | | | |

**Area Mitigation**

| Measure Implemented | Mitigation Measure | Input Value |
|---|---|---|
| No | Only Natural Gas Hearth | |
| Yes | No Hearth | |
| Yes | Use Low VOC Cleaning Supplies | |
| Yes | Use Low VOC Paint (Residential Interior) | 10.00 |
| Yes | Use Low VOC Paint (Residential Exterior) | 10.00 |
| Yes | Use Low VOC Paint (Non-residential Interior) | 10.00 |
| Yes | Use Low VOC Paint (Non-residential Exterior) | 10.00 |
| Yes | Use Low VOC Paint (Parking) | 10.00 |
| Yes | % Electric Lawnmower | 100.00 |
| Yes | % Electric Leafblower | 100.00 |
| Yes | % Electric Chainsaw | 100.00 |

**Energy Mitigation Measures**

| Measure Implemented | Mitigation Measure | Input Value 1 | Input Value 2 |
|---|---|---|---|
| Yes | Exceed Title 24 | 53.00 | |
| Yes | Install High Efficiency Lighting | 75.00 | |
| Yes | On-site Renewable | 0.00 | 100.00 |

| Appliance Type | Land Use Subtype | % Improvement |
|---|---|---|
| ClothWasher | Condo/Townhouse High Ri... | 30.00 |
| ClothWasher | Retirement Community | 30.00 |
| DishWasher | Condo/Townhouse High Ri... | 15.00 |
| DishWasher | Retirement Community | 15.00 |
| Fan | Condo/Townhouse High Ri... | 50.00 |
| Fan | Retirement Community | 50.00 |
| Refrigerator | Condo/Townhouse High Ri... | 15.00 |
| Refrigerator | Retirement Community | 15.00 |

**Water Mitigation Measures**

| Measure Implemented | Mitigation Measure | Input Value 1 | Input Value 2 |
|---|---|---|---|
| No | Apply Water Conservation on Strategy | 0.00 | 0.00 |
| Yes | Use Reclaimed Water | 0.00 | 50.00 |
| No | Use Grey Water | 0.00 | |
| Yes | Install low-flow bathroom faucet | 32.00 | |
| Yes | Install low-flow Kitchen faucet | 18.00 | |
| Yes | Install low-flow Toilet | 20.00 | |
| Yes | Install low-flow Shower | 20.00 | |
| Yes | Turf Reduction | 75.00 | |
| Yes | Use Water Efficient Irrigation Systems | 6.10 | |
| No | Water Efficient Landscape | 0.00 | 0.00 |

**Solid Waste Mitigation**

| Mitigation Measures | Input Value |
|---|---|

| | |
|---|---|
| Institute Recycling and Composting Services<br>Percent Reduction in Waste Disposed | 75.00 |

# Vineyards at Deer Creek- Phase 3

**Contra Costa County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Parking Lot | 260.00 | Space | 2.34 | 104,000.00 | 0 |
| City Park | 56.25 | Acre | 56.25 | 2,450,250.00 | 0 |
| Recreational Swimming Pool | 2.00 | 1000sqft | 0.05 | 2,000.00 | 0 |
| Condo/Townhouse High Rise | 125.00 | Dwelling Unit | 1.95 | 125,000.00 | 358 |
| Retirement Community | 475.00 | Dwelling Unit | 95.00 | 475,000.00 | 1359 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 58 |
| **Climate Zone** | 4 | | | **Operational Year** | 2030 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 146 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - Per PG&E 2018 CRSR

Land Use - Parking: assumed 2 spaces for 125 DUs, plus 10 extra spaces for recreation uses
City Park is open space/ agricultural uses

Construction Phase - Per Construction Questionnaire

Off-road Equipment - Estimated equipment use

Off-road Equipment -

Off-road Equipment - No demolition

Off-road Equipment - Estimated equipment use

Off-road Equipment -

Off-road Equipment - Estimated equipment use

Off-road Equipment -

Off-road Equipment -

Trips and VMT - vendor trips would be lower since city park was used to model the proposed natural open space, informal parkland, low impact trails, etc.

Demolition - No demolition

Grading - Balanced between all phases

Vehicle Trips - Per Fehr and Peers TIA 2019

Woodstoves - Per BAAQMD Regulation 6, Rule 3

Energy Use -

Land Use Change -

Construction Off-road Equipment Mitigation - Per BAAQMD basic control measure

Mobile Land Use Mitigation - Green building design elements include narrower roadways

Mobile Commute Mitigation -

Area Mitigation - No hearth, low VOC cleaning supplies, low VOC paint, and electric landscape equipment

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblAreaMitigation | UseLowVOCPaintNonresidentialExterior Value | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintNonresidentialInterior Value | 100 | 10 |
| tblAreaMitigation | UseLowVOCPaintParkingCheck | False | True |
| tblAreaMitigation | UseLowVOCPaintParkingValue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintResidentialExteriorValue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintResidentialInteriorValue | 100 | 10 |
| tblConstDustMitigation | CleanPavedRoadPercentReduction | 0 | 6 |
| tblConstDustMitigation | WaterUnpavedRoadMoistureContent | 0 | 12 |
| tblConstDustMitigation | WaterUnpavedRoadVehicleSpeed | 0 | 15 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |

| | | | |
|---|---|---|---|
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 8.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 6.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 4.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 12.00 |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstructionPhase | NumDays | 220.00 | 500.00 |
| tblConstructionPhase | NumDays | 3,100.00 | 574.00 |
| tblConstructionPhase | NumDays | 200.00 | 0.00 |
| tblConstructionPhase | NumDays | 310.00 | 110.00 |

| | | | |
|---|---|---|---|
| tblConstructionPhase | NumDays | 220.00 | 22.00 |
| tblConstructionPhase | NumDays | 120.00 | 10.00 |
| tblFireplaces | NumberGas | 18.75 | 40.00 |
| tblFireplaces | NumberGas | 71.25 | 152.00 |
| tblFireplaces | NumberWood | 21.25 | 0.00 |
| tblFireplaces | NumberWood | 80.75 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 4.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 3.00 |
| tblProjectCharacteristics | CO2IntensityFactor | 641.35 | 146 |
| tblTripsAndVMT | VendorTripNumber | 483.00 | 283.00 |
| tblVehicleTrips | HO_TL | 5.70 | 8.90 |
| tblVehicleTrips | HO_TL | 5.70 | 8.90 |
| tblVehicleTrips | HS_TL | 4.80 | 7.50 |
| tblVehicleTrips | HS_TL | 4.80 | 7.50 |
| tblVehicleTrips | HW_TL | 10.80 | 16.80 |
| tblVehicleTrips | HW_TL | 10.80 | 16.80 |
| tblVehicleTrips | ST_TR | 22.75 | 0.00 |
| tblVehicleTrips | ST_TR | 9.10 | 0.00 |
| tblVehicleTrips | SU_TR | 16.74 | 0.00 |
| tblVehicleTrips | SU_TR | 13.60 | 0.00 |
| tblVehicleTrips | WD_TR | 1.89 | 0.00 |
| tblVehicleTrips | WD_TR | 4.18 | 4.80 |
| tblVehicleTrips | WD_TR | 33.82 | 0.00 |
| tblVehicleTrips | WD_TR | 2.40 | 4.80 |
| tblWoodstoves | NumberCatalytic | 2.50 | 0.00 |
| tblWoodstoves | NumberCatalytic | 9.50 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 2.50 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 9.50 | 0.00 |

## 2.0 Emissions Summary

## 2.1 Overall Construction

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2027 | 0.4522 | 3.8034 | 4.1591 | 0.0121 | 1.0688 | 0.1337 | 1.2026 | 0.3635 | 0.1233 | 0.4869 | 0.0000 | 1,079.7622 | 1,079.7622 | 0.2220 | 0.0000 | 1,085.3130 |
| 2028 | 2.8105 | 4.8407 | 6.5692 | 0.0270 | 2.0801 | 0.0994 | 2.1794 | 0.5588 | 0.0944 | 0.6532 | 0.0000 | 2,474.6280 | 2,474.6280 | 0.1237 | 0.0000 | 2,477.7206 |
| 2029 | 2.9800 | 4.8435 | 6.4834 | 0.0270 | 2.1132 | 0.1008 | 2.2140 | 0.5677 | 0.0959 | 0.6635 | 0.0000 | 2,469.3478 | 2,469.3478 | 0.1229 | 0.0000 | 2,472.4192 |
| **Maximum** | **2.9800** | **4.8435** | **6.5692** | **0.0270** | **2.1132** | **0.1337** | **2.2140** | **0.5677** | **0.1233** | **0.6635** | **0.0000** | **2,474.6280** | **2,474.6280** | **0.2220** | **0.0000** | **2,477.7206** |

### Mitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2027 | 0.2066 | 1.0163 | 4.9825 | 0.0121 | 0.6577 | 0.0160 | 0.6737 | 0.2099 | 0.0158 | 0.2257 | 0.0000 | 1,079.7614 | 1,079.7614 | 0.2220 | 0.0000 | 1,085.3122 |
| 2028 | 2.6476 | 3.1896 | 6.7765 | 0.0270 | 1.9745 | 0.0240 | 1.9985 | 0.5329 | 0.0231 | 0.5560 | 0.0000 | 2,474.6275 | 2,474.6275 | 0.1237 | 0.0000 | 2,477.7201 |
| 2029 | 2.8120 | 3.1539 | 6.6923 | 0.0270 | 2.0060 | 0.0236 | 2.0295 | 0.5413 | 0.0228 | 0.5641 | 0.0000 | 2,469.3473 | 2,469.3473 | 0.1229 | 0.0000 | 2,472.4188 |
| **Maximum** | **2.8120** | **3.1896** | **6.7765** | **0.0270** | **2.0060** | **0.0240** | **2.0295** | **0.5413** | **0.0231** | **0.5641** | **0.0000** | **2,474.6275** | **2,474.6275** | **0.2220** | **0.0000** | **2,477.7201** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **9.23** | **45.43** | **-7.20** | **0.00** | **11.86** | **80.97** | **15.98** | **13.82** | **80.35** | **25.39** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---|---|---|---|---|
| **1** | **1-1-2027** | **3-31-2027** | 1.3609 | 0.1794 |

| | | | | |
|---|---|---|---|---|
| **2** | **4-1-2027** | **6-30-2027** | 1.3231 | 0.1845 |
| **3** | **7-1-2027** | **9-30-2027** | 0.4662 | 0.0914 |
| **4** | **10-1-2027** | **12-31-2027** | 1.1040 | 0.7692 |
| **5** | **1-1-2028** | **3-31-2028** | 1.7450 | 1.3209 |
| **6** | **4-1-2028** | **6-30-2028** | 1.9679 | 1.5053 |
| **7** | **7-1-2028** | **9-30-2028** | 1.9895 | 1.5218 |
| **8** | **10-1-2028** | **12-31-2028** | 2.0107 | 1.5430 |
| **9** | **1-1-2029** | **3-31-2029** | 1.9441 | 1.4865 |
| **10** | **4-1-2029** | **6-30-2029** | 1.9460 | 1.4834 |
| **11** | **7-1-2029** | **9-30-2029** | 1.9674 | 1.4997 |
| | | **Highest** | 2.0107 | 1.5430 |

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 2.9465 | 0.0720 | 4.4550 | 3.7000e-004 | | 0.0264 | 0.0264 | | 0.0264 | 0.0264 | 0.0000 | 31.2521 | 31.2521 | 7.4100e-003 | 4.4000e-004 | 31.5683 |
| Energy | 0.0320 | 0.2730 | 0.1162 | 1.7400e-003 | | 0.0221 | 0.0221 | | 0.0221 | 0.0221 | 0.0000 | 497.6812 | 497.6812 | 0.0421 | 0.0133 | 502.6845 |
| Mobile | 0.4629 | 2.2069 | 6.1104 | 0.0288 | 3.3116 | 0.0183 | 3.3299 | 0.8881 | 0.0170 | 0.9051 | 0.0000 | 2,651.2351 | 2,651.2351 | 0.0737 | 0.0000 | 2,653.0766 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 59.3221 | 0.0000 | 59.3221 | 3.5058 | 0.0000 | 146.9679 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 12.4398 | 35.3145 | 47.7542 | 1.2847 | 0.0316 | 89.2944 |
| **Total** | **3.4413** | **2.5518** | **10.6816** | **0.0309** | **3.3116** | **0.0668** | **3.3784** | **0.8881** | **0.0655** | **0.9536** | **71.7618** | **3,215.4828** | **3,287.2447** | **4.9137** | **0.0453** | **3,423.5916** |

### Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 2.3172 | 0.0408 | 3.3778 | 1.5000e-004 | | 0.0184 | 0.0184 | | 0.0184 | 0.0184 | 0.0000 | 5.0954 | 5.0954 | 3.6400e-003 | 0.0000 | 5.1863 |
| Energy | 0.0198 | 0.1690 | 0.0719 | 1.0800e-003 | | 0.0137 | 0.0137 | | 0.0137 | 0.0137 | 0.0000 | 333.2701 | 333.2701 | 0.0311 | 9.2400e-003 | 336.8013 |
| Mobile | 0.3930 | 1.8451 | 4.4830 | 0.0200 | 2.2445 | 0.0130 | 2.2576 | 0.6019 | 0.0121 | 0.6141 | 0.0000 | 1,843.5948 | 1,843.5948 | 0.0550 | 0.0000 | 1,844.9692 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 14.8305 | 0.0000 | 14.8305 | 0.8765 | 0.0000 | 36.7420 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 9.9518 | 27.2139 | 37.1657 | 1.0276 | 0.0253 | 70.3800 |
| **Total** | **2.7300** | **2.0548** | **7.9327** | **0.0213** | **2.2445** | **0.0451** | **2.2897** | **0.6019** | **0.0442** | **0.6462** | **24.7823** | **2,209.1742** | **2,233.9565** | **1.9937** | **0.0345** | **2,294.0787** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **20.67** | **19.48** | **25.73** | **31.25** | **32.22** | **32.40** | **32.23** | **32.22** | **32.49** | **32.24** | **65.47** | **31.30** | **32.04** | **59.43** | **23.90** | **32.99** |

## 2.3 Vegetation

### Vegetation

| | CO2e |
|---|---|
| Category | MT |
| Vegetation Land Change | -637.8800 |
| **Total** | **-637.8800** |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | Demolition | Demolition | 1/1/2027 | 12/31/2026 | 5 | 0 | |
| 2 | Site Preparation | Site Preparation | 1/1/2027 | 1/14/2027 | 5 | 10 | |
| 3 | Grading | Grading | 1/15/2027 | 6/17/2027 | 5 | 110 | |
| 4 | Infrastructure Improvements | Trenching | 6/18/2027 | 9/17/2027 | 5 | 66 | |
| 5 | Paving | Paving | 9/18/2027 | 10/19/2027 | 5 | 22 | |
| 6 | Building Construction | Building Construction | 10/20/2027 | 12/31/2029 | 5 | 574 | |
| 7 | Architectural Coating | Architectural Coating | 2/1/2028 | 12/31/2029 | 5 | 500 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 495**

**Acres of Paving: 2.34**

**Residential Indoor: 1,215,000; Residential Outdoor: 405,000; Non-Residential Indoor: 4,500; Non-Residential Outdoor: 1,500; Striped**

**OffRoad Equipment**

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Demolition | Excavators | 3 | 8.00 | 158 | 0.38 |
| Demolition | Rubber Tired Dozers | 2 | 8.00 | 247 | 0.40 |
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 4 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |

| | | | | | |
|---|---|---|---|---|---|
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 3 | 6.00 | 78 | 0.48 |
| Infrastructure Improvements | Excavators | 3 | 8.00 | 158 | 0.38 |
| Infrastructure Improvements | Rubber Tired Loaders | 3 | 8.00 | 203 | 0.36 |
| Infrastructure Improvements | Tractors/Loaders/Backhoes | 3 | 8.00 | 97 | 0.37 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Demolition | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 10 | 25.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 1,506.00 | 283.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 3 | 301.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Infrastructure Improvements | 9 | 23.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

## 3.3 Site Preparation - 2027

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.0903 | 0.0000 | 0.0903 | 0.0497 | 0.0000 | 0.0497 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0124 | 0.1262 | 0.0896 | 1.9000e-004 | | 5.4300e-003 | 5.4300e-003 | | 5.0000e-003 | 5.0000e-003 | 0.0000 | 16.7335 | 16.7335 | 5.4100e-003 | 0.0000 | 16.8688 |
| **Total** | **0.0124** | **0.1262** | **0.0896** | **1.9000e-004** | **0.0903** | **5.4300e-003** | **0.0958** | **0.0497** | **5.0000e-003** | **0.0547** | **0.0000** | **16.7335** | **16.7335** | **5.4100e-003** | **0.0000** | **16.8688** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.9000e-004 | 1.1000e-004 | 1.2900e-003 | 1.0000e-005 | 7.1000e-004 | 0.0000 | 7.2000e-004 | 1.9000e-004 | 0.0000 | 1.9000e-004 | 0.0000 | 0.4779 | 0.4779 | 1.0000e-005 | 0.0000 | 0.4781 |
| **Total** | **1.9000e-004** | **1.1000e-004** | **1.2900e-003** | **1.0000e-005** | **7.1000e-004** | **0.0000** | **7.2000e-004** | **1.9000e-004** | **0.0000** | **1.9000e-004** | **0.0000** | **0.4779** | **0.4779** | **1.0000e-005** | **0.0000** | **0.4781** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.0386 | 0.0000 | 0.0386 | 0.0212 | 0.0000 | 0.0212 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 2.3300e-003 | 0.0101 | 0.1043 | 1.9000e-004 | | 3.1000e-004 | 3.1000e-004 | | 3.1000e-004 | 3.1000e-004 | 0.0000 | 16.7335 | 16.7335 | 5.4100e-003 | 0.0000 | 16.8688 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | **2.3300e-003** | **0.0101** | **0.1043** | **1.9000e-004** | **0.0386** | **3.1000e-004** | **0.0389** | **0.0212** | **3.1000e-004** | **0.0215** | **0.0000** | **16.7335** | **16.7335** | **5.4100e-003** | **0.0000** | **16.8688** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.9000e-004 | 1.1000e-004 | 1.2900e-003 | 1.0000e-005 | 6.8000e-004 | 0.0000 | 6.8000e-004 | 1.8000e-004 | 0.0000 | 1.8000e-004 | 0.0000 | 0.4779 | 0.4779 | 1.0000e-005 | 0.0000 | 0.4781 |
| **Total** | **1.9000e-004** | **1.1000e-004** | **1.2900e-003** | **1.0000e-005** | **6.8000e-004** | **0.0000** | **6.8000e-004** | **1.8000e-004** | **0.0000** | **1.8000e-004** | **0.0000** | **0.4779** | **0.4779** | **1.0000e-005** | **0.0000** | **0.4781** |

## 3.4 Grading - 2027

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.5937 | 0.0000 | 0.5937 | 0.2104 | 0.0000 | 0.2104 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.2335 | 2.2377 | 2.0401 | 5.0800e-003 | | 0.0898 | 0.0898 | | 0.0826 | 0.0826 | 0.0000 | 446.2910 | 446.2910 | 0.1443 | 0.0000 | 449.8995 |
| **Total** | **0.2335** | **2.2377** | **2.0401** | **5.0800e-003** | **0.5937** | **0.0898** | **0.6835** | **0.2104** | **0.0826** | **0.2930** | **0.0000** | **446.2910** | **446.2910** | **0.1443** | **0.0000** | **449.8995** |

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 2.9000e-003 | 1.6400e-003 | 0.0198 | 8.0000e-005 | 0.0109 | 6.0000e-005 | 0.0110 | 2.9000e-003 | 6.0000e-005 | 2.9600e-003 | 0.0000 | 7.3007 | 7.3007 | 1.1000e-004 | 0.0000 | 7.3035 |
| **Total** | **2.9000e-003** | **1.6400e-003** | **0.0198** | **8.0000e-005** | **0.0109** | **6.0000e-005** | **0.0110** | **2.9000e-003** | **6.0000e-005** | **2.9600e-003** | **0.0000** | **7.3007** | **7.3007** | **1.1000e-004** | **0.0000** | **7.3035** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.2538 | 0.0000 | 0.2538 | 0.0900 | 0.0000 | 0.0900 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0624 | 0.2704 | 2.5668 | 5.0800e-003 | | 8.3200e-003 | 8.3200e-003 | | 8.3200e-003 | 8.3200e-003 | 0.0000 | 446.2905 | 446.2905 | 0.1443 | 0.0000 | 449.8990 |
| **Total** | **0.0624** | **0.2704** | **2.5668** | **5.0800e-003** | **0.2538** | **8.3200e-003** | **0.2621** | **0.0900** | **8.3200e-003** | **0.0983** | **0.0000** | **446.2905** | **446.2905** | **0.1443** | **0.0000** | **449.8990** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Worker | 2.9000e-003 | 1.6400e-003 | 0.0198 | 8.0000e-005 | 0.0103 | 6.0000e-005 | 0.0104 | 2.7600e-003 | 6.0000e-005 | 2.8200e-003 | 0.0000 | 7.3007 | 7.3007 | 1.1000e-004 | 0.0000 | 7.3035 |
| **Total** | **2.9000e-003** | **1.6400e-003** | **0.0198** | **8.0000e-005** | **0.0103** | **6.0000e-005** | **0.0104** | **2.7600e-003** | **6.0000e-005** | **2.8200e-003** | **0.0000** | **7.3007** | **7.3007** | **1.1000e-004** | **0.0000** | **7.3035** |

## 3.5 Infrastructure Improvements - 2027

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0523 | 0.4371 | 0.6891 | 1.4400e-003 | | 0.0175 | 0.0175 | | 0.0161 | 0.0161 | 0.0000 | 126.4557 | 126.4557 | 0.0409 | 0.0000 | 127.4782 |
| **Total** | **0.0523** | **0.4371** | **0.6891** | **1.4400e-003** | | **0.0175** | **0.0175** | | **0.0161** | **0.0161** | **0.0000** | **126.4557** | **126.4557** | **0.0409** | **0.0000** | **127.4782** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.6000e-003 | 9.1000e-004 | 0.0109 | 4.0000e-005 | 6.0200e-003 | 3.0000e-005 | 6.0500e-003 | 1.6000e-003 | 3.0000e-005 | 1.6300e-003 | 0.0000 | 4.0300 | 4.0300 | 6.0000e-005 | 0.0000 | 4.0316 |
| **Total** | **1.6000e-003** | **9.1000e-004** | **0.0109** | **4.0000e-005** | **6.0200e-003** | **3.0000e-005** | **6.0500e-003** | **1.6000e-003** | **3.0000e-005** | **1.6300e-003** | **0.0000** | **4.0300** | **4.0300** | **6.0000e-005** | **0.0000** | **4.0316** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0177 | 0.0767 | 0.9005 | 1.4400e-003 | | 2.3600e-003 | 2.3600e-003 | | 2.3600e-003 | 2.3600e-003 | 0.0000 | 126.4555 | 126.4555 | 0.0409 | 0.0000 | 127.4780 |
| **Total** | **0.0177** | **0.0767** | **0.9005** | **1.4400e-003** | | **2.3600e-003** | **2.3600e-003** | | **2.3600e-003** | **2.3600e-003** | **0.0000** | **126.4555** | **126.4555** | **0.0409** | **0.0000** | **127.4780** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.6000e-003 | 9.1000e-004 | 0.0109 | 4.0000e-005 | 5.7100e-003 | 3.0000e-005 | 5.7400e-003 | 1.5200e-003 | 3.0000e-005 | 1.5500e-003 | 0.0000 | 4.0300 | 4.0300 | 6.0000e-005 | 0.0000 | 4.0316 |
| **Total** | **1.6000e-003** | **9.1000e-004** | **0.0109** | **4.0000e-005** | **5.7100e-003** | **3.0000e-005** | **5.7400e-003** | **1.5200e-003** | **3.0000e-005** | **1.5500e-003** | **0.0000** | **4.0300** | **4.0300** | **6.0000e-005** | **0.0000** | **4.0316** |

## 3.6 Paving - 2027

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0101 | 0.0944 | 0.1604 | 2.5000e-004 | | 4.6000e-003 | 4.6000e-003 | | 4.2400e-003 | 4.2400e-003 | 0.0000 | 22.0212 | 22.0212 | 7.1200e-003 | 0.0000 | 22.1992 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Paving | 3.0700e-003 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0131** | **0.0944** | **0.1604** | **2.5000e-004** | | **4.6000e-003** | **4.6000e-003** | | **4.2400e-003** | **4.2400e-003** | **0.0000** | **22.0212** | **22.0212** | **7.1200e-003** | **0.0000** | **22.1992** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 3.5000e-004 | 2.0000e-004 | 2.3700e-003 | 1.0000e-005 | 1.3100e-003 | 1.0000e-005 | 1.3200e-003 | 3.5000e-004 | 1.0000e-005 | 3.5000e-004 | 0.0000 | 0.8761 | 0.8761 | 1.0000e-005 | 0.0000 | 0.8764 |
| **Total** | **3.5000e-004** | **2.0000e-004** | **2.3700e-003** | **1.0000e-005** | **1.3100e-003** | **1.0000e-005** | **1.3200e-003** | **3.5000e-004** | **1.0000e-005** | **3.5000e-004** | **0.0000** | **0.8761** | **0.8761** | **1.0000e-005** | **0.0000** | **0.8764** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 3.0900e-003 | 0.0134 | 0.1903 | 2.5000e-004 | | 4.1000e-004 | 4.1000e-004 | | 4.1000e-004 | 4.1000e-004 | 0.0000 | 22.0212 | 22.0212 | 7.1200e-003 | 0.0000 | 22.1992 |
| Paving | 3.0700e-003 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **6.1600e-003** | **0.0134** | **0.1903** | **2.5000e-004** | | **4.1000e-004** | **4.1000e-004** | | **4.1000e-004** | **4.1000e-004** | **0.0000** | **22.0212** | **22.0212** | **7.1200e-003** | **0.0000** | **22.1992** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 3.5000e-004 | 2.0000e-004 | 2.3700e-003 | 1.0000e-005 | 1.2400e-003 | 1.0000e-005 | 1.2500e-003 | 3.3000e-004 | 1.0000e-005 | 3.4000e-004 | 0.0000 | 0.8761 | 0.8761 | 1.0000e-005 | 0.0000 | 0.8764 |
| **Total** | **3.5000e-004** | **2.0000e-004** | **2.3700e-003** | **1.0000e-005** | **1.2400e-003** | **1.0000e-005** | **1.2500e-003** | **3.3000e-004** | **1.0000e-005** | **3.4000e-004** | **0.0000** | **0.8761** | **0.8761** | **1.0000e-005** | **0.0000** | **0.8764** |

## 3.7 Building Construction - 2027

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0362 | 0.3305 | 0.4262 | 7.1000e-004 | | 0.0140 | 0.0140 | | 0.0132 | 0.0132 | 0.0000 | 61.4587 | 61.4587 | 0.0145 | 0.0000 | 61.8198 |
| **Total** | **0.0362** | **0.3305** | **0.4262** | **7.1000e-004** | | **0.0140** | **0.0140** | | **0.0132** | **0.0132** | **0.0000** | **61.4587** | **61.4587** | **0.0145** | **0.0000** | **61.8198** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vendor | 0.0154 | 0.5271 | 0.1458 | 1.9000e-003 | 0.0493 | 6.1000e-004 | 0.0499 | 0.0143 | 5.8000e-004 | 0.0148 | 0.0000 | 182.2169 | 182.2169 | 6.3200e-003 | 0.0000 | 182.3749 |
| Worker | 0.0843 | 0.0476 | 0.5737 | 2.3400e-003 | 0.3165 | 1.7500e-003 | 0.3183 | 0.0842 | 1.6100e-003 | 0.0858 | 0.0000 | 211.9006 | 211.9006 | 3.2900e-003 | 0.0000 | 211.9830 |
| **Total** | **0.0996** | **0.5748** | **0.7194** | **4.2400e-003** | **0.3659** | **2.3600e-003** | **0.3682** | **0.0984** | **2.1900e-003** | **0.1006** | **0.0000** | **394.1175** | **394.1175** | **9.6100e-003** | **0.0000** | **394.3579** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0134 | 0.0682 | 0.4668 | 7.1000e-004 | | 2.0900e-003 | 2.0900e-003 | | 2.0900e-003 | 2.0900e-003 | 0.0000 | 61.4586 | 61.4586 | 0.0145 | 0.0000 | 61.8198 |
| **Total** | **0.0134** | **0.0682** | **0.4668** | **7.1000e-004** | | **2.0900e-003** | **2.0900e-003** | | **2.0900e-003** | **2.0900e-003** | **0.0000** | **61.4586** | **61.4586** | **0.0145** | **0.0000** | **61.8198** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0154 | 0.5271 | 0.1458 | 1.9000e-003 | 0.0473 | 6.1000e-004 | 0.0479 | 0.0138 | 5.8000e-004 | 0.0143 | 0.0000 | 182.2169 | 182.2169 | 6.3200e-003 | 0.0000 | 182.3749 |
| Worker | 0.0843 | 0.0476 | 0.5737 | 2.3400e-003 | 0.3001 | 1.7500e-003 | 0.3019 | 0.0802 | 1.6100e-003 | 0.0818 | 0.0000 | 211.9006 | 211.9006 | 3.2900e-003 | 0.0000 | 211.9830 |
| **Total** | **0.0996** | **0.5748** | **0.7194** | **4.2400e-003** | **0.3474** | **2.3600e-003** | **0.3497** | **0.0939** | **2.1900e-003** | **0.0961** | **0.0000** | **394.1175** | **394.1175** | **9.6100e-003** | **0.0000** | **394.3579** |

## 3.7 Building Construction - 2028

## Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1778 | 1.6211 | 2.0910 | 3.5000e-003 | | 0.0686 | 0.0686 | | 0.0645 | 0.0645 | 0.0000 | 301.4953 | 301.4953 | 0.0709 | 0.0000 | 303.2671 |
| **Total** | **0.1778** | **1.6211** | **2.0910** | **3.5000e-003** | | **0.0686** | **0.0686** | | **0.0645** | **0.0645** | **0.0000** | **301.4953** | **301.4953** | **0.0709** | **0.0000** | **303.2671** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0740 | 2.5545 | 0.7046 | 9.2800e-003 | 0.2420 | 2.9000e-003 | 0.2449 | 0.0700 | 2.7700e-003 | 0.0727 | 0.0000 | 889.7979 | 889.7979 | 0.0303 | 0.0000 | 890.5555 |
| Worker | 0.3892 | 0.2150 | 2.6400 | 0.0111 | 1.5528 | 7.9600e-003 | 1.5607 | 0.4130 | 7.3200e-003 | 0.4203 | 0.0000 | 1,006.8230 | 1,006.8230 | 0.0148 | 0.0000 | 1,007.1934 |
| **Total** | **0.4632** | **2.7695** | **3.3446** | **0.0204** | **1.7948** | **0.0109** | **1.8056** | **0.4829** | **0.0101** | **0.4930** | **0.0000** | **1,896.6209** | **1,896.6209** | **0.0451** | **0.0000** | **1,897.7488** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 0.0655 | 0.3345 | 2.2900 | 3.5000e-003 | | 0.0102 | 0.0102 | | 0.0102 | 0.0102 | 0.0000 | 301.4949 | 301.4949 | 0.0709 | 0.0000 | 303.2667 |
| **Total** | **0.0655** | **0.3345** | **2.2900** | **3.5000e-003** | | **0.0102** | **0.0102** | | **0.0102** | **0.0102** | **0.0000** | **301.4949** | **301.4949** | **0.0709** | **0.0000** | **303.2667** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0740 | 2.5545 | 0.7046 | 9.2800e-003 | 0.2318 | 2.9000e-003 | 0.2347 | 0.0675 | 2.7700e-003 | 0.0702 | 0.0000 | 889.7979 | 889.7979 | 0.0303 | 0.0000 | 890.5555 |
| Worker | 0.3892 | 0.2150 | 2.6400 | 0.0111 | 1.4722 | 7.9600e-003 | 1.4802 | 0.3932 | 7.3200e-003 | 0.4005 | 0.0000 | 1,006.8230 | 1,006.8230 | 0.0148 | 0.0000 | 1,007.1934 |
| **Total** | **0.4632** | **2.7695** | **3.3446** | **0.0204** | **1.7040** | **0.0109** | **1.7149** | **0.4607** | **0.0101** | **0.4708** | **0.0000** | **1,896.6209** | **1,896.6209** | **0.0451** | **0.0000** | **1,897.7488** |

## 3.7 Building Construction - 2029

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1785 | 1.6273 | 2.0991 | 3.5200e-003 | | 0.0689 | 0.0689 | | 0.0648 | 0.0648 | 0.0000 | 302.6549 | 302.6549 | 0.0711 | 0.0000 | 304.4335 |
| **Total** | **0.1785** | **1.6273** | **2.0991** | **3.5200e-003** | | **0.0689** | **0.0689** | | **0.0648** | **0.0648** | **0.0000** | **302.6549** | **302.6549** | **0.0711** | **0.0000** | **304.4335** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0728 | 2.5297 | 0.6950 | 9.2700e-003 | 0.2430 | 2.8600e-003 | 0.2458 | 0.0702 | 2.7300e-003 | 0.0730 | 0.0000 | 888.5576 | 888.5576 | 0.0299 | 0.0000 | 889.3060 |
| Worker | 0.3647 | 0.1984 | 2.4846 | 0.0108 | 1.5587 | 7.4200e-003 | 1.5662 | 0.4146 | 6.8300e-003 | 0.4214 | 0.0000 | 981.9215 | 981.9215 | 0.0136 | 0.0000 | 982.2617 |
| **Total** | **0.4375** | **2.7281** | **3.1795** | **0.0201** | **1.8017** | **0.0103** | **1.8120** | **0.4848** | **9.5600e-003** | **0.4944** | **0.0000** | **1,870.4791** | **1,870.4791** | **0.0435** | **0.0000** | **1,871.5676** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0658 | 0.3358 | 2.2988 | 3.5200e-003 | | 0.0103 | 0.0103 | | 0.0103 | 0.0103 | 0.0000 | 302.6545 | 302.6545 | 0.0711 | 0.0000 | 304.4331 |
| **Total** | **0.0658** | **0.3358** | **2.2988** | **3.5200e-003** | | **0.0103** | **0.0103** | | **0.0103** | **0.0103** | **0.0000** | **302.6545** | **302.6545** | **0.0711** | **0.0000** | **304.4331** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0728 | 2.5297 | 0.6950 | 9.2700e-003 | 0.2327 | 2.8600e-003 | 0.2355 | 0.0677 | 2.7300e-003 | 0.0705 | 0.0000 | 888.5576 | 888.5576 | 0.0299 | 0.0000 | 889.3060 |
| Worker | 0.3647 | 0.1984 | 2.4846 | 0.0108 | 1.4779 | 7.4200e-003 | 1.4853 | 0.3947 | 6.8300e-003 | 0.4015 | 0.0000 | 981.9215 | 981.9215 | 0.0136 | 0.0000 | 982.2617 |
| **Total** | **0.4375** | **2.7281** | **3.1795** | **0.0201** | **1.7106** | **0.0103** | **1.7209** | **0.4624** | **9.5600e-003** | **0.4720** | **0.0000** | **1,870.4791** | **1,870.4791** | **0.0435** | **0.0000** | **1,871.5676** |

## 3.8 Architectural Coating - 2028

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 2.0368 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0613 | 0.4107 | 0.6486 | 1.0700e-003 | | 0.0185 | 0.0185 | | 0.0185 | 0.0185 | 0.0000 | 91.5342 | 91.5342 | 4.9900e-003 | 0.0000 | 91.6590 |
| **Total** | **2.0980** | **0.4107** | **0.6486** | **1.0700e-003** | | **0.0185** | **0.0185** | | **0.0185** | **0.0185** | **0.0000** | **91.5342** | **91.5342** | **4.9900e-003** | **0.0000** | **91.6590** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0715 | 0.0395 | 0.4850 | 2.0400e-003 | 0.2853 | 1.4600e-003 | 0.2867 | 0.0759 | 1.3500e-003 | 0.0772 | 0.0000 | 184.9776 | 184.9776 | 2.7200e-003 | 0.0000 | 185.0457 |
| **Total** | **0.0715** | **0.0395** | **0.4850** | **2.0400e-003** | **0.2853** | **1.4600e-003** | **0.2867** | **0.0759** | **1.3500e-003** | **0.0772** | **0.0000** | **184.9776** | **184.9776** | **2.7200e-003** | **0.0000** | **185.0457** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 2.0368 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0107 | 0.0462 | 0.6569 | 1.0700e-003 | | 1.4200e-003 | 1.4200e-003 | | 1.4200e-003 | 1.4200e-003 | 0.0000 | 91.5340 | 91.5340 | 4.9900e-003 | 0.0000 | 91.6589 |
| **Total** | **2.0474** | **0.0462** | **0.6569** | **1.0700e-003** | | **1.4200e-003** | **1.4200e-003** | | **1.4200e-003** | **1.4200e-003** | **0.0000** | **91.5340** | **91.5340** | **4.9900e-003** | **0.0000** | **91.6589** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0715 | 0.0395 | 0.4850 | 2.0400e-003 | 0.2705 | 1.4600e-003 | 0.2720 | 0.0722 | 1.3500e-003 | 0.0736 | 0.0000 | 184.9776 | 184.9776 | 2.7200e-003 | 0.0000 | 185.0457 |
| **Total** | **0.0715** | **0.0395** | **0.4850** | **2.0400e-003** | **0.2705** | **1.4600e-003** | **0.2720** | **0.0722** | **1.3500e-003** | **0.0736** | **0.0000** | **184.9776** | **184.9776** | **2.7200e-003** | **0.0000** | **185.0457** |

## 3.8 Architectural Coating - 2029

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Archit. Coating | 2.2242 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0669 | 0.4485 | 0.7083 | 1.1600e-003 | | 0.0202 | 0.0202 | | 0.0202 | 0.0202 | 0.0000 | 99.9599 | 99.9599 | 5.4500e-003 | 0.0000 | 100.0962 |
| **Total** | **2.2911** | **0.4485** | **0.7083** | **1.1600e-003** | | **0.0202** | **0.0202** | | **0.0202** | **0.0202** | **0.0000** | **99.9599** | **99.9599** | **5.4500e-003** | **0.0000** | **100.0962** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0729 | 0.0397 | 0.4966 | 2.1700e-003 | 0.3115 | 1.4800e-003 | 0.3130 | 0.0829 | 1.3600e-003 | 0.0842 | 0.0000 | 196.2539 | 196.2539 | 2.7200e-003 | 0.0000 | 196.3219 |
| **Total** | **0.0729** | **0.0397** | **0.4966** | **2.1700e-003** | **0.3115** | **1.4800e-003** | **0.3130** | **0.0829** | **1.3600e-003** | **0.0842** | **0.0000** | **196.2539** | **196.2539** | **2.7200e-003** | **0.0000** | **196.3219** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 2.2242 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0116 | 0.0504 | 0.7174 | 1.1600e-003 | | 1.5500e-003 | 1.5500e-003 | | 1.5500e-003 | 1.5500e-003 | 0.0000 | 99.9598 | 99.9598 | 5.4500e-003 | 0.0000 | 100.0961 |
| **Total** | **2.2359** | **0.0504** | **0.7174** | **1.1600e-003** | | **1.5500e-003** | **1.5500e-003** | | **1.5500e-003** | **1.5500e-003** | **0.0000** | **99.9598** | **99.9598** | **5.4500e-003** | **0.0000** | **100.0961** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0729 | 0.0397 | 0.4966 | 2.1700e-003 | 0.2954 | 1.4800e-003 | 0.2969 | 0.0789 | 1.3600e-003 | 0.0803 | 0.0000 | 196.2539 | 196.2539 | 2.7200e-003 | 0.0000 | 196.3219 |
| **Total** | **0.0729** | **0.0397** | **0.4966** | **2.1700e-003** | **0.2954** | **1.4800e-003** | **0.2969** | **0.0789** | **1.3600e-003** | **0.0803** | **0.0000** | **196.2539** | **196.2539** | **2.7200e-003** | **0.0000** | **196.3219** |

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

Increase Diversity

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

Implement NEV Network

Expand Transit Network

Implement Trip Reduction Program

Transit Subsidy

Employee Vanpool/Shuttle

Provide Riade Sharing Program

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.3930 | 1.8451 | 4.4830 | 0.0200 | 2.2445 | 0.0130 | 2.2576 | 0.6019 | 0.0121 | 0.6141 | 0.0000 | 1,843.5948 | 1,843.5948 | 0.0550 | 0.0000 | 1,844.9692 |
| Unmitigated | 0.4629 | 2.2069 | 6.1104 | 0.0288 | 3.3116 | 0.0183 | 3.3299 | 0.8881 | 0.0170 | 0.9051 | 0.0000 | 2,651.2351 | 2,651.2351 | 0.0737 | 0.0000 | 2,653.0766 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| City Park | 0.00 | 0.00 | 0.00 | | |
| Condo/Townhouse High Rise | 600.00 | 538.75 | 428.75 | 2,040,171 | 1,382,799 |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Recreational Swimming Pool | 0.00 | 0.00 | 0.00 | | |
| Retirement Community | 2,280.00 | 964.25 | 926.25 | 6,834,252 | 4,632,158 |
| Total | 2,880.00 | 1,503.00 | 1,355.00 | 8,874,423 | 6,014,956 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| City Park | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 66 | 28 | 6 |
| Condo/Townhouse High Rise | 16.80 | 7.50 | 8.90 | 31.00 | 15.00 | 54.00 | 86 | 11 | 3 |
| Parking Lot | 9.50 | 7.30 | 7.30 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Recreational Swimming Pool | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 52 | 39 | 9 |
| Retirement Community | 16.80 | 7.50 | 8.90 | 31.00 | 15.00 | 54.00 | 86 | 11 | 3 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| City Park | 0.606524 | 0.034895 | 0.184335 | 0.108602 | 0.012129 | 0.004836 | 0.010863 | 0.026200 | 0.001662 | 0.001538 | 0.005105 | 0.002652 | 0.000659 |
| Condo/Townhouse High Rise | 0.606524 | 0.034895 | 0.184335 | 0.108602 | 0.012129 | 0.004836 | 0.010863 | 0.026200 | 0.001662 | 0.001538 | 0.005105 | 0.002652 | 0.000659 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Parking Lot | 0.606524 | 0.034895 | 0.184335 | 0.108602 | 0.012129 | 0.004836 | 0.010863 | 0.026200 | 0.001662 | 0.001538 | 0.005105 | 0.002652 | 0.000659 |
| Recreational Swimming Pool | 0.606524 | 0.034895 | 0.184335 | 0.108602 | 0.012129 | 0.004836 | 0.010863 | 0.026200 | 0.001662 | 0.001538 | 0.005105 | 0.002652 | 0.000659 |
| Retirement Community | 0.606524 | 0.034895 | 0.184335 | 0.108602 | 0.012129 | 0.004836 | 0.010863 | 0.026200 | 0.001662 | 0.001538 | 0.005105 | 0.002652 | 0.000659 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Percent of Electricity Use Generated with Renewable Energy

Install Energy Efficient Appliances

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Electricity Mitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 137.5952 | 137.5952 | 0.0273 | 5.6500e-003 | 139.9635 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 181.5334 | 181.5334 | 0.0361 | 7.4600e-003 | 184.6580 |
| NaturalGas Mitigated | 0.0198 | 0.1690 | 0.0719 | 1.0800e-003 | | 0.0137 | 0.0137 | | 0.0137 | 0.0137 | 0.0000 | 195.6749 | 195.6749 | 3.7500e-003 | 3.5900e-003 | 196.8377 |
| NaturalGas Unmitigated | 0.0320 | 0.2730 | 0.1162 | 1.7400e-003 | | 0.0221 | 0.0221 | | 0.0221 | 0.0221 | 0.0000 | 316.1478 | 316.1478 | 6.0600e-003 | 5.8000e-003 | 318.0265 |

### 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Condo/Townhouse High Rise | 1.07993e+006 | 5.8200e-003 | 0.0498 | 0.0212 | 3.2000e-004 | | 4.0200e-003 | 4.0200e-003 | | 4.0200e-003 | 4.0200e-003 | 0.0000 | 57.6292 | 57.6292 | 1.1000e-003 | 1.0600e-003 | 57.9717 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Retirement Community | 4.84445e+006 | 0.0261 | 0.2232 | 0.0950 | 1.4200e-003 | | 0.0181 | 0.0181 | | 0.0181 | 0.0181 | 0.0000 | 258.5185 | 258.5185 | 4.9500e-003 | 4.7400e-003 | 260.0548 |
| **Total** | | **0.0319** | **0.2730** | **0.1162** | **1.7400e-003** | | **0.0221** | **0.0221** | | **0.0221** | **0.0221** | **0.0000** | **316.1477** | **316.1477** | **6.0500e-003** | **5.8000e-003** | **318.0265** |

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Condo/Townhouse High Rise | 696020 | 3.7500e-003 | 0.0321 | 0.0137 | 2.0000e-004 | | 2.5900e-003 | 2.5900e-003 | | 2.5900e-003 | 2.5900e-003 | 0.0000 | 37.1423 | 37.1423 | 7.1000e-004 | 6.8000e-004 | 37.3630 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Retirement Community | 2.97079e+006 | 0.0160 | 0.1369 | 0.0583 | 8.7000e-004 | | 0.0111 | 0.0111 | | 0.0111 | 0.0111 | 0.0000 | 158.5327 | 158.5327 | 3.0400e-003 | 2.9100e-003 | 159.4747 |
| **Total** | | **0.0198** | **0.1690** | **0.0719** | **1.0700e-003** | | **0.0137** | **0.0137** | | **0.0137** | **0.0137** | **0.0000** | **195.6749** | **195.6749** | **3.7500e-003** | **3.5900e-003** | **196.8377** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|

| Land Use | kWh/yr | MT/yr | | | |
|---|---|---|---|---|---|
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Condo/Townhouse High Rise | 548501 | 36.3242 | 7.2200e-003 | 1.4900e-003 | 36.9494 |
| Parking Lot | 36400 | 2.4106 | 4.8000e-004 | 1.0000e-004 | 2.4521 |
| Recreational Swimming Pool | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Retirement Community | 2.15628e+006 | 142.7986 | 0.0284 | 5.8700e-003 | 145.2565 |
| **Total** | | **181.5334** | **0.0361** | **7.4600e-003** | **184.6580** |

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Condo/Townhouse High Rise | 418082 | 27.6872 | 5.5000e-003 | 1.1400e-003 | 28.1638 |
| Parking Lot | 9100 | 0.6026 | 1.2000e-004 | 2.0000e-005 | 0.6130 |
| Recreational Swimming Pool | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Retirement Community | 1.65053e+006 | 109.3053 | 0.0217 | 4.4900e-003 | 111.1867 |
| **Total** | | **137.5952** | **0.0273** | **5.6500e-003** | **139.9636** |

## 6.0 Area Detail

### 6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

Use Low VOC Cleaning Supplies

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 2.3172 | 0.0408 | 3.3778 | 1.5000e-004 | | 0.0184 | 0.0184 | | 0.0184 | 0.0184 | 0.0000 | 5.0954 | 5.0954 | 3.6400e-003 | 0.0000 | 5.1863 |
| Unmitigated | 2.9465 | 0.0720 | 4.4550 | 3.7000e-004 | | 0.0264 | 0.0264 | | 0.0264 | 0.0264 | 0.0000 | 31.2521 | 31.2521 | 7.4100e-003 | 4.4000e-004 | 31.5683 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.4261 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 2.3848 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 2.4200e-003 | 0.0207 | 8.8100e-003 | 1.3000e-004 | | 1.6700e-003 | 1.6700e-003 | | 1.6700e-003 | 1.6700e-003 | 0.0000 | 23.9691 | 23.9691 | 4.6000e-004 | 4.4000e-004 | 24.1116 |
| Landscaping | 0.1332 | 0.0513 | 4.4462 | 2.4000e-004 | | 0.0247 | 0.0247 | | 0.0247 | 0.0247 | 0.0000 | 7.2830 | 7.2830 | 6.9500e-003 | 0.0000 | 7.4567 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | **2.9465** | **0.0720** | **4.4550** | **3.7000e-004** | | **0.0264** | **0.0264** | | **0.0264** | **0.0264** | **0.0000** | **31.2521** | **31.2521** | **7.4100e-003** | **4.4000e-004** | **31.5682** |

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.0378 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 2.2087 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 0.0706 | 0.0408 | 3.3778 | 1.5000e-004 | | 0.0184 | 0.0184 | | 0.0184 | 0.0184 | 0.0000 | 5.0954 | 5.0954 | 3.6400e-003 | 0.0000 | 5.1863 |
| **Total** | **2.3172** | **0.0408** | **3.3778** | **1.5000e-004** | | **0.0184** | **0.0184** | | **0.0184** | **0.0184** | **0.0000** | **5.0954** | **5.0954** | **3.6400e-003** | **0.0000** | **5.1863** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

Use Reclaimed Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Turf Reduction

Use Water Efficient Irrigation System

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 37.1657 | 1.0276 | 0.0253 | 70.3800 |
| Unmitigated | 47.7542 | 1.2847 | 0.0316 | 89.2944 |

## 7.2 Water by Land Use

### Unmitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| City Park | 0 / 67.0208 | 15.5345 | 3.0900e-003 | 6.4000e-004 | 15.8019 |
| Condo/Townhouse High Rise | 8.14425 / 5.13442 | 6.6923 | 0.2662 | 6.4400e-003 | 15.2649 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0.118286 / 0.0724981 | 0.0967 | 3.8700e-003 | 9.0000e-005 | 0.2212 |
| Retirement Community | 30.9482 / 19.5108 | 25.4307 | 1.0116 | 0.0245 | 58.0065 |
| **Total** | | **47.7542** | **1.2847** | **0.0316** | **89.2944** |

### Mitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |

| | | | | | |
|---|---|---|---|---|---|
| City Park | 0 / 50.346 | 11.6695 | 2.3200e-003 | 4.8000e-004 | 11.8704 |
| Condo/Townhouse High Rise | 6.5154 / 3.85698 | 5.2958 | 0.2130 | 5.1500e-003 | 12.1528 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0.094629 / 0.0544605 | 0.0766 | 3.0900e-003 | 7.0000e-005 | 0.1761 |
| Retirement Community | 24.7585 / 14.6565 | 20.1239 | 0.8092 | 0.0196 | 46.1807 |
| **Total** | | **37.1657** | **1.0276** | **0.0253** | **70.3800** |

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 14.8305 | 0.8765 | 0.0000 | 36.7420 |
| Unmitigated | 59.3221 | 3.5058 | 0.0000 | 146.9679 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|

| Land Use | tons | MT/yr | | | |
|---|---|---|---|---|---|
| City Park | 4.84 | 0.9825 | 0.0581 | 0.0000 | 2.4340 |
| Condo/Townhouse High Rise | 57.5 | 11.6720 | 0.6898 | 0.0000 | 28.9168 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 11.4 | 2.3141 | 0.1368 | 0.0000 | 5.7331 |
| Retirement Community | 218.5 | 44.3535 | 2.6212 | 0.0000 | 109.8840 |
| **Total** | | **59.3221** | **3.5058** | **0.0000** | **146.9679** |

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| City Park | 1.21 | 0.2456 | 0.0145 | 0.0000 | 0.6085 |
| Condo/Townhouse High Rise | 14.375 | 2.9180 | 0.1725 | 0.0000 | 7.2292 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 2.85 | 0.5785 | 0.0342 | 0.0000 | 1.4333 |
| Retirement Community | 54.625 | 11.0884 | 0.6553 | 0.0000 | 27.4710 |
| **Total** | | **14.8305** | **0.8765** | **0.0000** | **36.7420** |

## 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

**Boilers**

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

**User Defined Equipment**

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT | | | |
| Unmitigated | -637.8800 | 0.0000 | 0.0000 | -637.8800 |

### 11.1 Vegetation Land Change

**Vegetation Type**

| | Initial/Final | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| | Acres | MT | | | |
| Grassland | 204 / 56 | -637.8800 | 0.0000 | 0.0000 | -637.8800 |
| **Total** | | **-637.8800** | **0.0000** | **0.0000** | **-637.8800** |

# Vineyards at Deer Creek- Phase 3

**Contra Costa County, Summer**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Parking Lot | 260.00 | Space | 2.34 | 104,000.00 | 0 |
| City Park | 56.25 | Acre | 56.25 | 2,450,250.00 | 0 |
| Recreational Swimming Pool | 2.00 | 1000sqft | 0.05 | 2,000.00 | 0 |
| Condo/Townhouse High Rise | 125.00 | Dwelling Unit | 1.95 | 125,000.00 | 358 |
| Retirement Community | 475.00 | Dwelling Unit | 95.00 | 475,000.00 | 1359 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 58 |
| **Climate Zone** | 4 | | | **Operational Year** | 2030 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 146 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - Per PG&E 2018 CRSR

Land Use - Parking: assumed 2 spaces for 125 DUs, plus 10 extra spaces for recreation uses
City Park is open space/ agricultural uses

Construction Phase - Per Construction Questionnaire

Off-road Equipment - Estimated equipment use

Off-road Equipment -

Off-road Equipment - No demolition

Off-road Equipment - Estimated equipment use

Off-road Equipment -

Off-road Equipment - Estimated equipment use

Off-road Equipment -

Off-road Equipment -

Trips and VMT - vendor trips would be lower since city park was used to model the proposed natural open space, informal parkland, low impact trails, etc.

Demolition - No demolition

Grading - Balanced between all phases

Vehicle Trips - Per Fehr and Peers TIA 2019

Woodstoves - Per BAAQMD Regulation 6, Rule 3

Energy Use -

Land Use Change -

Construction Off-road Equipment Mitigation - Per BAAQMD basic control measure

Mobile Land Use Mitigation - Green building design elements include narrower roadways

Mobile Commute Mitigation -

Area Mitigation - No hearth, low VOC cleaning supplies, low VOC paint, and electric landscape equipment

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblAreaMitigation | UseLowVOCPaintNonresidentialExteriorValue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintNonresidentialInteriorValue | 100 | 10 |
| tblAreaMitigation | UseLowVOCPaintParkingCheck | False | True |
| tblAreaMitigation | UseLowVOCPaintParkingValue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintResidentialExteriorValue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintResidentialInteriorValue | 100 | 10 |
| tblConstDustMitigation | CleanPavedRoadPercentReduction | 0 | 6 |
| tblConstDustMitigation | WaterUnpavedRoadMoistureContent | 0 | 12 |
| tblConstDustMitigation | WaterUnpavedRoadVehicleSpeed | 0 | 15 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |

| | | | |
|---|---|---|---|
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 8.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 6.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 4.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 12.00 |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstructionPhase | NumDays | 220.00 | 500.00 |
| tblConstructionPhase | NumDays | 3,100.00 | 574.00 |
| tblConstructionPhase | NumDays | 200.00 | 0.00 |
| tblConstructionPhase | NumDays | 310.00 | 110.00 |

| | | | |
|---|---|---|---|
| tblConstructionPhase | NumDays | 220.00 | 22.00 |
| tblConstructionPhase | NumDays | 120.00 | 10.00 |
| tblFireplaces | NumberGas | 18.75 | 40.00 |
| tblFireplaces | NumberGas | 71.25 | 152.00 |
| tblFireplaces | NumberWood | 21.25 | 0.00 |
| tblFireplaces | NumberWood | 80.75 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 4.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 3.00 |
| tblProjectCharacteristics | CO2IntensityFactor | 641.35 | 146 |
| tblTripsAndVMT | VendorTripNumber | 483.00 | 283.00 |
| tblVehicleTrips | HO_TL | 5.70 | 8.90 |
| tblVehicleTrips | HO_TL | 5.70 | 8.90 |
| tblVehicleTrips | HS_TL | 4.80 | 7.50 |
| tblVehicleTrips | HS_TL | 4.80 | 7.50 |
| tblVehicleTrips | HW_TL | 10.80 | 16.80 |
| tblVehicleTrips | HW_TL | 10.80 | 16.80 |
| tblVehicleTrips | ST_TR | 22.75 | 0.00 |
| tblVehicleTrips | ST_TR | 9.10 | 0.00 |
| tblVehicleTrips | SU_TR | 16.74 | 0.00 |
| tblVehicleTrips | SU_TR | 13.60 | 0.00 |
| tblVehicleTrips | WD_TR | 1.89 | 0.00 |
| tblVehicleTrips | WD_TR | 4.18 | 4.80 |
| tblVehicleTrips | WD_TR | 33.82 | 0.00 |
| tblVehicleTrips | WD_TR | 2.40 | 4.80 |
| tblWoodstoves | NumberCatalytic | 2.50 | 0.00 |
| tblWoodstoves | NumberCatalytic | 9.50 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 2.50 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 9.50 | 0.00 |

## 2.0 Emissions Summary

## 2.1 Overall Construction (Maximum Daily Emission)

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2027 | 5.3576 | 40.7112 | 45.8379 | 0.1957 | 18.2141 | 1.6335 | 19.3017 | 9.9699 | 1.5028 | 10.9705 | 0.0000 | 19,823.1600 | 19,823.1600 | 2.8954 | 0.0000 | 19,848.2890 |
| 2028 | 23.3439 | 37.2069 | 54.3241 | 0.2199 | 16.7600 | 0.7777 | 17.5377 | 4.4889 | 0.7395 | 5.2284 | 0.0000 | 22,190.2971 | 22,190.2971 | 1.0608 | 0.0000 | 22,216.8162 |
| 2029 | 23.0737 | 36.8033 | 52.5551 | 0.2163 | 16.7600 | 0.7720 | 17.5320 | 4.4889 | 0.7343 | 5.2232 | 0.0000 | 21,832.9300 | 21,832.9300 | 1.0430 | 0.0000 | 21,859.0061 |
| **Maximum** | **23.3439** | **40.7112** | **54.3241** | **0.2199** | **18.2141** | **1.6335** | **19.3017** | **9.9699** | **1.5028** | **10.9705** | **0.0000** | **22,190.2971** | **22,190.2971** | **2.8954** | **0.0000** | **22,216.8162** |

### Mitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2027 | 4.4940 | 23.9428 | 47.3683 | 0.1957 | 13.5602 | 0.1674 | 13.7276 | 4.2827 | 0.1611 | 4.3455 | 0.0000 | 19,823.1600 | 19,823.1600 | 2.8954 | 0.0000 | 19,848.2890 |
| 2028 | 22.0569 | 24.2598 | 55.9243 | 0.2199 | 15.9040 | 0.1862 | 16.0902 | 4.2788 | 0.1794 | 4.4582 | 0.0000 | 22,190.2971 | 22,190.2971 | 1.0608 | 0.0000 | 22,216.8162 |
| 2029 | 21.7866 | 23.8561 | 54.1553 | 0.2163 | 15.9040 | 0.1806 | 16.0846 | 4.2788 | 0.1741 | 4.4529 | 0.0000 | 21,832.9300 | 21,832.9300 | 1.0430 | 0.0000 | 21,859.0061 |
| **Maximum** | **22.0569** | **24.2598** | **55.9243** | **0.2199** | **15.9040** | **0.1862** | **16.0902** | **4.2827** | **0.1794** | **4.4582** | **0.0000** | **22,190.2971** | **22,190.2971** | **2.8954** | **0.0000** | **22,216.8162** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **6.64** | **37.19** | **-3.10** | **0.00** | **12.30** | **83.22** | **15.58** | **32.23** | **82.71** | **38.12** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 2.2 Overall Operational

## Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 17.3165 | 4.2852 | 50.9835 | 0.0263 | | 0.5751 | 0.5751 | | 0.5751 | 0.5751 | 0.0000 | 4,832.7304 | 4,832.7304 | 0.1760 | 0.0870 | 4,863.0464 |
| Energy | 0.1750 | 1.4958 | 0.6365 | 9.5500e-003 | | 0.1209 | 0.1209 | | 0.1209 | 0.1209 | | 1,909.5520 | 1,909.5520 | 0.0366 | 0.0350 | 1,920.8995 |
| Mobile | 3.5031 | 13.7682 | 42.8715 | 0.1978 | 22.0031 | 0.1176 | 22.1207 | 5.8836 | 0.1094 | 5.9930 | | 20,033.1764 | 20,033.1764 | 0.5294 | | 20,046.4110 |
| **Total** | **20.9947** | **19.5492** | **94.4915** | **0.2337** | **22.0031** | **0.8136** | **22.8167** | **5.8836** | **0.8054** | **6.6890** | **0.0000** | **26,775.4588** | **26,775.4588** | **0.7420** | **0.1220** | **26,830.3569** |

## Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 13.0945 | 0.4529 | 37.5315 | 1.7000e-003 | | 0.2049 | 0.2049 | | 0.2049 | 0.2049 | 0.0000 | 62.4075 | 62.4075 | 0.0445 | 0.0000 | 63.5211 |
| Energy | 0.1083 | 0.9258 | 0.3940 | 5.9100e-003 | | 0.0749 | 0.0749 | | 0.0749 | 0.0749 | | 1,181.8886 | 1,181.8886 | 0.0227 | 0.0217 | 1,188.9120 |
| Mobile | 3.0456 | 11.5843 | 30.8064 | 0.1374 | 14.9134 | 0.0837 | 14.9971 | 3.9878 | 0.0778 | 4.0657 | | 13,921.9709 | 13,921.9709 | 0.3917 | | 13,931.7623 |
| **Total** | **16.2484** | **12.9630** | **68.7319** | **0.1450** | **14.9134** | **0.3634** | **15.2768** | **3.9878** | **0.3575** | **4.3454** | **0.0000** | **15,166.2670** | **15,166.2670** | **0.4589** | **0.0217** | **15,184.1954** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **22.61** | **33.69** | **27.26** | **37.96** | **32.22** | **55.33** | **33.05** | **32.22** | **55.61** | **35.04** | **0.00** | **43.36** | **43.36** | **38.16** | **82.23** | **43.41** |

# 3.0 Construction Detail

## Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Demolition | Demolition | 1/1/2027 | 12/31/2026 | 5 | 0 | |
| 2 | Site Preparation | Site Preparation | 1/1/2027 | 1/14/2027 | 5 | 10 | |
| 3 | Grading | Grading | 1/15/2027 | 6/17/2027 | 5 | 110 | |
| 4 | Infrastructure Improvements | Trenching | 6/18/2027 | 9/17/2027 | 5 | 66 | |
| 5 | Paving | Paving | 9/18/2027 | 10/19/2027 | 5 | 22 | |
| 6 | Building Construction | Building Construction | 10/20/2027 | 12/31/2029 | 5 | 574 | |
| 7 | Architectural Coating | Architectural Coating | 2/1/2028 | 12/31/2029 | 5 | 500 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 495**

**Acres of Paving: 2.34**

**Residential Indoor: 1,215,000; Residential Outdoor: 405,000; Non-Residential Indoor: 4,500; Non-Residential Outdoor: 1,500; Striped**

**OffRoad Equipment**

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Demolition | Excavators | 3 | 8.00 | 158 | 0.38 |
| Demolition | Rubber Tired Dozers | 2 | 8.00 | 247 | 0.40 |
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 4 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |

| | | | | | |
|---|---|---|---|---|---|
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 3 | 6.00 | 78 | 0.48 |
| Infrastructure Improvements | Excavators | 3 | 8.00 | 158 | 0.38 |
| Infrastructure Improvements | Rubber Tired Loaders | 3 | 8.00 | 203 | 0.36 |
| Infrastructure Improvements | Tractors/Loaders/Backhoes | 3 | 8.00 | 97 | 0.37 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Demolition | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 10 | 25.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 1,506.00 | 283.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 3 | 301.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Infrastructure Improvements | 9 | 23.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

## 3.3 Site Preparation - 2027

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 18.0663 | 0.0000 | 18.0663 | 9.9307 | 0.0000 | 9.9307 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.4727 | 25.2339 | 17.9118 | 0.0381 | | 1.0868 | 1.0868 | | 0.9999 | 0.9999 | | 3,689.1037 | 3,689.1037 | 1.1931 | | 3,718.9320 |
| **Total** | **2.4727** | **25.2339** | **17.9118** | **0.0381** | **18.0663** | **1.0868** | **19.1531** | **9.9307** | **0.9999** | **10.9305** | | **3,689.1037** | **3,689.1037** | **1.1931** | | **3,718.9320** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0409 | 0.0193 | 0.2939 | 1.1500e-003 | 0.1479 | 7.9000e-004 | 0.1487 | 0.0392 | 7.3000e-004 | 0.0400 | | 114.8261 | 114.8261 | 1.8000e-003 | | 114.8710 |
| **Total** | **0.0409** | **0.0193** | **0.2939** | **1.1500e-003** | **0.1479** | **7.9000e-004** | **0.1487** | **0.0392** | **7.3000e-004** | **0.0400** | | **114.8261** | **114.8261** | **1.8000e-003** | | **114.8710** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 7.7233 | 0.0000 | 7.7233 | 4.2454 | 0.0000 | 4.2454 | | | 0.0000 | | | 0.0000 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 0.4656 | 2.0175 | 20.8690 | 0.0381 | | 0.0621 | 0.0621 | | 0.0621 | 0.0621 | 0.0000 | 3,689.1037 | 3,689.1037 | 1.1931 | | 3,718.9320 |
| **Total** | **0.4656** | **2.0175** | **20.8690** | **0.0381** | **7.7233** | **0.0621** | **7.7854** | **4.2454** | **0.0621** | **4.3075** | **0.0000** | **3,689.1037** | **3,689.1037** | **1.1931** | | **3,718.9320** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0409 | 0.0193 | 0.2939 | 1.1500e-003 | 0.1402 | 7.9000e-004 | 0.1409 | 0.0373 | 7.3000e-004 | 0.0381 | | 114.8261 | 114.8261 | 1.8000e-003 | | 114.8710 |
| **Total** | **0.0409** | **0.0193** | **0.2939** | **1.1500e-003** | **0.1402** | **7.9000e-004** | **0.1409** | **0.0373** | **7.3000e-004** | **0.0381** | | **114.8261** | **114.8261** | **1.8000e-003** | | **114.8710** |

## 3.4 Grading - 2027

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 10.7943 | 0.0000 | 10.7943 | 3.8255 | 0.0000 | 3.8255 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.2449 | 40.6845 | 37.0923 | 0.0924 | | 1.6324 | 1.6324 | | 1.5018 | 1.5018 | | 8,944.5757 | 8,944.5757 | 2.8929 | | 9,016.8971 |
| **Total** | **4.2449** | **40.6845** | **37.0923** | **0.0924** | **10.7943** | **1.6324** | **12.4268** | **3.8255** | **1.5018** | **5.3274** | | **8,944.5757** | **8,944.5757** | **2.8929** | | **9,016.8971** |

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0568 | 0.0268 | 0.4082 | 1.6000e-003 | 0.2054 | 1.1000e-003 | 0.2065 | 0.0545 | 1.0100e-003 | 0.0555 | | 159.4808 | 159.4808 | 2.4900e-003 | | 159.5431 |
| **Total** | **0.0568** | **0.0268** | **0.4082** | **1.6000e-003** | **0.2054** | **1.1000e-003** | **0.2065** | **0.0545** | **1.0100e-003** | **0.0555** | | **159.4808** | **159.4808** | **2.4900e-003** | | **159.5431** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 4.6146 | 0.0000 | 4.6146 | 1.6354 | 0.0000 | 1.6354 | | | 0.0000 | | | 0.0000 |
| Off-Road | 1.1344 | 4.9156 | 46.6696 | 0.0924 | | 0.1513 | 0.1513 | | 0.1513 | 0.1513 | 0.0000 | 8,944.5757 | 8,944.5757 | 2.8929 | | 9,016.8971 |
| **Total** | **1.1344** | **4.9156** | **46.6696** | **0.0924** | **4.6146** | **0.1513** | **4.7658** | **1.6354** | **0.1513** | **1.7867** | **0.0000** | **8,944.5757** | **8,944.5757** | **2.8929** | | **9,016.8971** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0568 | 0.0268 | 0.4082 | 1.6000e-003 | 0.1947 | 1.1000e-003 | 0.1958 | 0.0518 | 1.0100e-003 | 0.0529 | | 159.4808 | 159.4808 | 2.4900e-003 | | 159.5431 |
| **Total** | **0.0568** | **0.0268** | **0.4082** | **1.6000e-003** | **0.1947** | **1.1000e-003** | **0.1958** | **0.0518** | **1.0100e-003** | **0.0529** | | **159.4808** | **159.4808** | **2.4900e-003** | | **159.5431** |

## 3.5 Infrastructure Improvements - 2027

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.5835 | 13.2463 | 20.8817 | 0.0436 | | 0.5293 | 0.5293 | | 0.4869 | 0.4869 | | 4,224.0467 | 4,224.0467 | 1.3661 | | 4,258.2003 |
| **Total** | **1.5835** | **13.2463** | **20.8817** | **0.0436** | | **0.5293** | **0.5293** | | **0.4869** | **0.4869** | | **4,224.0467** | **4,224.0467** | **1.3661** | | **4,258.2003** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0523 | 0.0246 | 0.3755 | 1.4700e-003 | 0.1889 | 1.0100e-003 | 0.1900 | 0.0501 | 9.3000e-004 | 0.0510 | | 146.7223 | 146.7223 | 2.2900e-003 | | 146.7796 |
| **Total** | **0.0523** | **0.0246** | **0.3755** | **1.4700e-003** | **0.1889** | **1.0100e-003** | **0.1900** | **0.0501** | **9.3000e-004** | **0.0510** | | **146.7223** | **146.7223** | **2.2900e-003** | | **146.7796** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.5366 | 2.3250 | 27.2871 | 0.0436 | | 0.0715 | 0.0715 | | 0.0715 | 0.0715 | 0.0000 | 4,224.0467 | 4,224.0467 | 1.3661 | | 4,258.2003 |
| **Total** | **0.5366** | **2.3250** | **27.2871** | **0.0436** | | **0.0715** | **0.0715** | | **0.0715** | **0.0715** | **0.0000** | **4,224.0467** | **4,224.0467** | **1.3661** | | **4,258.2003** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0523 | 0.0246 | 0.3755 | 1.4700e-003 | 0.1791 | 1.0100e-003 | 0.1801 | 0.0477 | 9.3000e-004 | 0.0486 | | 146.7223 | 146.7223 | 2.2900e-003 | | 146.7796 |
| **Total** | **0.0523** | **0.0246** | **0.3755** | **1.4700e-003** | **0.1791** | **1.0100e-003** | **0.1801** | **0.0477** | **9.3000e-004** | **0.0486** | | **146.7223** | **146.7223** | **2.2900e-003** | | **146.7796** |

## 3.6 Paving - 2027

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 0.9152 | 8.5816 | 14.5780 | 0.0228 | | 0.4185 | 0.4185 | | 0.3850 | 0.3850 | | 2,206.7452 | 2,206.7452 | 0.7137 | | 2,224.5878 |
| Paving | 0.2787 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.1938** | **8.5816** | **14.5780** | **0.0228** | | **0.4185** | **0.4185** | | **0.3850** | **0.3850** | | **2,206.7452** | **2,206.7452** | **0.7137** | | **2,224.5878** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0341 | 0.0161 | 0.2449 | 9.6000e-004 | 0.1232 | 6.6000e-004 | 0.1239 | 0.0327 | 6.0000e-004 | 0.0333 | | 95.6885 | 95.6885 | 1.5000e-003 | | 95.7259 |
| **Total** | **0.0341** | **0.0161** | **0.2449** | **9.6000e-004** | **0.1232** | **6.6000e-004** | **0.1239** | **0.0327** | **6.0000e-004** | **0.0333** | | **95.6885** | **95.6885** | **1.5000e-003** | | **95.7259** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.2805 | 1.2154 | 17.2957 | 0.0228 | | 0.0374 | 0.0374 | | 0.0374 | 0.0374 | 0.0000 | 2,206.7452 | 2,206.7452 | 0.7137 | | 2,224.5878 |
| Paving | 0.2787 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **0.5591** | **1.2154** | **17.2957** | **0.0228** | | **0.0374** | **0.0374** | | **0.0374** | **0.0374** | **0.0000** | **2,206.7452** | **2,206.7452** | **0.7137** | | **2,224.5878** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0341 | 0.0161 | 0.2449 | 9.6000e-004 | 0.1168 | 6.6000e-004 | 0.1175 | 0.0311 | 6.0000e-004 | 0.0317 | | 95.6885 | 95.6885 | 1.5000e-003 | | 95.7259 |
| **Total** | **0.0341** | **0.0161** | **0.2449** | **9.6000e-004** | **0.1168** | **6.6000e-004** | **0.1175** | **0.0311** | **6.0000e-004** | **0.0317** | | **95.6885** | **95.6885** | **1.5000e-003** | | **95.7259** |

## 3.7 Building Construction - 2027

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.5674 | 19.7568 | 5.1638 | 0.0725 | 1.9159 | 0.0226 | 1.9385 | 0.5515 | 0.0216 | 0.5731 | | 7,659.5652 | 7,659.5652 | 0.2540 | | 7,665.9154 |
| Worker | 3.4228 | 1.6132 | 24.5894 | 0.0963 | 12.3714 | 0.0660 | 12.4374 | 3.2815 | 0.0607 | 3.3422 | | 9,607.1204 | 9,607.1204 | 0.1502 | | 9,610.8755 |
| **Total** | **3.9902** | **21.3700** | **29.7533** | **0.1688** | **14.2873** | **0.0886** | **14.3759** | **3.8330** | **0.0823** | **3.9153** | | **17,266.6856** | **17,266.6856** | **0.4042** | | **17,276.7909** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.5038 | 2.5728 | 17.6150 | 0.0270 | | 0.0788 | 0.0788 | | 0.0788 | 0.0788 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **0.5038** | **2.5728** | **17.6150** | **0.0270** | | **0.0788** | **0.0788** | | **0.0788** | **0.0788** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.5674 | 19.7568 | 5.1638 | 0.0725 | 1.8339 | 0.0226 | 1.8565 | 0.5314 | 0.0216 | 0.5530 | | 7,659.5652 | 7,659.5652 | 0.2540 | | 7,665.9154 |
| Worker | 3.4228 | 1.6132 | 24.5894 | 0.0963 | 11.7263 | 0.0660 | 11.7923 | 3.1231 | 0.0607 | 3.1839 | | 9,607.1204 | 9,607.1204 | 0.1502 | | 9,610.8755 |
| **Total** | **3.9902** | **21.3700** | **29.7533** | **0.1688** | **13.5602** | **0.0886** | **13.6488** | **3.6545** | **0.0823** | **3.7369** | | **17,266.6856** | **17,266.6856** | **0.4042** | | **17,276.7909** |

## 3.7 Building Construction - 2028

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.5565 | 19.5199 | 5.0884 | 0.0721 | 1.9159 | 0.0221 | 1.9380 | 0.5515 | 0.0211 | 0.5727 | | 7,624.0747 | 7,624.0747 | 0.2484 | | 7,630.2838 |
| Worker | 3.2200 | 1.4842 | 23.1056 | 0.0932 | 12.3714 | 0.0612 | 12.4327 | 3.2815 | 0.0563 | 3.3378 | | 9,305.5331 | 9,305.5331 | 0.1378 | | 9,308.9792 |
| **Total** | **3.7765** | **21.0041** | **28.1940** | **0.1654** | **14.2873** | **0.0834** | **14.3707** | **3.8330** | **0.0775** | **3.9105** | | **16,929.6078** | **16,929.6078** | **0.3862** | | **16,939.2630** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| Category | lb/day | | | | | | | | | | lb/day | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 0.5038 | 2.5728 | 17.6150 | 0.0270 | | 0.0788 | 0.0788 | | 0.0788 | 0.0788 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **0.5038** | **2.5728** | **17.6150** | **0.0270** | | **0.0788** | **0.0788** | | **0.0788** | **0.0788** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.5565 | 19.5199 | 5.0884 | 0.0721 | 1.8340 | 0.0221 | 1.8561 | 0.5314 | 0.0211 | 0.5526 | | 7,624.0747 | 7,624.0747 | 0.2484 | | 7,630.2838 |
| Worker | 3.2200 | 1.4842 | 23.1056 | 0.0932 | 11.7263 | 0.0612 | 11.7876 | 3.1231 | 0.0563 | 3.1795 | | 9,305.5331 | 9,305.5331 | 0.1378 | | 9,308.9792 |
| **Total** | **3.7765** | **21.0041** | **28.1940** | **0.1654** | **13.5603** | **0.0834** | **13.6436** | **3.6546** | **0.0775** | **3.7320** | | **16,929.6078** | **16,929.6078** | **0.3862** | | **16,939.2630** |

## 3.7 Building Construction - 2029

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.5456 | 19.2585 | 5.0002 | 0.0717 | 1.9159 | 0.0217 | 1.9376 | 0.5516 | 0.0207 | 0.5723 | | 7,583.6883 | 7,583.6883 | 0.2445 | | 7,589.8005 |
| Worker | 3.0038 | 1.3656 | 21.7048 | 0.0906 | 12.3714 | 0.0569 | 12.4283 | 3.2815 | 0.0523 | 3.3338 | | 9,041.3533 | 9,041.3533 | 0.1263 | | 9,044.5108 |
| **Total** | **3.5494** | **20.6241** | **26.7050** | **0.1623** | **14.2874** | **0.0786** | **14.3659** | **3.8330** | **0.0730** | **3.9061** | | **16,625.0415** | **16,625.0415** | **0.3708** | | **16,634.3114** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.5038 | 2.5728 | 17.6150 | 0.0270 | | 0.0788 | 0.0788 | | 0.0788 | 0.0788 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **0.5038** | **2.5728** | **17.6150** | **0.0270** | | **0.0788** | **0.0788** | | **0.0788** | **0.0788** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| Category | lb/day | | | | | | | | | | | lb/day | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.5456 | 19.2585 | 5.0002 | 0.0717 | 1.8340 | 0.0217 | 1.8557 | 0.5314 | 0.0207 | 0.5522 | | 7,583.6883 | 7,583.6883 | 0.2445 | | 7,589.8005 |
| Worker | 3.0038 | 1.3656 | 21.7048 | 0.0906 | 11.7263 | 0.0569 | 11.7832 | 3.1231 | 0.0523 | 3.1754 | | 9,041.3533 | 9,041.3533 | 0.1263 | | 9,044.5108 |
| **Total** | **3.5494** | **20.6241** | **26.7050** | **0.1623** | **13.5603** | **0.0786** | **13.6389** | **3.6546** | **0.0730** | **3.7276** | | **16,625.0415** | **16,625.0415** | **0.3708** | | **16,634.3114** |

## 3.8 Architectural Coating - 2028

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | | lb/day | | | | |
| Archit. Coating | 17.0439 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.5126 | 3.4365 | 5.4274 | 8.9100e-003 | | 0.1545 | 0.1545 | | 0.1545 | 0.1545 | | 844.3442 | 844.3442 | 0.0461 | | 845.4956 |
| **Total** | **17.5565** | **3.4365** | **5.4274** | **8.9100e-003** | | **0.1545** | **0.1545** | | **0.1545** | **0.1545** | | **844.3442** | **844.3442** | **0.0461** | | **845.4956** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | | lb/day | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.6436 | 0.2967 | 4.6181 | 0.0186 | 2.4726 | 0.0122 | 2.4849 | 0.6559 | 0.0113 | 0.6671 | | 1,859.8708 | 1,859.8708 | 0.0276 | | 1,860.5596 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | **0.6436** | **0.2967** | **4.6181** | **0.0186** | **2.4726** | **0.0122** | **2.4849** | **0.6559** | **0.0113** | **0.6671** | | **1,859.8708** | **1,859.8708** | **0.0276** | | **1,860.5596** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 17.0439 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.0891 | 0.3863 | 5.4972 | 8.9100e-003 | | 0.0119 | 0.0119 | | 0.0119 | 0.0119 | 0.0000 | 844.3441 | 844.3441 | 0.0461 | | 845.4956 |
| **Total** | **17.1331** | **0.3863** | **5.4972** | **8.9100e-003** | | **0.0119** | **0.0119** | | **0.0119** | **0.0119** | **0.0000** | **844.3441** | **844.3441** | **0.0461** | | **845.4956** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.6436 | 0.2967 | 4.6181 | 0.0186 | 2.3437 | 0.0122 | 2.3560 | 0.6242 | 0.0113 | 0.6355 | | 1,859.8708 | 1,859.8708 | 0.0276 | | 1,860.5596 |
| **Total** | **0.6436** | **0.2967** | **4.6181** | **0.0186** | **2.3437** | **0.0122** | **2.3560** | **0.6242** | **0.0113** | **0.6355** | | **1,859.8708** | **1,859.8708** | **0.0276** | | **1,860.5596** |

## 3.8 Architectural Coating - 2029

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 17.0439 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.5126 | 3.4365 | 5.4274 | 8.9100e-003 | | 0.1545 | 0.1545 | | 0.1545 | 0.1545 | | 844.3442 | 844.3442 | 0.0461 | | 845.4956 |
| **Total** | **17.5565** | **3.4365** | **5.4274** | **8.9100e-003** | | **0.1545** | **0.1545** | | **0.1545** | **0.1545** | | **844.3442** | **844.3442** | **0.0461** | | **845.4956** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.6004 | 0.2730 | 4.3381 | 0.0181 | 2.4726 | 0.0114 | 2.4840 | 0.6559 | 0.0105 | 0.6663 | | 1,807.0699 | 1,807.0699 | 0.0252 | | 1,807.7010 |
| **Total** | **0.6004** | **0.2730** | **4.3381** | **0.0181** | **2.4726** | **0.0114** | **2.4840** | **0.6559** | **0.0105** | **0.6663** | | **1,807.0699** | **1,807.0699** | **0.0252** | | **1,807.7010** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 17.0439 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.0891 | 0.3863 | 5.4972 | 8.9100e-003 | | 0.0119 | 0.0119 | | 0.0119 | 0.0119 | 0.0000 | 844.3441 | 844.3441 | 0.0461 | | 845.4956 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | **17.1331** | **0.3863** | **5.4972** | **8.9100e-003** | | **0.0119** | **0.0119** | | **0.0119** | **0.0119** | **0.0000** | **844.3441** | **844.3441** | **0.0461** | | **845.4956** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.6004 | 0.2730 | 4.3381 | 0.0181 | 2.3437 | 0.0114 | 2.3551 | 0.6242 | 0.0105 | 0.6347 | | 1,807.0699 | 1,807.0699 | 0.0252 | | 1,807.7010 |
| **Total** | **0.6004** | **0.2730** | **4.3381** | **0.0181** | **2.3437** | **0.0114** | **2.3551** | **0.6242** | **0.0105** | **0.6347** | | **1,807.0699** | **1,807.0699** | **0.0252** | | **1,807.7010** |

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

Increase Diversity

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

Implement NEV Network

Expand Transit Network

Implement Trip Reduction Program

Transit Subsidy

Employee Vanpool/Shuttle

Provide Riade Sharing Program

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 3.0456 | 11.5843 | 30.8064 | 0.1374 | 14.9134 | 0.0837 | 14.9971 | 3.9878 | 0.0778 | 4.0657 | | 13,921.9709 | 13,921.9709 | 0.3917 | | 13,931.7623 |
| Unmitigated | 3.5031 | 13.7682 | 42.8715 | 0.1978 | 22.0031 | 0.1176 | 22.1207 | 5.8836 | 0.1094 | 5.9930 | | 20,033.1764 | 20,033.1764 | 0.5294 | | 20,046.4110 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| City Park | 0.00 | 0.00 | 0.00 | | |
| Condo/Townhouse High Rise | 600.00 | 538.75 | 428.75 | 2,040,171 | 1,382,799 |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Recreational Swimming Pool | 0.00 | 0.00 | 0.00 | | |
| Retirement Community | 2,280.00 | 964.25 | 926.25 | 6,834,252 | 4,632,158 |
| Total | 2,880.00 | 1,503.00 | 1,355.00 | 8,874,423 | 6,014,956 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| City Park | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 66 | 28 | 6 |
| Condo/Townhouse High Rise | 16.80 | 7.50 | 8.90 | 31.00 | 15.00 | 54.00 | 86 | 11 | 3 |
| Parking Lot | 9.50 | 7.30 | 7.30 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Recreational Swimming Pool | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 52 | 39 | 9 |
| Retirement Community | 16.80 | 7.50 | 8.90 | 31.00 | 15.00 | 54.00 | 86 | 11 | 3 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| City Park | 0.606524 | 0.034895 | 0.184335 | 0.108602 | 0.012129 | 0.004836 | 0.010863 | 0.026200 | 0.001662 | 0.001538 | 0.005105 | 0.002652 | 0.000659 |
| Condo/Townhouse High Rise | 0.606524 | 0.034895 | 0.184335 | 0.108602 | 0.012129 | 0.004836 | 0.010863 | 0.026200 | 0.001662 | 0.001538 | 0.005105 | 0.002652 | 0.000659 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Parking Lot | 0.606524 | 0.034895 | 0.184335 | 0.108602 | 0.012129 | 0.004836 | 0.010863 | 0.026200 | 0.001662 | 0.001538 | 0.005105 | 0.002652 | 0.000659 |
| Recreational Swimming Pool | 0.606524 | 0.034895 | 0.184335 | 0.108602 | 0.012129 | 0.004836 | 0.010863 | 0.026200 | 0.001662 | 0.001538 | 0.005105 | 0.002652 | 0.000659 |
| Retirement Community | 0.606524 | 0.034895 | 0.184335 | 0.108602 | 0.012129 | 0.004836 | 0.010863 | 0.026200 | 0.001662 | 0.001538 | 0.005105 | 0.002652 | 0.000659 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Percent of Electricity Use Generated with Renewable Energy

Install Energy Efficient Appliances

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.1083 | 0.9258 | 0.3940 | 5.9100e-003 | | 0.0749 | 0.0749 | | 0.0749 | 0.0749 | | 1,181.8886 | 1,181.8886 | 0.0227 | 0.0217 | 1,188.9120 |
| NaturalGas Unmitigated | 0.1750 | 1.4958 | 0.6365 | 9.5500e-003 | | 0.1209 | 0.1209 | | 0.1209 | 0.1209 | | 1,909.5520 | 1,909.5520 | 0.0366 | 0.0350 | 1,920.8995 |

### 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Condo/Townhouse High Rise | 2958.72 | 0.0319 | 0.2727 | 0.1160 | 1.7400e-003 | | 0.0221 | 0.0221 | | 0.0221 | 0.0221 | | 348.0842 | 348.0842 | 6.6700e-003 | 6.3800e-003 | 350.1527 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Retirement Community | 13272.5 | 0.1431 | 1.2232 | 0.5205 | 7.8100e-003 | | 0.0989 | 0.0989 | | 0.0989 | 0.0989 | | 1,561.4678 | 1,561.4678 | 0.0299 | 0.0286 | 1,570.7468 |
| **Total** | | **0.1750** | **1.4958** | **0.6365** | **9.5500e-003** | | **0.1209** | **0.1209** | | **0.1209** | **0.1209** | | **1,909.5520** | **1,909.5520** | **0.0366** | **0.0350** | **1,920.8995** |

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Condo/Townhouse High Rise | 1.9069 | 0.0206 | 0.1757 | 0.0748 | 1.1200e-003 | | 0.0142 | 0.0142 | | 0.0142 | 0.0142 | | 224.3416 | 224.3416 | 4.3000e-003 | 4.1100e-003 | 225.6747 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Retirement Community | 8.13915 | 0.0878 | 0.7501 | 0.3192 | 4.7900e-003 | | 0.0606 | 0.0606 | | 0.0606 | 0.0606 | | 957.5470 | 957.5470 | 0.0184 | 0.0176 | 963.2373 |
| **Total** | | **0.1083** | **0.9258** | **0.3940** | **5.9100e-003** | | **0.0749** | **0.0749** | | **0.0749** | **0.0749** | | **1,181.8886** | **1,181.8886** | **0.0227** | **0.0217** | **1,188.9120** |

## 6.0 Area Detail

### 6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

Use Low VOC Cleaning Supplies

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 13.0945 | 0.4529 | 37.5315 | 1.7000e-003 | | 0.2049 | 0.2049 | | 0.2049 | 0.2049 | 0.0000 | 62.4075 | 62.4075 | 0.0445 | 0.0000 | 63.5211 |
| Unmitigated | 17.3165 | 4.2852 | 50.9835 | 0.0263 | | 0.5751 | 0.5751 | | 0.5751 | 0.5751 | 0.0000 | 4,832.7304 | 4,832.7304 | 0.1760 | 0.0870 | 4,863.0464 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 2.3348 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 13.0673 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.4348 | 3.7158 | 1.5812 | 0.0237 | | 0.3004 | 0.3004 | | 0.3004 | 0.3004 | 0.0000 | 4,743.5294 | 4,743.5294 | 0.0909 | 0.0870 | 4,771.7178 |
| Landscaping | 1.4797 | 0.5694 | 49.4023 | 2.6200e-003 | | 0.2746 | 0.2746 | | 0.2746 | 0.2746 | | 89.2010 | 89.2010 | 0.0851 | | 91.3285 |
| **Total** | **17.3165** | **4.2852** | **50.9835** | **0.0263** | | **0.5751** | **0.5751** | | **0.5751** | **0.5751** | **0.0000** | **4,832.7304** | **4,832.7304** | **0.1760** | **0.0870** | **4,863.0464** |

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.2073 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 12.1025 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 0.7847 | 0.4529 | 37.5315 | 1.7000e-003 | | 0.2049 | 0.2049 | | 0.2049 | 0.2049 | | 62.4075 | 62.4075 | 0.0445 | | 63.5211 |
| **Total** | **13.0945** | **0.4529** | **37.5315** | **1.7000e-003** | | **0.2049** | **0.2049** | | **0.2049** | **0.2049** | **0.0000** | **62.4075** | **62.4075** | **0.0445** | **0.0000** | **63.5211** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

Use Reclaimed Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Turf Reduction

Use Water Efficient Irrigation System

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

## 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

**Boilers**

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

**User Defined Equipment**

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

# Vineyards at Deer Creek- Phase 3

**Contra Costa County, Winter**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Parking Lot | 260.00 | Space | 2.34 | 104,000.00 | 0 |
| City Park | 56.25 | Acre | 56.25 | 2,450,250.00 | 0 |
| Recreational Swimming Pool | 2.00 | 1000sqft | 0.05 | 2,000.00 | 0 |
| Condo/Townhouse High Rise | 125.00 | Dwelling Unit | 1.95 | 125,000.00 | 358 |
| Retirement Community | 475.00 | Dwelling Unit | 95.00 | 475,000.00 | 1359 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 58 |
| **Climate Zone** | 4 | | | **Operational Year** | 2030 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 146 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - Per PG&E 2018 CRSR

Land Use - Parking: assumed 2 spaces for 125 DUs, plus 10 extra spaces for recreation uses
City Park is open space/ agricultural uses

Construction Phase - Per Construction Questionnaire

Off-road Equipment - Estimated equipment use

Off-road Equipment -

Off-road Equipment - No demolition

Off-road Equipment - Estimated equipment use

Off-road Equipment -

Off-road Equipment - Estimated equipment use

Off-road Equipment -

Off-road Equipment -

Trips and VMT - vendor trips would be lower since city park was used to model the proposed natural open space, informal parkland, low impact trails, etc.

Demolition - No demolition

Grading - Balanced between all phases

Vehicle Trips - Per Fehr and Peers TIA 2019

Woodstoves - Per BAAQMD Regulation 6, Rule 3

Energy Use -

Land Use Change -

Construction Off-road Equipment Mitigation - Per BAAQMD basic control measure

Mobile Land Use Mitigation - Green building design elements include narrower roadways

Mobile Commute Mitigation -

Area Mitigation - No hearth, low VOC cleaning supplies, low VOC paint, and electric landscape equipment

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblAreaMitigation | UseLowVOCPaintNonresidentialExteriorValue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintNonresidentialInteriorValue | 100 | 10 |
| tblAreaMitigation | UseLowVOCPaintParkingCheck | False | True |
| tblAreaMitigation | UseLowVOCPaintParkingValue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintResidentialExteriorValue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintResidentialInteriorValue | 100 | 10 |
| tblConstDustMitigation | CleanPavedRoadPercentReduction | 0 | 6 |
| tblConstDustMitigation | WaterUnpavedRoadMoistureContent | 0 | 12 |
| tblConstDustMitigation | WaterUnpavedRoadVehicleSpeed | 0 | 15 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |

| | | | |
|---|---|---|---|
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 8.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 6.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 4.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 12.00 |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstructionPhase | NumDays | 220.00 | 500.00 |
| tblConstructionPhase | NumDays | 3,100.00 | 574.00 |
| tblConstructionPhase | NumDays | 200.00 | 0.00 |
| tblConstructionPhase | NumDays | 310.00 | 110.00 |

| | | | |
|---|---|---|---|
| tblConstructionPhase | NumDays | 220.00 | 22.00 |
| tblConstructionPhase | NumDays | 120.00 | 10.00 |
| tblFireplaces | NumberGas | 18.75 | 40.00 |
| tblFireplaces | NumberGas | 71.25 | 152.00 |
| tblFireplaces | NumberWood | 21.25 | 0.00 |
| tblFireplaces | NumberWood | 80.75 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 4.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 3.00 |
| tblProjectCharacteristics | CO2IntensityFactor | 641.35 | 146 |
| tblTripsAndVMT | VendorTripNumber | 483.00 | 283.00 |
| tblVehicleTrips | HO_TL | 5.70 | 8.90 |
| tblVehicleTrips | HO_TL | 5.70 | 8.90 |
| tblVehicleTrips | HS_TL | 4.80 | 7.50 |
| tblVehicleTrips | HS_TL | 4.80 | 7.50 |
| tblVehicleTrips | HW_TL | 10.80 | 16.80 |
| tblVehicleTrips | HW_TL | 10.80 | 16.80 |
| tblVehicleTrips | ST_TR | 22.75 | 0.00 |
| tblVehicleTrips | ST_TR | 9.10 | 0.00 |
| tblVehicleTrips | SU_TR | 16.74 | 0.00 |
| tblVehicleTrips | SU_TR | 13.60 | 0.00 |
| tblVehicleTrips | WD_TR | 1.89 | 0.00 |
| tblVehicleTrips | WD_TR | 4.18 | 4.80 |
| tblVehicleTrips | WD_TR | 33.82 | 0.00 |
| tblVehicleTrips | WD_TR | 2.40 | 4.80 |
| tblWoodstoves | NumberCatalytic | 2.50 | 0.00 |
| tblWoodstoves | NumberCatalytic | 9.50 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 2.50 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 9.50 | 0.00 |

## 2.0 Emissions Summary

## 2.1 Overall Construction (Maximum Daily Emission)

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2027 | 5.4993 | 40.7174 | 43.9769 | 0.1849 | 18.2141 | 1.6335 | 19.3017 | 9.9699 | 1.5028 | 10.9705 | 0.0000 | 18,731.5244 | 18,731.5244 | 2.8951 | 0.0000 | 18,756.7919 |
| 2028 | 23.5076 | 37.6882 | 52.0614 | 0.2076 | 16.7600 | 0.7782 | 17.5382 | 4.4889 | 0.7400 | 5.2289 | 0.0000 | 20,953.5978 | 20,953.5978 | 1.0638 | 0.0000 | 20,980.1920 |
| 2029 | 23.2356 | 37.2468 | 50.3907 | 0.2043 | 16.7600 | 0.7725 | 17.5325 | 4.4889 | 0.7347 | 5.2236 | 0.0000 | 20,627.4473 | 20,627.4473 | 1.0466 | 0.0000 | 20,653.6116 |
| **Maximum** | **23.5076** | **40.7174** | **52.0614** | **0.2076** | **18.2141** | **1.6335** | **19.3017** | **9.9699** | **1.5028** | **10.9705** | **0.0000** | **20,953.5978** | **20,953.5978** | **2.8951** | **0.0000** | **20,980.1920** |

### Mitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2027 | 4.6357 | 24.3902 | 47.0350 | 0.1849 | 13.5602 | 0.1680 | 13.7282 | 4.2827 | 0.1617 | 4.3455 | 0.0000 | 18,731.5244 | 18,731.5244 | 2.8951 | 0.0000 | 18,756.7919 |
| 2028 | 22.2205 | 24.7411 | 53.6616 | 0.2076 | 15.9040 | 0.1868 | 16.0908 | 4.2788 | 0.1799 | 4.4587 | 0.0000 | 20,953.5978 | 20,953.5978 | 1.0638 | 0.0000 | 20,980.1920 |
| 2029 | 21.9486 | 24.2996 | 51.9909 | 0.2043 | 15.9040 | 0.1811 | 16.0851 | 4.2788 | 0.1746 | 4.4534 | 0.0000 | 20,627.4473 | 20,627.4473 | 1.0466 | 0.0000 | 20,653.6116 |
| **Maximum** | **22.2205** | **24.7411** | **53.6616** | **0.2076** | **15.9040** | **0.1868** | **16.0908** | **4.2827** | **0.1799** | **4.4587** | **0.0000** | **20,953.5978** | **20,953.5978** | **2.8951** | **0.0000** | **20,980.1920** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **6.58** | **36.51** | **-4.27** | **0.00** | **12.30** | **83.17** | **15.57** | **32.23** | **82.66** | **38.12** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 2.2 Overall Operational

## Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 17.3165 | 4.2852 | 50.9835 | 0.0263 | | 0.5751 | 0.5751 | | 0.5751 | 0.5751 | 0.0000 | 4,832.7304 | 4,832.7304 | 0.1760 | 0.0870 | 4,863.0464 |
| Energy | 0.1750 | 1.4958 | 0.6365 | 9.5500e-003 | | 0.1209 | 0.1209 | | 0.1209 | 0.1209 | | 1,909.5520 | 1,909.5520 | 0.0366 | 0.0350 | 1,920.8995 |
| Mobile | 2.8973 | 14.4491 | 40.4669 | 0.1831 | 22.0031 | 0.1179 | 22.1209 | 5.8836 | 0.1096 | 5.9933 | | 18,556.3391 | 18,556.3391 | 0.5314 | | 18,569.6248 |
| **Total** | **20.3889** | **20.2301** | **92.0869** | **0.2189** | **22.0031** | **0.8139** | **22.8169** | **5.8836** | **0.8056** | **6.6893** | **0.0000** | **25,298.6215** | **25,298.6215** | **0.7441** | **0.1220** | **25,353.5707** |

## Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 13.0945 | 0.4529 | 37.5315 | 1.7000e-003 | | 0.2049 | 0.2049 | | 0.2049 | 0.2049 | 0.0000 | 62.4075 | 62.4075 | 0.0445 | 0.0000 | 63.5211 |
| Energy | 0.1083 | 0.9258 | 0.3940 | 5.9100e-003 | | 0.0749 | 0.0749 | | 0.0749 | 0.0749 | | 1,181.8886 | 1,181.8886 | 0.0227 | 0.0217 | 1,188.9120 |
| Mobile | 2.4445 | 12.0194 | 30.0010 | 0.1271 | 14.9134 | 0.0840 | 14.9973 | 3.9878 | 0.0781 | 4.0659 | | 12,888.8648 | 12,888.8648 | 0.3989 | | 12,898.8374 |
| **Total** | **15.6473** | **13.3981** | **67.9264** | **0.1347** | **14.9134** | **0.3637** | **15.2770** | **3.9878** | **0.3578** | **4.3456** | **0.0000** | **14,133.1609** | **14,133.1609** | **0.4661** | **0.0217** | **14,151.2704** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **23.26** | **33.77** | **26.24** | **38.47** | **32.22** | **55.32** | **33.05** | **32.22** | **55.59** | **35.04** | **0.00** | **44.13** | **44.13** | **37.36** | **82.23** | **44.18** |

# 3.0 Construction Detail

## Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Demolition | Demolition | 1/1/2027 | 12/31/2026 | 5 | 0 | |
| 2 | Site Preparation | Site Preparation | 1/1/2027 | 1/14/2027 | 5 | 10 | |
| 3 | Grading | Grading | 1/15/2027 | 6/17/2027 | 5 | 110 | |
| 4 | Infrastructure Improvements | Trenching | 6/18/2027 | 9/17/2027 | 5 | 66 | |
| 5 | Paving | Paving | 9/18/2027 | 10/19/2027 | 5 | 22 | |
| 6 | Building Construction | Building Construction | 10/20/2027 | 12/31/2029 | 5 | 574 | |
| 7 | Architectural Coating | Architectural Coating | 2/1/2028 | 12/31/2029 | 5 | 500 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 495**

**Acres of Paving: 2.34**

**Residential Indoor: 1,215,000; Residential Outdoor: 405,000; Non-Residential Indoor: 4,500; Non-Residential Outdoor: 1,500; Striped**

**OffRoad Equipment**

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Demolition | Excavators | 3 | 8.00 | 158 | 0.38 |
| Demolition | Rubber Tired Dozers | 2 | 8.00 | 247 | 0.40 |
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 4 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |

| | | | | | |
|---|---|---|---|---|---|
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 3 | 6.00 | 78 | 0.48 |
| Infrastructure Improvements | Excavators | 3 | 8.00 | 158 | 0.38 |
| Infrastructure Improvements | Rubber Tired Loaders | 3 | 8.00 | 203 | 0.36 |
| Infrastructure Improvements | Tractors/Loaders/Backhoes | 3 | 8.00 | 97 | 0.37 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Demolition | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 10 | 25.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 1,506.00 | 283.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 3 | 301.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Infrastructure Improvements | 9 | 23.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

## 3.3 Site Preparation - 2027

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 18.0663 | 0.0000 | 18.0663 | 9.9307 | 0.0000 | 9.9307 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.4727 | 25.2339 | 17.9118 | 0.0381 | | 1.0868 | 1.0868 | | 0.9999 | 0.9999 | | 3,689.1037 | 3,689.1037 | 1.1931 | | 3,718.9320 |
| **Total** | **2.4727** | **25.2339** | **17.9118** | **0.0381** | **18.0663** | **1.0868** | **19.1531** | **9.9307** | **0.9999** | **10.9305** | | **3,689.1037** | **3,689.1037** | **1.1931** | | **3,718.9320** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0422 | 0.0237 | 0.2630 | 1.0400e-003 | 0.1479 | 7.9000e-004 | 0.1487 | 0.0392 | 7.3000e-004 | 0.0400 | | 104.0526 | 104.0526 | 1.6200e-003 | | 104.0931 |
| **Total** | **0.0422** | **0.0237** | **0.2630** | **1.0400e-003** | **0.1479** | **7.9000e-004** | **0.1487** | **0.0392** | **7.3000e-004** | **0.0400** | | **104.0526** | **104.0526** | **1.6200e-003** | | **104.0931** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 7.7233 | 0.0000 | 7.7233 | 4.2454 | 0.0000 | 4.2454 | | | 0.0000 | | | 0.0000 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 0.4656 | 2.0175 | 20.8690 | 0.0381 | | 0.0621 | 0.0621 | | 0.0621 | 0.0621 | 0.0000 | 3,689.1037 | 3,689.1037 | 1.1931 | | 3,718.9320 |
| **Total** | **0.4656** | **2.0175** | **20.8690** | **0.0381** | **7.7233** | **0.0621** | **7.7854** | **4.2454** | **0.0621** | **4.3075** | **0.0000** | **3,689.1037** | **3,689.1037** | **1.1931** | | **3,718.9320** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0422 | 0.0237 | 0.2630 | 1.0400e-003 | 0.1402 | 7.9000e-004 | 0.1409 | 0.0373 | 7.3000e-004 | 0.0381 | | 104.0526 | 104.0526 | 1.6200e-003 | | 104.0931 |
| **Total** | **0.0422** | **0.0237** | **0.2630** | **1.0400e-003** | **0.1402** | **7.9000e-004** | **0.1409** | **0.0373** | **7.3000e-004** | **0.0381** | | **104.0526** | **104.0526** | **1.6200e-003** | | **104.0931** |

## 3.4 Grading - 2027

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 10.7943 | 0.0000 | 10.7943 | 3.8255 | 0.0000 | 3.8255 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.2449 | 40.6845 | 37.0923 | 0.0924 | | 1.6324 | 1.6324 | | 1.5018 | 1.5018 | | 8,944.5757 | 8,944.5757 | 2.8929 | | 9,016.8971 |
| **Total** | **4.2449** | **40.6845** | **37.0923** | **0.0924** | **10.7943** | **1.6324** | **12.4268** | **3.8255** | **1.5018** | **5.3274** | | **8,944.5757** | **8,944.5757** | **2.8929** | | **9,016.8971** |

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0586 | 0.0329 | 0.3653 | 1.4500e-003 | 0.2054 | 1.1000e-003 | 0.2065 | 0.0545 | 1.0100e-003 | 0.0555 | | 144.5175 | 144.5175 | 2.2500e-003 | | 144.5738 |
| **Total** | **0.0586** | **0.0329** | **0.3653** | **1.4500e-003** | **0.2054** | **1.1000e-003** | **0.2065** | **0.0545** | **1.0100e-003** | **0.0555** | | **144.5175** | **144.5175** | **2.2500e-003** | | **144.5738** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 4.6146 | 0.0000 | 4.6146 | 1.6354 | 0.0000 | 1.6354 | | | 0.0000 | | | 0.0000 |
| Off-Road | 1.1344 | 4.9156 | 46.6696 | 0.0924 | | 0.1513 | 0.1513 | | 0.1513 | 0.1513 | 0.0000 | 8,944.5757 | 8,944.5757 | 2.8929 | | 9,016.8971 |
| **Total** | **1.1344** | **4.9156** | **46.6696** | **0.0924** | **4.6146** | **0.1513** | **4.7658** | **1.6354** | **0.1513** | **1.7867** | **0.0000** | **8,944.5757** | **8,944.5757** | **2.8929** | | **9,016.8971** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0586 | 0.0329 | 0.3653 | 1.4500e-003 | 0.1947 | 1.1000e-003 | 0.1958 | 0.0518 | 1.0100e-003 | 0.0529 | | 144.5175 | 144.5175 | 2.2500e-003 | | 144.5738 |
| **Total** | **0.0586** | **0.0329** | **0.3653** | **1.4500e-003** | **0.1947** | **1.1000e-003** | **0.1958** | **0.0518** | **1.0100e-003** | **0.0529** | | **144.5175** | **144.5175** | **2.2500e-003** | | **144.5738** |

## 3.5 Infrastructure Improvements - 2027

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.5835 | 13.2463 | 20.8817 | 0.0436 | | 0.5293 | 0.5293 | | 0.4869 | 0.4869 | | 4,224.0467 | 4,224.0467 | 1.3661 | | 4,258.2003 |
| **Total** | **1.5835** | **13.2463** | **20.8817** | **0.0436** | | **0.5293** | **0.5293** | | **0.4869** | **0.4869** | | **4,224.0467** | **4,224.0467** | **1.3661** | | **4,258.2003** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0539 | 0.0303 | 0.3361 | 1.3300e-003 | 0.1889 | 1.0100e-003 | 0.1900 | 0.0501 | 9.3000e-004 | 0.0510 | | 132.9561 | 132.9561 | 2.0700e-003 | | 133.0079 |
| **Total** | **0.0539** | **0.0303** | **0.3361** | **1.3300e-003** | **0.1889** | **1.0100e-003** | **0.1900** | **0.0501** | **9.3000e-004** | **0.0510** | | **132.9561** | **132.9561** | **2.0700e-003** | | **133.0079** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.5366 | 2.3250 | 27.2871 | 0.0436 | | 0.0715 | 0.0715 | | 0.0715 | 0.0715 | 0.0000 | 4,224.0467 | 4,224.0467 | 1.3661 | | 4,258.2003 |
| **Total** | **0.5366** | **2.3250** | **27.2871** | **0.0436** | | **0.0715** | **0.0715** | | **0.0715** | **0.0715** | **0.0000** | **4,224.0467** | **4,224.0467** | **1.3661** | | **4,258.2003** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0539 | 0.0303 | 0.3361 | 1.3300e-003 | 0.1791 | 1.0100e-003 | 0.1801 | 0.0477 | 9.3000e-004 | 0.0486 | | 132.9561 | 132.9561 | 2.0700e-003 | | 133.0079 |
| **Total** | **0.0539** | **0.0303** | **0.3361** | **1.3300e-003** | **0.1791** | **1.0100e-003** | **0.1801** | **0.0477** | **9.3000e-004** | **0.0486** | | **132.9561** | **132.9561** | **2.0700e-003** | | **133.0079** |

## 3.6 Paving - 2027

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 0.9152 | 8.5816 | 14.5780 | 0.0228 | | 0.4185 | 0.4185 | | 0.3850 | 0.3850 | | 2,206.7452 | 2,206.7452 | 0.7137 | | 2,224.5878 |
| Paving | 0.2787 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.1938** | **8.5816** | **14.5780** | **0.0228** | | **0.4185** | **0.4185** | | **0.3850** | **0.3850** | | **2,206.7452** | **2,206.7452** | **0.7137** | | **2,224.5878** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0352 | 0.0198 | 0.2192 | 8.7000e-004 | 0.1232 | 6.6000e-004 | 0.1239 | 0.0327 | 6.0000e-004 | 0.0333 | | 86.7105 | 86.7105 | 1.3500e-003 | | 86.7443 |
| **Total** | **0.0352** | **0.0198** | **0.2192** | **8.7000e-004** | **0.1232** | **6.6000e-004** | **0.1239** | **0.0327** | **6.0000e-004** | **0.0333** | | **86.7105** | **86.7105** | **1.3500e-003** | | **86.7443** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.2805 | 1.2154 | 17.2957 | 0.0228 | | 0.0374 | 0.0374 | | 0.0374 | 0.0374 | 0.0000 | 2,206.7452 | 2,206.7452 | 0.7137 | | 2,224.5878 |
| Paving | 0.2787 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **0.5591** | **1.2154** | **17.2957** | **0.0228** | | **0.0374** | **0.0374** | | **0.0374** | **0.0374** | **0.0000** | **2,206.7452** | **2,206.7452** | **0.7137** | | **2,224.5878** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0352 | 0.0198 | 0.2192 | 8.7000e-004 | 0.1168 | 6.6000e-004 | 0.1175 | 0.0311 | 6.0000e-004 | 0.0317 | | 86.7105 | 86.7105 | 1.3500e-003 | | 86.7443 |
| **Total** | **0.0352** | **0.0198** | **0.2192** | **8.7000e-004** | **0.1168** | **6.6000e-004** | **0.1175** | **0.0311** | **6.0000e-004** | **0.0317** | | **86.7105** | **86.7105** | **1.3500e-003** | | **86.7443** |

## 3.7 Building Construction - 2027

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.6022 | 19.8335 | 5.8850 | 0.0707 | 1.9159 | 0.0232 | 1.9391 | 0.5515 | 0.0222 | 0.5737 | | 7,469.3152 | 7,469.3152 | 0.2742 | | 7,476.1699 |
| Worker | 3.5296 | 1.9839 | 22.0073 | 0.0872 | 12.3714 | 0.0660 | 12.4374 | 3.2815 | 0.0607 | 3.3422 | | 8,705.7349 | 8,705.7349 | 0.1356 | | 8,709.1240 |
| **Total** | **4.1319** | **21.8174** | **27.8922** | **0.1579** | **14.2873** | **0.0892** | **14.3765** | **3.8330** | **0.0829** | **3.9159** | | **16,175.0501** | **16,175.0501** | **0.4098** | | **16,185.2939** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.5038 | 2.5728 | 17.6150 | 0.0270 | | 0.0788 | 0.0788 | | 0.0788 | 0.0788 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **0.5038** | **2.5728** | **17.6150** | **0.0270** | | **0.0788** | **0.0788** | | **0.0788** | **0.0788** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.6022 | 19.8335 | 5.8850 | 0.0707 | 1.8339 | 0.0232 | 1.8571 | 0.5314 | 0.0222 | 0.5536 | | 7,469.3152 | 7,469.3152 | 0.2742 | | 7,476.1699 |
| Worker | 3.5296 | 1.9839 | 22.0073 | 0.0872 | 11.7263 | 0.0660 | 11.7923 | 3.1231 | 0.0607 | 3.1839 | | 8,705.7349 | 8,705.7349 | 0.1356 | | 8,709.1240 |
| **Total** | **4.1319** | **21.8174** | **27.8922** | **0.1579** | **13.5602** | **0.0892** | **13.6495** | **3.6545** | **0.0829** | **3.7375** | | **16,175.0501** | **16,175.0501** | **0.4098** | | **16,185.2939** |

## 3.7 Building Construction - 2028

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.5904 | 19.5928 | 5.7975 | 0.0704 | 1.9159 | 0.0227 | 1.9385 | 0.5515 | 0.0216 | 0.5732 | | 7,435.6253 | 7,435.6253 | 0.2678 | | 7,442.3194 |
| Worker | 3.3281 | 1.8246 | 20.6288 | 0.0845 | 12.3714 | 0.0612 | 12.4327 | 3.2815 | 0.0563 | 3.3378 | | 8,431.8948 | 8,431.8948 | 0.1242 | | 8,434.9993 |
| **Total** | **3.9185** | **21.4174** | **26.4263** | **0.1549** | **14.2873** | **0.0839** | **14.3712** | **3.8330** | **0.0780** | **3.9110** | | **15,867.5201** | **15,867.5201** | **0.3919** | | **15,877.3187** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| Category | lb/day | | | | | | | | | | lb/day | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 0.5038 | 2.5728 | 17.6150 | 0.0270 | | 0.0788 | 0.0788 | | 0.0788 | 0.0788 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **0.5038** | **2.5728** | **17.6150** | **0.0270** | | **0.0788** | **0.0788** | | **0.0788** | **0.0788** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.5904 | 19.5928 | 5.7975 | 0.0704 | 1.8340 | 0.0227 | 1.8566 | 0.5314 | 0.0216 | 0.5531 | | 7,435.6253 | 7,435.6253 | 0.2678 | | 7,442.3194 |
| Worker | 3.3281 | 1.8246 | 20.6288 | 0.0845 | 11.7263 | 0.0612 | 11.7876 | 3.1231 | 0.0563 | 3.1795 | | 8,431.8948 | 8,431.8948 | 0.1242 | | 8,434.9993 |
| **Total** | **3.9185** | **21.4174** | **26.4263** | **0.1549** | **13.5603** | **0.0839** | **13.6442** | **3.6546** | **0.0780** | **3.7325** | | **15,867.5201** | **15,867.5201** | **0.3919** | | **15,877.3187** |

## 3.7 Building Construction - 2029

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.5788 | 19.3274 | 5.6953 | 0.0700 | 1.9159 | 0.0222 | 1.9381 | 0.5516 | 0.0212 | 0.5727 | | 7,397.6266 | 7,397.6266 | 0.2634 | | 7,404.2105 |
| Worker | 3.1112 | 1.6778 | 19.3216 | 0.0821 | 12.3714 | 0.0569 | 12.4283 | 3.2815 | 0.0523 | 3.3338 | | 8,191.7418 | 8,191.7418 | 0.1135 | | 8,194.5798 |
| **Total** | **3.6899** | **21.0052** | **25.0168** | **0.1521** | **14.2874** | **0.0790** | **14.3664** | **3.8330** | **0.0735** | **3.9065** | | **15,589.3683** | **15,589.3683** | **0.3769** | | **15,598.7903** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.5038 | 2.5728 | 17.6150 | 0.0270 | | 0.0788 | 0.0788 | | 0.0788 | 0.0788 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **0.5038** | **2.5728** | **17.6150** | **0.0270** | | **0.0788** | **0.0788** | | **0.0788** | **0.0788** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| Category | lb/day | | | | | | | | | | | lb/day | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.5788 | 19.3274 | 5.6953 | 0.0700 | 1.8340 | 0.0222 | 1.8562 | 0.5314 | 0.0212 | 0.5526 | | 7,397.6266 | 7,397.6266 | 0.2634 | | 7,404.2105 |
| Worker | 3.1112 | 1.6778 | 19.3216 | 0.0821 | 11.7263 | 0.0569 | 11.7832 | 3.1231 | 0.0523 | 3.1754 | | 8,191.7418 | 8,191.7418 | 0.1135 | | 8,194.5798 |
| **Total** | **3.6899** | **21.0052** | **25.0168** | **0.1521** | **13.5603** | **0.0790** | **13.6394** | **3.6546** | **0.0735** | **3.7281** | | **15,589.3683** | **15,589.3683** | **0.3769** | | **15,598.7903** |

## 3.8 Architectural Coating - 2028

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | | lb/day | | | | |
| Archit. Coating | 17.0439 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.5126 | 3.4365 | 5.4274 | 8.9100e-003 | | 0.1545 | 0.1545 | | 0.1545 | 0.1545 | | 844.3442 | 844.3442 | 0.0461 | | 845.4956 |
| **Total** | **17.5565** | **3.4365** | **5.4274** | **8.9100e-003** | | **0.1545** | **0.1545** | | **0.1545** | **0.1545** | | **844.3442** | **844.3442** | **0.0461** | | **845.4956** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | | lb/day | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.6652 | 0.3647 | 4.1230 | 0.0169 | 2.4726 | 0.0122 | 2.4849 | 0.6559 | 0.0113 | 0.6671 | | 1,685.2592 | 1,685.2592 | 0.0248 | | 1,685.8797 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | **0.6652** | **0.3647** | **4.1230** | **0.0169** | **2.4726** | **0.0122** | **2.4849** | **0.6559** | **0.0113** | **0.6671** | | **1,685.2592** | **1,685.2592** | **0.0248** | | **1,685.8797** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 17.0439 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.0891 | 0.3863 | 5.4972 | 8.9100e-003 | | 0.0119 | 0.0119 | | 0.0119 | 0.0119 | 0.0000 | 844.3441 | 844.3441 | 0.0461 | | 845.4956 |
| **Total** | **17.1331** | **0.3863** | **5.4972** | **8.9100e-003** | | **0.0119** | **0.0119** | | **0.0119** | **0.0119** | **0.0000** | **844.3441** | **844.3441** | **0.0461** | | **845.4956** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.6652 | 0.3647 | 4.1230 | 0.0169 | 2.3437 | 0.0122 | 2.3560 | 0.6242 | 0.0113 | 0.6355 | | 1,685.2592 | 1,685.2592 | 0.0248 | | 1,685.8797 |
| **Total** | **0.6652** | **0.3647** | **4.1230** | **0.0169** | **2.3437** | **0.0122** | **2.3560** | **0.6242** | **0.0113** | **0.6355** | | **1,685.2592** | **1,685.2592** | **0.0248** | | **1,685.8797** |

## 3.8 Architectural Coating - 2029

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 17.0439 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.5126 | 3.4365 | 5.4274 | 8.9100e-003 | | 0.1545 | 0.1545 | | 0.1545 | 0.1545 | | 844.3442 | 844.3442 | 0.0461 | | 845.4956 |
| **Total** | **17.5565** | **3.4365** | **5.4274** | **8.9100e-003** | | **0.1545** | **0.1545** | | **0.1545** | **0.1545** | | **844.3442** | **844.3442** | **0.0461** | | **845.4956** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.6218 | 0.3353 | 3.8618 | 0.0164 | 2.4726 | 0.0114 | 2.4840 | 0.6559 | 0.0105 | 0.6663 | | 1,637.2605 | 1,637.2605 | 0.0227 | | 1,637.8277 |
| **Total** | **0.6218** | **0.3353** | **3.8618** | **0.0164** | **2.4726** | **0.0114** | **2.4840** | **0.6559** | **0.0105** | **0.6663** | | **1,637.2605** | **1,637.2605** | **0.0227** | | **1,637.8277** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 17.0439 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.0891 | 0.3863 | 5.4972 | 8.9100e-003 | | 0.0119 | 0.0119 | | 0.0119 | 0.0119 | 0.0000 | 844.3441 | 844.3441 | 0.0461 | | 845.4956 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | **17.1331** | **0.3863** | **5.4972** | **8.9100e-003** | | **0.0119** | **0.0119** | | **0.0119** | **0.0119** | **0.0000** | **844.3441** | **844.3441** | **0.0461** | | **845.4956** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.6218 | 0.3353 | 3.8618 | 0.0164 | 2.3437 | 0.0114 | 2.3551 | 0.6242 | 0.0105 | 0.6347 | | 1,637.2605 | 1,637.2605 | 0.0227 | | 1,637.8277 |
| **Total** | **0.6218** | **0.3353** | **3.8618** | **0.0164** | **2.3437** | **0.0114** | **2.3551** | **0.6242** | **0.0105** | **0.6347** | | **1,637.2605** | **1,637.2605** | **0.0227** | | **1,637.8277** |

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

Increase Diversity

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

Implement NEV Network

Expand Transit Network

Implement Trip Reduction Program

Transit Subsidy

Employee Vanpool/Shuttle

Provide Riade Sharing Program

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 2.4445 | 12.0194 | 30.0010 | 0.1271 | 14.9134 | 0.0840 | 14.9973 | 3.9878 | 0.0781 | 4.0659 | | 12,888.8648 | 12,888.8648 | 0.3989 | | 12,898.8374 |
| Unmitigated | 2.8973 | 14.4491 | 40.4669 | 0.1831 | 22.0031 | 0.1179 | 22.1209 | 5.8836 | 0.1096 | 5.9933 | | 18,556.3391 | 18,556.3391 | 0.5314 | | 18,569.6248 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| City Park | 0.00 | 0.00 | 0.00 | | |
| Condo/Townhouse High Rise | 600.00 | 538.75 | 428.75 | 2,040,171 | 1,382,799 |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Recreational Swimming Pool | 0.00 | 0.00 | 0.00 | | |
| Retirement Community | 2,280.00 | 964.25 | 926.25 | 6,834,252 | 4,632,158 |
| Total | 2,880.00 | 1,503.00 | 1,355.00 | 8,874,423 | 6,014,956 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| City Park | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 66 | 28 | 6 |
| Condo/Townhouse High Rise | 16.80 | 7.50 | 8.90 | 31.00 | 15.00 | 54.00 | 86 | 11 | 3 |
| Parking Lot | 9.50 | 7.30 | 7.30 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Recreational Swimming Pool | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 52 | 39 | 9 |
| Retirement Community | 16.80 | 7.50 | 8.90 | 31.00 | 15.00 | 54.00 | 86 | 11 | 3 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| City Park | 0.606524 | 0.034895 | 0.184335 | 0.108602 | 0.012129 | 0.004836 | 0.010863 | 0.026200 | 0.001662 | 0.001538 | 0.005105 | 0.002652 | 0.000659 |
| Condo/Townhouse High Rise | 0.606524 | 0.034895 | 0.184335 | 0.108602 | 0.012129 | 0.004836 | 0.010863 | 0.026200 | 0.001662 | 0.001538 | 0.005105 | 0.002652 | 0.000659 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Parking Lot | 0.606524 | 0.034895 | 0.184335 | 0.108602 | 0.012129 | 0.004836 | 0.010863 | 0.026200 | 0.001662 | 0.001538 | 0.005105 | 0.002652 | 0.000659 |
| Recreational Swimming Pool | 0.606524 | 0.034895 | 0.184335 | 0.108602 | 0.012129 | 0.004836 | 0.010863 | 0.026200 | 0.001662 | 0.001538 | 0.005105 | 0.002652 | 0.000659 |
| Retirement Community | 0.606524 | 0.034895 | 0.184335 | 0.108602 | 0.012129 | 0.004836 | 0.010863 | 0.026200 | 0.001662 | 0.001538 | 0.005105 | 0.002652 | 0.000659 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Percent of Electricity Use Generated with Renewable Energy

Install Energy Efficient Appliances

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.1083 | 0.9258 | 0.3940 | 5.9100e-003 | | 0.0749 | 0.0749 | | 0.0749 | 0.0749 | | 1,181.8886 | 1,181.8886 | 0.0227 | 0.0217 | 1,188.9120 |
| NaturalGas Unmitigated | 0.1750 | 1.4958 | 0.6365 | 9.5500e-003 | | 0.1209 | 0.1209 | | 0.1209 | 0.1209 | | 1,909.5520 | 1,909.5520 | 0.0366 | 0.0350 | 1,920.8995 |

### 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Condo/Townhouse High Rise | 2958.72 | 0.0319 | 0.2727 | 0.1160 | 1.7400e-003 | | 0.0221 | 0.0221 | | 0.0221 | 0.0221 | | 348.0842 | 348.0842 | 6.6700e-003 | 6.3800e-003 | 350.1527 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Retirement Community | 13272.5 | 0.1431 | 1.2232 | 0.5205 | 7.8100e-003 | | 0.0989 | 0.0989 | | 0.0989 | 0.0989 | | 1,561.4678 | 1,561.4678 | 0.0299 | 0.0286 | 1,570.7468 |
| **Total** | | **0.1750** | **1.4958** | **0.6365** | **9.5500e-003** | | **0.1209** | **0.1209** | | **0.1209** | **0.1209** | | **1,909.5520** | **1,909.5520** | **0.0366** | **0.0350** | **1,920.8995** |

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Condo/Townhouse High Rise | 1.9069 | 0.0206 | 0.1757 | 0.0748 | 1.1200e-003 | | 0.0142 | 0.0142 | | 0.0142 | 0.0142 | | 224.3416 | 224.3416 | 4.3000e-003 | 4.1100e-003 | 225.6747 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Retirement Community | 8.13915 | 0.0878 | 0.7501 | 0.3192 | 4.7900e-003 | | 0.0606 | 0.0606 | | 0.0606 | 0.0606 | | 957.5470 | 957.5470 | 0.0184 | 0.0176 | 963.2373 |
| **Total** | | **0.1083** | **0.9258** | **0.3940** | **5.9100e-003** | | **0.0749** | **0.0749** | | **0.0749** | **0.0749** | | **1,181.8886** | **1,181.8886** | **0.0227** | **0.0217** | **1,188.9120** |

## 6.0 Area Detail

### 6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

Use Low VOC Cleaning Supplies

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 13.0945 | 0.4529 | 37.5315 | 1.7000e-003 | | 0.2049 | 0.2049 | | 0.2049 | 0.2049 | 0.0000 | 62.4075 | 62.4075 | 0.0445 | 0.0000 | 63.5211 |
| Unmitigated | 17.3165 | 4.2852 | 50.9835 | 0.0263 | | 0.5751 | 0.5751 | | 0.5751 | 0.5751 | 0.0000 | 4,832.7304 | 4,832.7304 | 0.1760 | 0.0870 | 4,863.0464 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 2.3348 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 13.0673 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.4348 | 3.7158 | 1.5812 | 0.0237 | | 0.3004 | 0.3004 | | 0.3004 | 0.3004 | 0.0000 | 4,743.5294 | 4,743.5294 | 0.0909 | 0.0870 | 4,771.7178 |
| Landscaping | 1.4797 | 0.5694 | 49.4023 | 2.6200e-003 | | 0.2746 | 0.2746 | | 0.2746 | 0.2746 | | 89.2010 | 89.2010 | 0.0851 | | 91.3285 |
| **Total** | **17.3165** | **4.2852** | **50.9835** | **0.0263** | | **0.5751** | **0.5751** | | **0.5751** | **0.5751** | **0.0000** | **4,832.7304** | **4,832.7304** | **0.1760** | **0.0870** | **4,863.0464** |

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.2073 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 12.1025 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 0.7847 | 0.4529 | 37.5315 | 1.7000e-003 | | 0.2049 | 0.2049 | | 0.2049 | 0.2049 | | 62.4075 | 62.4075 | 0.0445 | | 63.5211 |
| **Total** | **13.0945** | **0.4529** | **37.5315** | **1.7000e-003** | | **0.2049** | **0.2049** | | **0.2049** | **0.2049** | **0.0000** | **62.4075** | **62.4075** | **0.0445** | **0.0000** | **63.5211** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

Use Reclaimed Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Turf Reduction

Use Water Efficient Irrigation System

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

## 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

**Boilers**

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

**User Defined Equipment**

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

# Vineyards at Deer Creek- Phase 3

## Contra Costa County, Mitigation Report

## Construction Mitigation Summary

| Phase | ROG | NOx | CO | SO2 | Exhaust PM10 | Exhaust PM2.5 | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Reduction | | | | | | | | | | | | |
| Architectural Coating | 0.02 | 0.81 | -0.01 | 0.00 | 0.86 | 0.86 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Building Construction | 0.18 | 0.29 | -0.04 | 0.00 | 0.74 | 0.73 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Grading | 0.72 | 0.88 | -0.26 | 0.00 | 0.91 | 0.90 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Infrastructure Improvements | 0.64 | 0.82 | -0.30 | 0.00 | 0.86 | 0.85 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Paving | 0.52 | 0.86 | -0.18 | 0.00 | 0.91 | 0.90 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Site Preparation | 0.80 | 0.92 | -0.16 | 0.00 | 0.94 | 0.94 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## OFFROAD Equipment Mitigation

| Equipment Type | Fuel Type | Tier | Number Mitigated | Total Number of Equipment | DPF | Oxidation Catalyst |
|---|---|---|---|---|---|---|
| Air Compressors | Diesel | Tier 4 Final | 3 | 3 | No Change | 0.00 |
| Concrete/Industrial Saws | Diesel | Tier 4 Final | 0 | 1 | No Change | 0.00 |
| Cranes | Diesel | Tier 4 Final | 1 | 1 | No Change | 0.00 |
| Excavators | Diesel | Tier 4 Final | 8 | 8 | No Change | 0.00 |
| Forklifts | Diesel | Tier 4 Final | 3 | 3 | No Change | 0.00 |
| Generator Sets | Diesel | Tier 4 Final | 1 | 1 | No Change | 0.00 |
| Graders | Diesel | Tier 4 Final | 1 | 1 | No Change | 0.00 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Pavers | Diesel | Tier 4 Final | 2 | 2 | No Change | 0.00 |
| Paving Equipment | Diesel | Tier 4 Final | 2 | 2 | No Change | 0.00 |
| Rollers | Diesel | Tier 4 Final | 2 | 2 | No Change | 0.00 |
| Rubber Tired Dozers | Diesel | Tier 4 Final | 6 | 6 | No Change | 0.00 |
| Rubber Tired Loaders | Diesel | Tier 4 Final | 3 | 3 | No Change | 0.00 |
| Scrapers | Diesel | Tier 4 Final | 4 | 4 | No Change | 0.00 |
| Tractors/Loaders/Backhoes | Diesel | Tier 4 Final | 12 | 12 | No Change | 0.00 |
| Welders | Diesel | Tier 4 Final | 0 | 1 | No Change | 0.00 |

| Equipment Type | ROG | NOx | CO | SO2 | Exhaust PM10 | Exhaust PM2.5 | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Unmitigated tons/yr | | | | | | Unmitigated mt/yr | | | | | |
| Air Compressors | 1.28150E-001 | 8.59130E-001 | 1.35685E+000 | 2.23000E-003 | 3.86300E-002 | 3.86300E-002 | 0.00000E+000 | 1.91494E+002 | 1.91494E+002 | 1.04500E-002 | 0.00000E+000 | 1.91755E+002 |
| Cranes | 7.85500E-002 | 7.95550E-001 | 4.36070E-001 | 1.45000E-003 | 3.38200E-002 | 3.11100E-002 | 0.00000E+000 | 1.27310E+002 | 1.27310E+002 | 4.11700E-002 | 0.00000E+000 | 1.28339E+002 |
| Excavators | 3.49300E-002 | 2.55320E-001 | 6.81210E-001 | 1.08000E-003 | 1.25200E-002 | 1.15200E-002 | 0.00000E+000 | 9.48649E+001 | 9.48649E+001 | 3.06800E-002 | 0.00000E+000 | 9.56319E+001 |
| Forklifts | 7.48100E-002 | 7.04760E-001 | 9.76160E-001 | 1.32000E-003 | 3.77300E-002 | 3.47100E-002 | 0.00000E+000 | 1.15625E+002 | 1.15625E+002 | 3.74000E-002 | 0.00000E+000 | 1.16560E+002 |
| Generator Sets | 7.64600E-002 | 6.87490E-001 | 1.05028E+000 | 1.89000E-003 | 2.73700E-002 | 2.73700E-002 | 0.00000E+000 | 1.62215E+002 | 1.62215E+002 | 5.99000E-003 | 0.00000E+000 | 1.62364E+002 |
| Graders | 1.71100E-002 | 1.90120E-001 | 8.76800E-002 | 3.60000E-004 | 6.12000E-003 | 5.63000E-003 | 0.00000E+000 | 3.19449E+001 | 3.19449E+001 | 1.03300E-002 | 0.00000E+000 | 3.22032E+001 |
| Pavers | 3.82000E-003 | 3.48300E-002 | 6.37100E-002 | 1.00000E-004 | 1.63000E-003 | 1.50000E-003 | 0.00000E+000 | 9.08078E+000 | 9.08078E+000 | 2.94000E-003 | 0.00000E+000 | 9.15421E+000 |
| Paving Equipment | 3.23000E-003 | 2.78200E-002 | 5.60200E-002 | 9.00000E-005 | 1.38000E-003 | 1.27000E-003 | 0.00000E+000 | 7.86981E+000 | 7.86981E+000 | 2.55000E-003 | 0.00000E+000 | 7.93344E+000 |
| Rollers | 3.01000E-003 | 3.17500E-002 | 4.06300E-002 | 6.00000E-005 | 1.60000E-003 | 1.47000E-003 | 0.00000E+000 | 5.07058E+000 | 5.07058E+000 | 1.64000E-003 | 0.00000E+000 | 5.11158E+000 |
| Rubber Tired Dozers | 4.53600E-002 | 4.64180E-001 | 2.09840E-001 | 6.00000E-004 | 2.03100E-002 | 1.86800E-002 | 0.00000E+000 | 5.25144E+001 | 5.25144E+001 | 1.69800E-002 | 0.00000E+000 | 5.29390E+001 |
| Rubber Tired Loaders | 2.26300E-002 | 1.84010E-001 | 1.45680E-001 | 6.20000E-004 | 6.18000E-003 | 5.69000E-003 | 0.00000E+000 | 5.43917E+001 | 5.43917E+001 | 1.75900E-002 | 0.00000E+000 | 5.48315E+001 |
| Scrapers | 1.47800E-001 | 1.40157E+000 | 1.18373E+000 | 3.34000E-003 | 5.51700E-002 | 5.07500E-002 | 0.00000E+000 | 2.93014E+002 | 2.93014E+002 | 9.47700E-002 | 0.00000E+000 | 2.95383E+002 |
| Tractors/Loaders/Backhoes | 1.29800E-001 | 1.31156E+000 | 2.19036E+000 | 3.07000E-003 | 5.31400E-002 | 4.88900E-002 | 0.00000E+000 | 2.69191E+002 | 2.69191E+002 | 8.70600E-002 | 0.00000E+000 | 2.71367E+002 |
| Welders | 6.30800E-002 | 3.85170E-001 | 4.74020E-001 | 7.30000E-004 | 1.17400E-002 | 1.17400E-002 | 0.00000E+000 | 5.40193E+001 | 5.40193E+001 | 5.13000E-003 | 0.00000E+000 | 5.41476E+001 |

| Equipment Type | ROG | NOx | CO | SO2 | Exhaust PM10 | Exhaust PM2.5 | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mitigated tons/yr | | | | | | Mitigated mt/yr | | | | | |
| Air Compressors | 2.22900E-002 | 9.65700E-002 | 1.37431E+000 | 2.23000E-003 | 2.97000E-003 | 2.97000E-003 | 0.00000E+000 | 1.91494E+002 | 1.91494E+002 | 1.04500E-002 | 0.00000E+000 | 1.91755E+002 |
| Cranes | 1.78000E-002 | 7.71400E-002 | 6.52750E-001 | 1.45000E-003 | 2.37000E-003 | 2.37000E-003 | 0.00000E+000 | 1.27310E+002 | 1.27310E+002 | 4.11700E-002 | 0.00000E+000 | 1.28339E+002 |
| Excavators | 1.32800E-002 | 5.75400E-002 | 8.18870E-001 | 1.08000E-003 | 1.77000E-003 | 1.77000E-003 | 0.00000E+000 | 9.48648E+001 | 9.48648E+001 | 3.06800E-002 | 0.00000E+000 | 9.56318E+001 |
| Forklifts | 1.62200E-002 | 7.02800E-002 | 1.00011E+000 | 1.32000E-003 | 2.16000E-003 | 2.16000E-003 | 0.00000E+000 | 1.15625E+002 | 1.15625E+002 | 3.74000E-002 | 0.00000E+000 | 1.16560E+002 |
| Generator Sets | 1.88800E-002 | 8.18100E-002 | 1.16418E+000 | 1.89000E-003 | 2.52000E-003 | 2.52000E-003 | 0.00000E+000 | 1.62214E+002 | 1.62214E+002 | 5.99000E-003 | 0.00000E+000 | 1.62364E+002 |
| Graders | 4.46000E-003 | 1.93400E-002 | 1.63620E-001 | 3.60000E-004 | 5.90000E-004 | 5.90000E-004 | 0.00000E+000 | 3.19448E+001 | 3.19448E+001 | 1.03300E-002 | 0.00000E+000 | 3.22031E+001 |
| Pavers | 1.27000E-003 | 5.51000E-003 | 7.83900E-002 | 1.00000E-004 | 1.70000E-004 | 1.70000E-004 | 0.00000E+000 | 9.08077E+000 | 9.08077E+000 | 2.94000E-003 | 0.00000E+000 | 9.15420E+000 |
| Paving Equipment | 1.11000E-003 | 4.79000E-003 | 6.82200E-002 | 9.00000E-005 | 1.50000E-004 | 1.50000E-004 | 0.00000E+000 | 7.86980E+000 | 7.86980E+000 | 2.55000E-003 | 0.00000E+000 | 7.93343E+000 |
| Rollers | 7.10000E-004 | 3.07000E-003 | 4.36400E-002 | 6.00000E-005 | 9.00000E-005 | 9.00000E-005 | 0.00000E+000 | 5.07058E+000 | 5.07058E+000 | 1.64000E-003 | 0.00000E+000 | 5.11158E+000 |
| Rubber Tired Dozers | 7.32000E-003 | 3.17100E-002 | 2.68350E-001 | 6.00000E-004 | 9.80000E-004 | 9.80000E-004 | 0.00000E+000 | 5.25143E+001 | 5.25143E+001 | 1.69800E-002 | 0.00000E+000 | 5.29389E+001 |
| Rubber Tired Loaders | 7.66000E-003 | 3.31800E-002 | 2.80720E-001 | 6.20000E-004 | 1.02000E-003 | 1.02000E-003 | 0.00000E+000 | 5.43916E+001 | 5.43916E+001 | 1.75900E-002 | 0.00000E+000 | 5.48314E+001 |
| Scrapers | 4.10100E-002 | 1.77720E-001 | 1.50375E+000 | 3.34000E-003 | 5.47000E-003 | 5.47000E-003 | 0.00000E+000 | 2.93013E+002 | 2.93013E+002 | 9.47700E-002 | 0.00000E+000 | 2.95383E+002 |
| Tractors/Loaders/Backhoes | 3.73100E-002 | 1.61680E-001 | 2.30079E+000 | 3.07000E-003 | 4.97000E-003 | 4.97000E-003 | 0.00000E+000 | 2.69191E+002 | 2.69191E+002 | 8.70600E-002 | 0.00000E+000 | 2.71367E+002 |
| Welders | 6.30800E-002 | 3.85170E-001 | 4.74020E-001 | 7.30000E-004 | 1.17400E-002 | 1.17400E-002 | 0.00000E+000 | 5.40193E+001 | 5.40193E+001 | 5.13000E-003 | 0.00000E+000 | 5.41476E+001 |

| Equipment Type | ROG | NOx | CO | SO2 | Exhaust PM10 | Exhaust PM2.5 | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Percent Reduction | | | | | | | | | | | |
| Air Compressors | 8.26063E-001 | 8.87596E-001 | -1.28680E-002 | 0.00000E+000 | 9.23117E-001 | 9.23117E-001 | 0.00000E+000 | 1.20108E-006 | 1.20108E-006 | 0.00000E+000 | 0.00000E+000 | 1.19945E-006 |
| Cranes | 7.73393E-001 | 9.03036E-001 | -4.96893E-001 | 0.00000E+000 | 9.29923E-001 | 9.23819E-001 | 0.00000E+000 | 1.17823E-006 | 1.17823E-006 | 0.00000E+000 | 0.00000E+000 | 1.16878E-006 |
| Excavators | 6.19811E-001 | 7.74636E-001 | -2.02082E-001 | 0.00000E+000 | 8.58626E-001 | 8.46354E-001 | 0.00000E+000 | 1.15954E-006 | 1.15954E-006 | 0.00000E+000 | 0.00000E+000 | 1.15024E-006 |
| Forklifts | 7.83184E-001 | 9.00278E-001 | -2.45349E-002 | 0.00000E+000 | 9.42751E-001 | 9.37770E-001 | 0.00000E+000 | 1.21081E-006 | 1.21081E-006 | 0.00000E+000 | 0.00000E+000 | 1.20110E-006 |
| Generator Sets | 7.53074E-001 | 8.81002E-001 | -1.08447E-001 | 0.00000E+000 | 9.07928E-001 | 9.07928E-001 | 0.00000E+000 | 1.17129E-006 | 1.17129E-006 | 0.00000E+000 | 0.00000E+000 | 1.17021E-006 |
| Graders | 7.39334E-001 | 8.98275E-001 | -8.66104E-001 | 0.00000E+000 | 9.03595E-001 | 8.95204E-001 | 0.00000E+000 | 1.25216E-006 | 1.25216E-006 | 0.00000E+000 | 0.00000E+000 | 1.24211E-006 |
| Pavers | 6.67539E-001 | 8.41803E-001 | -2.30419E-001 | 0.00000E+000 | 8.95706E-001 | 8.86667E-001 | 0.00000E+000 | 1.10123E-006 | 1.10123E-006 | 0.00000E+000 | 0.00000E+000 | 1.09239E-006 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Paving Equipment | 6.56347E-001 | 8.27822E-001 | -2.17779E-001 | 0.00000E+000 | 8.91304E-001 | 8.81890E-001 | 0.00000E+000 | 1.27068E-006 | 1.27068E-006 | 0.00000E+000 | 0.00000E+000 | 1.26049E-006 |
| Rollers | 7.64120E-001 | 9.03307E-001 | -7.40832E-002 | 0.00000E+000 | 9.43750E-001 | 9.38776E-001 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 |
| Rubber Tired Dozers | 8.38624E-001 | 9.31686E-001 | -2.78831E-001 | 0.00000E+000 | 9.51748E-001 | 9.47537E-001 | 0.00000E+000 | 1.14254E-006 | 1.14254E-006 | 0.00000E+000 | 0.00000E+000 | 1.32228E-006 |
| Rubber Tired Loaders | 6.61511E-001 | 8.19684E-001 | -9.26963E-001 | 0.00000E+000 | 8.34951E-001 | 8.20738E-001 | 0.00000E+000 | 1.28696E-006 | 1.28696E-006 | 0.00000E+000 | 0.00000E+000 | 1.09426E-006 |
| Scrapers | 7.22530E-001 | 8.73199E-001 | -2.70349E-001 | 0.00000E+000 | 9.00852E-001 | 8.92217E-001 | 0.00000E+000 | 1.19448E-006 | 1.19448E-006 | 0.00000E+000 | 0.00000E+000 | 1.18490E-006 |
| Tractors/Loaders/Backhoes | 7.12558E-001 | 8.76727E-001 | -5.04164E-002 | 0.00000E+000 | 9.06473E-001 | 8.98343E-001 | 0.00000E+000 | 1.18875E-006 | 1.18875E-006 | 0.00000E+000 | 0.00000E+000 | 1.17921E-006 |
| Welders | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 1.11071E-006 | 1.11071E-006 | 0.00000E+000 | 0.00000E+000 | 1.10808E-006 |

## Fugitive Dust Mitigation

| Yes/No | Mitigation Measure | Mitigation Input | | Mitigation Input | | Mitigation Input | |
|---|---|---|---|---|---|---|---|
| No | Soil Stabilizer for unpaved Roads | PM10 Reduction | 0.00 | PM2.5 Reduction | 0.00 | | |
| Yes | Replace Ground Cover of Area Disturbed | PM10 Reduction | 5.00 | PM2.5 Reduction | 5.00 | | |
| Yes | Water Exposed Area | PM10 Reduction | 55.00 | PM2.5 Reduction | 55.00 | Frequency (per day) | 2.00 |
| Yes | Unpaved Road Mitigation | Moisture Content % | 12.00 | Vehicle Speed (mph) | 15.00 | | |
| Yes | Clean Paved Road | % PM Reduction | 6.00 | | | | |

| | | Unmitigated | | Mitigated | | Percent Reduction | |
|---|---|---|---|---|---|---|---|
| Phase | Source | PM10 | PM2.5 | PM10 | PM2.5 | PM10 | PM2.5 |
| Architectural Coating | Fugitive Dust | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Architectural Coating | Roads | 0.60 | 0.16 | 0.57 | 0.15 | 0.05 | 0.05 |
| Building Construction | Fugitive Dust | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Building Construction | Roads | 3.96 | 1.07 | 3.76 | 1.02 | 0.05 | 0.05 |
| Grading | Fugitive Dust | 0.59 | 0.21 | 0.25 | 0.09 | 0.57 | 0.57 |
| Grading | Roads | 0.01 | 0.00 | 0.01 | 0.00 | 0.05 | 0.05 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Infrastructure Improvements | Fugitive Dust | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Infrastructure Improvements | Roads | 0.01 | 0.00 | 0.01 | 0.00 | 0.05 | 0.05 |
| Paving | Fugitive Dust | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Paving | Roads | 0.00 | 0.00 | 0.00 | 0.00 | 0.05 | 0.06 |
| Site Preparation | Fugitive Dust | 0.09 | 0.05 | 0.04 | 0.02 | 0.57 | 0.57 |
| Site Preparation | Roads | 0.00 | 0.00 | 0.00 | 0.00 | 0.04 | 0.05 |

## Operational Percent Reduction Summary

| Category | ROG | NOx | CO | SO2 | Exhaust PM10 | Exhaust PM2.5 | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Reduction | | | | | | | | | | | | |
| Architectural Coating | 91.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Consumer Products | 7.38 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Electricity | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 24.20 | 24.20 | 24.21 | 24.26 | 24.20 |
| Hearth | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 0.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Landscaping | 46.96 | 20.47 | 24.03 | 37.50 | 25.40 | 25.40 | 0.00 | 30.04 | 30.04 | 47.63 | 0.00 | 30.45 |
| Mobile | 15.09 | 16.39 | 26.63 | 30.49 | 28.82 | 28.87 | 0.00 | 30.46 | 30.46 | 25.36 | 0.00 | 30.46 |
| Natural Gas | 38.10 | 38.11 | 38.11 | 38.51 | 38.11 | 38.11 | 0.00 | 38.11 | 38.11 | 38.02 | 38.10 | 38.11 |
| Water Indoor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 20.00 | 22.94 | 22.17 | 20.02 | 20.15 | 21.18 |
| Water Outdoor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## Operational Mobile Mitigation

Project Setting:

| Mitigation | Category | Measure | % Reduction | Input Value 1 | Input Value 2 | Input Value 3 |
|---|---|---|---|---|---|---|
| No | Land Use | Increase Density | 0.00 | 0.00 | 0.00 | |
| Yes | Land Use | Increase Diversity | 0.14 | 0.39 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| No | Land Use | Improve Walkability Design | 0.00 | 0.00 | | |
| No | Land Use | Improve Destination Accessibility | 0.00 | 0.00 | | |
| Yes | Land Use | Increase Transit Accessibility | 0.06 | 1.00 | | |
| No | Land Use | Integrate Below Market Rate Housing | 0.00 | 0.00 | | |
| | Land Use | Land Use SubTotal | 0.20 | | | |
| Yes | Neighborhood Enhancements | Improve Pedestrian Network | 2.00 | Project Site and Connecting Off-Site | | |
| Yes | Neighborhood Enhancements | Provide Traffic Calming Measures | 0.50 | 75.00 | 50.00 | |
| Yes | Neighborhood Enhancements | Implement NEV Network | 0.01 | | | |
| | Neighborhood Enhancements | Neighborhood Enhancements Subtotal | 0.15 | | | |
| Yes | Parking Policy Pricing | Limit Parking Supply | 0.00 | 0.00 | | |
| No | Parking Policy Pricing | Unbundle Parking Costs | 0.00 | 0.00 | | |
| No | Parking Policy Pricing | On-street Market Pricing | 0.00 | 0.00 | | |
| | Parking Policy Pricing | Parking Policy Pricing Subtotal | 0.00 | | | |
| No | Transit Improvements | Provide BRT System | 0.00 | 0.00 | | |
| Yes | Transit Improvements | Expand Transit Network | 0.00 | 2.00 | | |
| No | Transit Improvements | Increase Transit Frequency | 0.00 | | 0.00 | |
| | Transit Improvements | Transit Improvements Subtotal | 0.00 | | | |
| | | Land Use and Site Enhancement Subtotal | 0.32 | | | |
| Yes | Commute | Implement Trip Reduction Program | | 100.00 | Required | |
| Yes | Commute | Transit Subsidy | | 100.00 | $1.49 | |
| No | Commute | Implement Employee Parking "Cash Out" | | 0.00 | | |
| No | Commute | Workplace Parking Charge | | 0.00 | | |
| No | Commute | Encourage Telecommuting and Alternative Work Schedules | 0.00 | | | |
| No | Commute | Market Commute Trip Reduction Option | 0.00 | 0.00 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Yes | Commute | Employee Vanpool/Shuttle | 0.01 | 100.00 | 2.00 | |
| Yes | Commute | Provide Ride Sharing Program | | 100.00 | | |
| | Commute | Commute Subtotal | 0.01 | | | |
| No | School Trip | Implement School Bus Program | 0.00 | 0.00 | | |
| | | Total VMT Reduction | 0.33 | | | |

**Area Mitigation**

| Measure Implemented | Mitigation Measure | Input Value |
|---|---|---|
| No | Only Natural Gas Hearth | |
| Yes | No Hearth | |
| Yes | Use Low VOC Cleaning Supplies | |
| Yes | Use Low VOC Paint (Residential Interior) | 10.00 |
| Yes | Use Low VOC Paint (Residential Exterior) | 10.00 |
| Yes | Use Low VOC Paint (Non-residential Interior) | 10.00 |
| Yes | Use Low VOC Paint (Non-residential Exterior) | 10.00 |
| Yes | Use Low VOC Paint (Parking) | 10.00 |
| Yes | % Electric Lawnmower | 100.00 |
| Yes | % Electric Leafblower | 100.00 |
| Yes | % Electric Chainsaw | 100.00 |

**Energy Mitigation Measures**

| Measure Implemented | Mitigation Measure | Input Value 1 | Input Value 2 |
|---|---|---|---|
| Yes | Exceed Title 24 | 56.00 | |
| Yes | Install High Efficiency Lighting | 75.00 | |
| No | On-site Renewable | 0.00 | 100.00 |

| Appliance Type | Land Use Subtype | % Improvement |
|---|---|---|
| ClothWasher | Condo/Townhouse High Ri... | 30.00 |
| ClothWasher | Retirement Community | 30.00 |
| DishWasher | Condo/Townhouse High Ri... | 15.00 |
| DishWasher | Retirement Community | 15.00 |
| Fan | Condo/Townhouse High Ri... | 50.00 |
| Fan | Retirement Community | 50.00 |
| Refrigerator | Condo/Townhouse High Ri... | 15.00 |
| Refrigerator | Retirement Community | 15.00 |

**Water Mitigation Measures**

| Measure Implemented | Mitigation Measure | Input Value 1 | Input Value 2 |
|---|---|---|---|
| No | Apply Water Conservation on Strategy | 0.00 | 0.00 |
| Yes | Use Reclaimed Water | 0.00 | 50.00 |
| No | Use Grey Water | 0.00 | |
| Yes | Install low-flow bathroom faucet | 32.00 | |
| Yes | Install low-flow Kitchen faucet | 18.00 | |
| Yes | Install low-flow Toilet | 20.00 | |
| Yes | Install low-flow Shower | 20.00 | |
| Yes | Turf Reduction | 75.00 | |
| Yes | Use Water Efficient Irrigation Systems | 6.10 | |
| No | Water Efficient Landscape | 0.00 | 0.00 |

**Solid Waste Mitigation**

| Mitigation Measures | Input Value |
|---|---|

| | |
|---|---|
| Institute Recycling and Composting Services<br>Percent Reduction in Waste Disposed | 75.00 |

# Vineyards at Deer Creek- Phase 4 and 5
**Contra Costa County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Parking Lot | 260.00 | Space | 2.34 | 104,000.00 | 0 |
| City Park | 56.25 | Acre | 56.25 | 2,450,250.00 | 0 |
| Recreational Swimming Pool | 2.00 | 1000sqft | 0.05 | 2,000.00 | 0 |
| Condo/Townhouse High Rise | 125.00 | Dwelling Unit | 1.95 | 125,000.00 | 358 |
| Retirement Community | 475.00 | Dwelling Unit | 95.00 | 475,000.00 | 1359 |
| Strip Mall | 91.50 | 1000sqft | 2.10 | 91,500.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 58 |
| **Climate Zone** | 4 | | | **Operational Year** | 2033 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 146 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - Per PG&E 2018 CRSR

Land Use - Parking: assumed 2 spaces for 125 DUs, plus 10 extra spaces for recreation uses
City Park is open space/ agricultural uses

Construction Phase - Per Construction Questionnaire

Off-road Equipment - Estimated equipment use

Off-road Equipment -

Off-road Equipment - No demolition

Off-road Equipment - Estimated equipment use

Off-road Equipment -

Off-road Equipment - Estimated equipment use

Off-road Equipment -

Off-road Equipment -

Trips and VMT - vendor trips would be lower since city park was used to model the proposed natural open space, informal parkland, low impact trails,

Demolition - No demolition

Grading - Balanced between all phases

Vehicle Trips - Per Fehr and Peers TIA 2019

Woodstoves - Per BAAQMD Regulation 6, Rule 3

Energy Use -

Land Use Change -

Construction Off-road Equipment Mitigation - Per BAAQMD basic control measure

Mobile Land Use Mitigation - Green building design elements include narrower roadways

Mobile Commute Mitigation -

Area Mitigation - No hearth, low VOC cleaning supplies, low VOC paint, and electric landscape equipment

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblAreaMitigation | UseLowVOCPaintNonresidentialExteriorValue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintNonresidentialInteriorValue | 100 | 10 |
| tblAreaMitigation | UseLowVOCPaintParkingCheck | False | True |
| tblAreaMitigation | UseLowVOCPaintParkingValue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintResidentialExteriorValue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintResidentialInteriorValue | 100 | 10 |
| tblConstDustMitigation | CleanPavedRoadPercentReduction | 0 | 6 |
| tblConstDustMitigation | WaterUnpavedRoadMoistureContent | 0 | 12 |
| tblConstDustMitigation | WaterUnpavedRoadVehicleSpeed | 0 | 15 |

| | | | |
|---|---|---|---|
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 13.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 6.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 8.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 4.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 17.00 |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstructionPhase | NumDays | 220.00 | 500.00 |
| tblConstructionPhase | NumDays | 3,100.00 | 576.00 |
| tblConstructionPhase | NumDays | 200.00 | 0.00 |

| | | | |
|---|---|---|---|
| tblConstructionPhase | NumDays | 310.00 | 110.00 |
| tblConstructionPhase | NumDays | 220.00 | 22.00 |
| tblConstructionPhase | NumDays | 120.00 | 10.00 |
| tblFireplaces | NumberGas | 18.75 | 40.00 |
| tblFireplaces | NumberGas | 71.25 | 152.00 |
| tblFireplaces | NumberWood | 21.25 | 0.00 |
| tblFireplaces | NumberWood | 80.75 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 4.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 3.00 |
| tblProjectCharacteristics | CO2IntensityFactor | 641.35 | 146 |
| tblTripsAndVMT | VendorTripNumber | 498.00 | 298.00 |
| tblVehicleTrips | CC_TL | 7.30 | 15.60 |
| tblVehicleTrips | CNW_TL | 7.30 | 15.60 |
| tblVehicleTrips | CW_TL | 9.50 | 20.30 |
| tblVehicleTrips | HO_TL | 5.70 | 8.90 |
| tblVehicleTrips | HO_TL | 5.70 | 8.90 |
| tblVehicleTrips | HS_TL | 4.80 | 7.50 |
| tblVehicleTrips | HS_TL | 4.80 | 7.50 |
| tblVehicleTrips | HW_TL | 10.80 | 16.80 |
| tblVehicleTrips | HW_TL | 10.80 | 16.80 |
| tblVehicleTrips | ST_TR | 22.75 | 0.00 |
| tblVehicleTrips | ST_TR | 9.10 | 0.00 |
| tblVehicleTrips | SU_TR | 16.74 | 0.00 |
| tblVehicleTrips | SU_TR | 13.60 | 0.00 |
| tblVehicleTrips | WD_TR | 1.89 | 0.00 |
| tblVehicleTrips | WD_TR | 4.18 | 4.80 |
| tblVehicleTrips | WD_TR | 33.82 | 0.00 |
| tblVehicleTrips | WD_TR | 2.40 | 4.80 |
| tblVehicleTrips | WD_TR | 44.32 | 37.70 |
| tblWoodstoves | NumberCatalytic | 2.50 | 0.00 |
| tblWoodstoves | NumberCatalytic | 9.50 | 0.00 |

| | | | |
|---|---|---|---|
| tblWoodstoves | NumberNoncatalytic | 2.50 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 9.50 | 0.00 |

# 2.0 Emissions Summary

## 2.1 Overall Construction

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2030 | 0.6026 | 2.6969 | 4.9748 | 0.0160 | 1.0872 | 0.0713 | 1.1586 | 0.3685 | 0.0712 | 0.4397 | 0.0000 | 1,462.8143 | 1,462.8143 | 0.0498 | 0.0000 | 1,464.0600 |
| 2031 | 2.9247 | 4.1532 | 6.1135 | 0.0272 | 2.1343 | 0.0372 | 2.1716 | 0.5736 | 0.0365 | 0.6100 | 0.0000 | 2,489.8858 | 2,489.8858 | 0.0618 | 0.0000 | 2,491.4317 |
| 2032 | 3.1361 | 4.1642 | 6.0862 | 0.0273 | 2.1706 | 0.0376 | 2.2082 | 0.5832 | 0.0369 | 0.6201 | 0.0000 | 2,499.8454 | 2,499.8454 | 0.0612 | 0.0000 | 2,501.3753 |
| **Maximum** | **3.1361** | **4.1642** | **6.1135** | **0.0273** | **2.1706** | **0.0713** | **2.2082** | **0.5832** | **0.0712** | **0.6201** | **0.0000** | **2,499.8454** | **2,499.8454** | **0.0618** | **0.0000** | **2,501.3753** |

### Mitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2030 | 0.2220 | 1.1389 | 6.4018 | 0.0160 | 0.6752 | 0.0189 | 0.6941 | 0.2146 | 0.0188 | 0.2334 | 0.0000 | 1,462.8130 | 1,462.8130 | 0.0498 | 0.0000 | 1,464.0587 |
| 2031 | 2.7762 | 3.1746 | 6.3096 | 0.0272 | 2.0261 | 0.0192 | 2.0452 | 0.5470 | 0.0184 | 0.5654 | 0.0000 | 2,489.8853 | 2,489.8853 | 0.0618 | 0.0000 | 2,491.4312 |
| 2032 | 2.9836 | 3.1566 | 6.2843 | 0.0273 | 2.0605 | 0.0189 | 2.0794 | 0.5562 | 0.0182 | 0.5744 | 0.0000 | 2,499.8448 | 2,499.8448 | 0.0612 | 0.0000 | 2,501.3747 |
| **Maximum** | **2.9836** | **3.1746** | **6.4018** | **0.0273** | **2.0605** | **0.0192** | **2.0794** | **0.5562** | **0.0188** | **0.5744** | **0.0000** | **2,499.8448** | **2,499.8448** | **0.0618** | **0.0000** | **2,501.3747** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **10.23** | **32.18** | **-10.60** | **0.00** | **11.69** | **61.02** | **12.99** | **13.60** | **61.70** | **17.77** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---|---|---|---|---|
| 1 | 1-1-2030 | 3-31-2030 | 0.7696 | 0.1789 |
| 2 | 4-1-2030 | 6-30-2030 | 0.8225 | 0.2066 |
| 3 | 7-1-2030 | 9-30-2030 | 0.7445 | 0.2283 |
| 4 | 10-1-2030 | 12-31-2030 | 0.9780 | 0.7648 |
| 5 | 1-1-2031 | 3-31-2031 | 1.5706 | 1.3135 |
| 6 | 4-1-2031 | 6-30-2031 | 1.8249 | 1.5371 |
| 7 | 7-1-2031 | 9-30-2031 | 1.8449 | 1.5540 |
| 8 | 10-1-2031 | 12-31-2031 | 1.8630 | 1.5720 |
| 9 | 1-1-2032 | 3-31-2032 | 1.8252 | 1.5374 |
| 10 | 4-1-2032 | 6-30-2032 | 1.8083 | 1.5205 |
| 11 | 7-1-2032 | 9-30-2032 | 1.8282 | 1.5372 |
| | | Highest | 1.8630 | 1.5720 |

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 3.3516 | 0.0720 | 4.4559 | 3.7000e-004 | | 0.0264 | 0.0264 | | 0.0264 | 0.0264 | 0.0000 | 31.2537 | 31.2537 | 7.4100e-003 | 4.4000e-004 | 31.5700 |
| Energy | 0.0331 | 0.2836 | 0.1251 | 1.8100e-003 | | 0.0229 | 0.0229 | | 0.0229 | 0.0229 | 0.0000 | 574.0299 | 574.0299 | 0.0552 | 0.0161 | 580.2169 |
| Mobile | 0.9289 | 4.6567 | 12.1441 | 0.0610 | 7.3316 | 0.0336 | 7.3652 | 1.9659 | 0.0313 | 1.9972 | 0.0000 | 5,619.2996 | 5,619.2996 | 0.1524 | 0.0000 | 5,623.1083 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 78.8255 | 0.0000 | 78.8255 | 4.6585 | 0.0000 | 195.2867 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 14.5900 | 38.7060 | 53.2960 | 1.5062 | 0.0370 | 101.9698 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | **4.3136** | **5.0123** | **16.7251** | **0.0632** | **7.3316** | **0.0829** | **7.4145** | **1.9659** | **0.0805** | **2.0465** | **93.4154** | **6,263.2892** | **6,356.7047** | **6.3796** | **0.0535** | **6,532.1517** |

## Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 2.6521 | 0.0408 | 3.3783 | 1.5000e-004 | | 0.0184 | 0.0184 | | 0.0184 | 0.0184 | 0.0000 | 5.0962 | 5.0962 | 3.6400e-003 | 0.0000 | 5.1872 |
| Energy | 0.0210 | 0.1795 | 0.0785 | 1.1400e-003 | | 0.0145 | 0.0145 | | 0.0145 | 0.0145 | 0.0000 | 207.5678 | 207.5678 | 3.9800e-003 | 3.8100e-003 | 208.8012 |
| Mobile | 0.7684 | 3.8699 | 8.5274 | 0.0403 | 4.6871 | 0.0229 | 4.7100 | 1.2568 | 0.0213 | 1.2781 | 0.0000 | 3,711.7294 | 3,711.7294 | 0.1095 | 0.0000 | 3,714.4662 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 19.7064 | 0.0000 | 19.7064 | 1.1646 | 0.0000 | 48.8217 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 11.6720 | 29.8802 | 41.5521 | 1.2048 | 0.0295 | 80.4725 |
| **Total** | **3.4414** | **4.0902** | **11.9841** | **0.0416** | **4.6871** | **0.0558** | **4.7429** | **1.2568** | **0.0542** | **1.3110** | **31.3783** | **3,954.2735** | **3,985.6519** | **2.4865** | **0.0333** | **4,057.7488** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **20.22** | **18.40** | **28.35** | **34.24** | **36.07** | **32.70** | **36.03** | **36.07** | **32.73** | **35.94** | **66.41** | **36.87** | **37.30** | **61.03** | **37.73** | **37.88** |

## 2.3 Vegetation

### Vegetation

| | CO2e |
|---|---|
| Category | MT |
| Vegetation Land Change | -637.8800 |
| **Total** | **-637.8800** |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Demolition | Demolition | 1/1/2030 | 12/31/2029 | 5 | 0 | |
| 2 | Site Preparation | Site Preparation | 1/1/2030 | 1/14/2030 | 5 | 10 | |
| 3 | Grading | Grading | 1/15/2030 | 6/17/2030 | 5 | 110 | |
| 4 | Infrastructure Improvements | Trenching | 6/18/2030 | 9/17/2030 | 5 | 66 | |
| 5 | Paving | Paving | 9/18/2030 | 10/17/2030 | 5 | 22 | |
| 6 | Building Construction | Building Construction | 10/18/2030 | 12/31/2032 | 5 | 576 | |
| 7 | Architectural Coating | Architectural Coating | 2/1/2031 | 12/31/2032 | 5 | 500 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 495**

**Acres of Paving: 2.34**

**Residential Indoor: 1,215,000; Residential Outdoor: 405,000; Non-Residential Indoor: 141,750; Non-Residential Outdoor: 47,250;**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Demolition | Excavators | 3 | 8.00 | 158 | 0.38 |
| Demolition | Rubber Tired Dozers | 2 | 8.00 | 247 | 0.40 |
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 4 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |

| | | | | | |
|---|---|---|---|---|---|
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 3 | 6.00 | 78 | 0.48 |
| Infrastructure Improvements | Excavators | 8 | 8.00 | 158 | 0.38 |
| Infrastructure Improvements | Rubber Tired Loaders | 8 | 8.00 | 203 | 0.36 |
| Infrastructure Improvements | Tractors/Loaders/Backhoes | 8 | 8.00 | 97 | 0.37 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Demolition | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 10 | 25.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 1,535.00 | 298.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 3 | 307.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Infrastructure Improvements | 24 | 60.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

## 3.3 Site Preparation - 2030

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.0903 | 0.0000 | 0.0903 | 0.0497 | 0.0000 | 0.0497 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0122 | 0.0683 | 0.0815 | 2.3000e-004 | | 2.1800e-003 | 2.1800e-003 | | 2.1800e-003 | 2.1800e-003 | 0.0000 | 20.0023 | 20.0023 | 9.9000e-004 | 0.0000 | 20.0270 |
| **Total** | **0.0122** | **0.0683** | **0.0815** | **2.3000e-004** | **0.0903** | **2.1800e-003** | **0.0925** | **0.0497** | **2.1800e-003** | **0.0518** | **0.0000** | **20.0023** | **20.0023** | **9.9000e-004** | **0.0000** | **20.0270** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.6000e-004 | 8.0000e-005 | 1.0700e-003 | 0.0000 | 7.1000e-004 | 0.0000 | 7.2000e-004 | 1.9000e-004 | 0.0000 | 1.9000e-004 | 0.0000 | 0.4382 | 0.4382 | 1.0000e-005 | 0.0000 | 0.4383 |
| **Total** | **1.6000e-004** | **8.0000e-005** | **1.0700e-003** | **0.0000** | **7.1000e-004** | **0.0000** | **7.2000e-004** | **1.9000e-004** | **0.0000** | **1.9000e-004** | **0.0000** | **0.4382** | **0.4382** | **1.0000e-005** | **0.0000** | **0.4383** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fugitive Dust | | | | | 0.0386 | 0.0000 | 0.0386 | 0.0212 | 0.0000 | 0.0212 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 2.3300e-003 | 0.0101 | 0.1043 | 2.3000e-004 | | 3.1000e-004 | 3.1000e-004 | | 3.1000e-004 | 3.1000e-004 | 0.0000 | 20.0023 | 20.0023 | 9.9000e-004 | 0.0000 | 20.0270 |
| **Total** | **2.3300e-003** | **0.0101** | **0.1043** | **2.3000e-004** | **0.0386** | **3.1000e-004** | **0.0389** | **0.0212** | **3.1000e-004** | **0.0215** | **0.0000** | **20.0023** | **20.0023** | **9.9000e-004** | **0.0000** | **20.0270** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.6000e-004 | 8.0000e-005 | 1.0700e-003 | 0.0000 | 6.8000e-004 | 0.0000 | 6.8000e-004 | 1.8000e-004 | 0.0000 | 1.8000e-004 | 0.0000 | 0.4382 | 0.4382 | 1.0000e-005 | 0.0000 | 0.4383 |
| **Total** | **1.6000e-004** | **8.0000e-005** | **1.0700e-003** | **0.0000** | **6.8000e-004** | **0.0000** | **6.8000e-004** | **1.8000e-004** | **0.0000** | **1.8000e-004** | **0.0000** | **0.4382** | **0.4382** | **1.0000e-005** | **0.0000** | **0.4383** |

## 3.4 Grading - 2030

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.5937 | 0.0000 | 0.5937 | 0.2104 | 0.0000 | 0.2104 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.2690 | 1.1228 | 1.6710 | 5.5600e-003 | | 0.0405 | 0.0405 | | 0.0405 | 0.0405 | 0.0000 | 536.0955 | 536.0955 | 0.0217 | 0.0000 | 536.6374 |
| **Total** | **0.2690** | **1.1228** | **1.6710** | **5.5600e-003** | **0.5937** | **0.0405** | **0.6342** | **0.2104** | **0.0405** | **0.2509** | **0.0000** | **536.0955** | **536.0955** | **0.0217** | **0.0000** | **536.6374** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 2.3800e-003 | 1.2800e-003 | 0.0164 | 7.0000e-005 | 0.0109 | 5.0000e-005 | 0.0110 | 2.9000e-003 | 4.0000e-005 | 2.9400e-003 | 0.0000 | 6.6941 | 6.6941 | 9.0000e-005 | 0.0000 | 6.6963 |
| **Total** | **2.3800e-003** | **1.2800e-003** | **0.0164** | **7.0000e-005** | **0.0109** | **5.0000e-005** | **0.0110** | **2.9000e-003** | **4.0000e-005** | **2.9400e-003** | **0.0000** | **6.6941** | **6.6941** | **9.0000e-005** | **0.0000** | **6.6963** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.2538 | 0.0000 | 0.2538 | 0.0900 | 0.0000 | 0.0900 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0624 | 0.2704 | 2.5668 | 5.5600e-003 | | 8.3200e-003 | 8.3200e-003 | | 8.3200e-003 | 8.3200e-003 | 0.0000 | 536.0949 | 536.0949 | 0.0217 | 0.0000 | 536.6368 |
| **Total** | **0.0624** | **0.2704** | **2.5668** | **5.5600e-003** | **0.2538** | **8.3200e-003** | **0.2621** | **0.0900** | **8.3200e-003** | **0.0983** | **0.0000** | **536.0949** | **536.0949** | **0.0217** | **0.0000** | **536.6368** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 2.3800e-003 | 1.2800e-003 | 0.0164 | 7.0000e-005 | 0.0103 | 5.0000e-005 | 0.0104 | 2.7600e-003 | 4.0000e-005 | 2.8100e-003 | 0.0000 | 6.6941 | 6.6941 | 9.0000e-005 | 0.0000 | 6.6963 |
| **Total** | **2.3800e-003** | **1.2800e-003** | **0.0164** | **7.0000e-005** | **0.0103** | **5.0000e-005** | **0.0104** | **2.7600e-003** | **4.0000e-005** | **2.8100e-003** | **0.0000** | **6.6941** | **6.6941** | **9.0000e-005** | **0.0000** | **6.6963** |

## 3.5 Infrastructure Improvements - 2030

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1765 | 0.6410 | 1.9462 | 4.7200e-003 | | 0.0189 | 0.0189 | | 0.0189 | 0.0189 | 0.0000 | 405.7077 | 405.7077 | 0.0140 | 0.0000 | 406.0580 |
| **Total** | **0.1765** | **0.6410** | **1.9462** | **4.7200e-003** | | **0.0189** | **0.0189** | | **0.0189** | **0.0189** | **0.0000** | **405.7077** | **405.7077** | **0.0140** | **0.0000** | **406.0580** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 3.4300e-003 | 1.8400e-003 | 0.0236 | 1.1000e-004 | 0.0157 | 7.0000e-005 | 0.0158 | 4.1800e-003 | 6.0000e-005 | 4.2400e-003 | 0.0000 | 9.6395 | 9.6395 | 1.3000e-004 | 0.0000 | 9.6427 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | **3.4300e-003** | **1.8400e-003** | **0.0236** | **1.1000e-004** | **0.0157** | **7.0000e-005** | **0.0158** | **4.1800e-003** | **6.0000e-005** | **4.2400e-003** | **0.0000** | **9.6395** | **9.6395** | **1.3000e-004** | **0.0000** | **9.6427** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0472 | 0.2046 | 2.4013 | 4.7200e-003 | | 6.3000e-003 | 6.3000e-003 | | 6.3000e-003 | 6.3000e-003 | 0.0000 | 405.7072 | 405.7072 | 0.0140 | 0.0000 | 406.0575 |
| **Total** | **0.0472** | **0.2046** | **2.4013** | **4.7200e-003** | | **6.3000e-003** | **6.3000e-003** | | **6.3000e-003** | **6.3000e-003** | **0.0000** | **405.7072** | **405.7072** | **0.0140** | **0.0000** | **406.0575** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 3.4300e-003 | 1.8400e-003 | 0.0236 | 1.1000e-004 | 0.0149 | 7.0000e-005 | 0.0150 | 3.9800e-003 | 6.0000e-005 | 4.0400e-003 | 0.0000 | 9.6395 | 9.6395 | 1.3000e-004 | 0.0000 | 9.6427 |
| **Total** | **3.4300e-003** | **1.8400e-003** | **0.0236** | **1.1000e-004** | **0.0149** | **7.0000e-005** | **0.0150** | **3.9800e-003** | **6.0000e-005** | **4.0400e-003** | **0.0000** | **9.6395** | **9.6395** | **1.3000e-004** | **0.0000** | **9.6427** |

## 3.6 Paving - 2030

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0152 | 0.0783 | 0.1743 | 3.1000e-004 | | 3.6400e-003 | 3.6400e-003 | | 3.6400e-003 | 3.6400e-003 | 0.0000 | 26.5095 | 26.5095 | 1.2400e-003 | 0.0000 | 26.5405 |
| Paving | 3.0700e-003 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0183** | **0.0783** | **0.1743** | **3.1000e-004** | | **3.6400e-003** | **3.6400e-003** | | **3.6400e-003** | **3.6400e-003** | **0.0000** | **26.5095** | **26.5095** | **1.2400e-003** | **0.0000** | **26.5405** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 2.9000e-004 | 1.5000e-004 | 1.9600e-003 | 1.0000e-005 | 1.3100e-003 | 1.0000e-005 | 1.3100e-003 | 3.5000e-004 | 1.0000e-005 | 3.5000e-004 | 0.0000 | 0.8033 | 0.8033 | 1.0000e-005 | 0.0000 | 0.8036 |
| **Total** | **2.9000e-004** | **1.5000e-004** | **1.9600e-003** | **1.0000e-005** | **1.3100e-003** | **1.0000e-005** | **1.3100e-003** | **3.5000e-004** | **1.0000e-005** | **3.5000e-004** | **0.0000** | **0.8033** | **0.8033** | **1.0000e-005** | **0.0000** | **0.8036** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 3.0900e-003 | 0.0134 | 0.1903 | 3.1000e-004 | | 4.1000e-004 | 4.1000e-004 | | 4.1000e-004 | 4.1000e-004 | 0.0000 | 26.5094 | 26.5094 | 1.2400e-003 | 0.0000 | 26.5405 |
| Paving | 3.0700e-003 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | **6.1600e-003** | **0.0134** | **0.1903** | **3.1000e-004** | | **4.1000e-004** | **4.1000e-004** | | **4.1000e-004** | **4.1000e-004** | **0.0000** | **26.5094** | **26.5094** | **1.2400e-003** | **0.0000** | **26.5405** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 2.9000e-004 | 1.5000e-004 | 1.9600e-003 | 1.0000e-005 | 1.2400e-003 | 1.0000e-005 | 1.2500e-003 | 3.3000e-004 | 1.0000e-005 | 3.4000e-004 | 0.0000 | 0.8033 | 0.8033 | 1.0000e-005 | 0.0000 | 0.8036 |
| **Total** | **2.9000e-004** | **1.5000e-004** | **1.9600e-003** | **1.0000e-005** | **1.2400e-003** | **1.0000e-005** | **1.2500e-003** | **3.3000e-004** | **1.0000e-005** | **3.4000e-004** | **0.0000** | **0.8033** | **0.8033** | **1.0000e-005** | **0.0000** | **0.8036** |

## 3.7 Building Construction - 2030

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0347 | 0.2103 | 0.4282 | 8.2000e-004 | | 3.9300e-003 | 3.9300e-003 | | 3.9300e-003 | 3.9300e-003 | 0.0000 | 69.6582 | 69.6582 | 2.7900e-003 | 0.0000 | 69.7280 |
| **Total** | **0.0347** | **0.2103** | **0.4282** | **8.2000e-004** | | **3.9300e-003** | **3.9300e-003** | | **3.9300e-003** | **3.9300e-003** | **0.0000** | **69.6582** | **69.6582** | **2.7900e-003** | **0.0000** | **69.7280** |

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0154 | 0.5349 | 0.1468 | 1.9700e-003 | 0.0520 | 6.0000e-004 | 0.0526 | 0.0150 | 5.7000e-004 | 0.0156 | 0.0000 | 189.2300 | 189.2300 | 6.3000e-003 | 0.0000 | 189.3875 |
| Worker | 0.0704 | 0.0379 | 0.4839 | 2.1900e-003 | 0.3226 | 1.4300e-003 | 0.3241 | 0.0858 | 1.3100e-003 | 0.0871 | 0.0000 | 198.0361 | 198.0361 | 2.5900e-003 | 0.0000 | 198.1007 |
| **Total** | **0.0858** | **0.5728** | **0.6307** | **4.1600e-003** | **0.3746** | **2.0300e-003** | **0.3766** | **0.1008** | **1.8800e-003** | **0.1027** | **0.0000** | **387.2661** | **387.2661** | **8.8900e-003** | **0.0000** | **387.4882** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0119 | 0.0643 | 0.4655 | 8.2000e-004 | | 1.4400e-003 | 1.4400e-003 | | 1.4400e-003 | 1.4400e-003 | 0.0000 | 69.6581 | 69.6581 | 2.7900e-003 | 0.0000 | 69.7280 |
| **Total** | **0.0119** | **0.0643** | **0.4655** | **8.2000e-004** | | **1.4400e-003** | **1.4400e-003** | | **1.4400e-003** | **1.4400e-003** | **0.0000** | **69.6581** | **69.6581** | **2.7900e-003** | **0.0000** | **69.7280** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0154 | 0.5349 | 0.1468 | 1.9700e-003 | 0.0498 | 6.0000e-004 | 0.0504 | 0.0145 | 5.7000e-004 | 0.0151 | 0.0000 | 189.2300 | 189.2300 | 6.3000e-003 | 0.0000 | 189.3875 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Worker | 0.0704 | 0.0379 | 0.4839 | 2.1900e-003 | 0.3059 | 1.4300e-003 | 0.3073 | 0.0817 | 1.3100e-003 | 0.0830 | 0.0000 | 198.0361 | 198.0361 | 2.5900e-003 | 0.0000 | 198.1007 |
| **Total** | **0.0858** | **0.5728** | **0.6307** | **4.1600e-003** | **0.3556** | **2.0300e-003** | **0.3577** | **0.0962** | **1.8800e-003** | **0.0981** | **0.0000** | **387.2661** | **387.2661** | **8.8900e-003** | **0.0000** | **387.4882** |

## 3.7 Building Construction - 2031

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1708 | 1.0355 | 2.1085 | 4.0400e-003 | | 0.0193 | 0.0193 | | 0.0193 | 0.0193 | 0.0000 | 343.0336 | 343.0336 | 0.0138 | 0.0000 | 343.3777 |
| **Total** | **0.1708** | **1.0355** | **2.1085** | **4.0400e-003** | | **0.0193** | **0.0193** | | **0.0193** | **0.0193** | **0.0000** | **343.0336** | **343.0336** | **0.0138** | **0.0000** | **343.3777** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0747 | 2.6093 | 0.7175 | 9.6800e-003 | 0.2558 | 2.9100e-003 | 0.2588 | 0.0740 | 2.7800e-003 | 0.0768 | 0.0000 | 928.9807 | 928.9807 | 0.0306 | 0.0000 | 929.7457 |
| Worker | 0.3189 | 0.1715 | 2.2376 | 0.0105 | 1.5888 | 6.5500e-003 | 1.5953 | 0.4225 | 6.0200e-003 | 0.4286 | 0.0000 | 952.9293 | 952.9293 | 0.0117 | 0.0000 | 953.2209 |
| **Total** | **0.3936** | **2.7808** | **2.9551** | **0.0202** | **1.8446** | **9.4600e-003** | **1.8540** | **0.4965** | **8.8000e-003** | **0.5053** | **0.0000** | **1,881.9101** | **1,881.9101** | **0.0423** | **0.0000** | **1,882.9666** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0585 | 0.3166 | 2.2922 | 4.0400e-003 | | 7.0900e-003 | 7.0900e-003 | | 7.0900e-003 | 7.0900e-003 | 0.0000 | 343.0332 | 343.0332 | 0.0138 | 0.0000 | 343.3773 |
| **Total** | **0.0585** | **0.3166** | **2.2922** | **4.0400e-003** | | **7.0900e-003** | **7.0900e-003** | | **7.0900e-003** | **7.0900e-003** | **0.0000** | **343.0332** | **343.0332** | **0.0138** | **0.0000** | **343.3773** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0747 | 2.6093 | 0.7175 | 9.6800e-003 | 0.2450 | 2.9100e-003 | 0.2479 | 0.0713 | 2.7800e-003 | 0.0741 | 0.0000 | 928.9807 | 928.9807 | 0.0306 | 0.0000 | 929.7457 |
| Worker | 0.3189 | 0.1715 | 2.2376 | 0.0105 | 1.5064 | 6.5500e-003 | 1.5129 | 0.4023 | 6.0200e-003 | 0.4083 | 0.0000 | 952.9293 | 952.9293 | 0.0117 | 0.0000 | 953.2209 |
| **Total** | **0.3936** | **2.7808** | **2.9551** | **0.0202** | **1.7514** | **9.4600e-003** | **1.7608** | **0.4736** | **8.8000e-003** | **0.4824** | **0.0000** | **1,881.9101** | **1,881.9101** | **0.0423** | **0.0000** | **1,882.9666** |

## 3.7 Building Construction - 2032

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1715 | 1.0394 | 2.1166 | 4.0600e-003 | | 0.0194 | 0.0194 | | 0.0194 | 0.0194 | 0.0000 | 344.3479 | 344.3479 | 0.0138 | 0.0000 | 344.6933 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | **0.1715** | **1.0394** | **2.1166** | **4.0600e-003** | | **0.0194** | **0.0194** | | **0.0194** | **0.0194** | **0.0000** | **344.3479** | **344.3479** | **0.0138** | **0.0000** | **344.6933** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0744 | 2.5968 | 0.7172 | 9.7000e-003 | 0.2568 | 2.8900e-003 | 0.2597 | 0.0743 | 2.7600e-003 | 0.0770 | 0.0000 | 930.4397 | 930.4397 | 0.0304 | 0.0000 | 931.1989 |
| Worker | 0.2967 | 0.1596 | 2.1217 | 0.0103 | 1.5948 | 6.1200e-003 | 1.6010 | 0.4242 | 5.6300e-003 | 0.4298 | 0.0000 | 937.2623 | 937.2623 | 0.0108 | 0.0000 | 937.5322 |
| **Total** | **0.3711** | **2.7563** | **2.8388** | **0.0200** | **1.8517** | **9.0100e-003** | **1.8607** | **0.4984** | **8.3900e-003** | **0.5068** | **0.0000** | **1,867.7021** | **1,867.7021** | **0.0412** | **0.0000** | **1,868.7311** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0587 | 0.3178 | 2.3010 | 4.0600e-003 | | 7.1100e-003 | 7.1100e-003 | | 7.1100e-003 | 7.1100e-003 | 0.0000 | 344.3475 | 344.3475 | 0.0138 | 0.0000 | 344.6929 |
| **Total** | **0.0587** | **0.3178** | **2.3010** | **4.0600e-003** | | **7.1100e-003** | **7.1100e-003** | | **7.1100e-003** | **7.1100e-003** | **0.0000** | **344.3475** | **344.3475** | **0.0138** | **0.0000** | **344.6929** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0744 | 2.5968 | 0.7172 | 9.7000e-003 | 0.2460 | 2.8900e-003 | 0.2489 | 0.0716 | 2.7600e-003 | 0.0744 | 0.0000 | 930.4397 | 930.4397 | 0.0304 | 0.0000 | 931.1989 |
| Worker | 0.2967 | 0.1596 | 2.1217 | 0.0103 | 1.5121 | 6.1200e-003 | 1.5182 | 0.4039 | 5.6300e-003 | 0.4095 | 0.0000 | 937.2623 | 937.2623 | 0.0108 | 0.0000 | 937.5322 |
| **Total** | **0.3711** | **2.7563** | **2.8388** | **0.0200** | **1.7581** | **9.0100e-003** | **1.7671** | **0.4754** | **8.3900e-003** | **0.4838** | **0.0000** | **1,867.7021** | **1,867.7021** | **0.0412** | **0.0000** | **1,868.7311** |

## 3.8 Architectural Coating - 2031

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 2.2553 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0467 | 0.3057 | 0.6418 | 1.0600e-003 | | 7.2500e-003 | 7.2500e-003 | | 7.2500e-003 | 7.2500e-003 | 0.0000 | 91.1512 | 91.1512 | 3.6900e-003 | 0.0000 | 91.2434 |
| **Total** | **2.3020** | **0.3057** | **0.6418** | **1.0600e-003** | | **7.2500e-003** | **7.2500e-003** | | **7.2500e-003** | **7.2500e-003** | **0.0000** | **91.1512** | **91.1512** | **3.6900e-003** | **0.0000** | **91.2434** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0582 | 0.0313 | 0.4081 | 1.9200e-003 | 0.2898 | 1.1900e-003 | 0.2909 | 0.0771 | 1.1000e-003 | 0.0782 | 0.0000 | 173.7909 | 173.7909 | 2.1300e-003 | 0.0000 | 173.8441 |
| **Total** | **0.0582** | **0.0313** | **0.4081** | **1.9200e-003** | **0.2898** | **1.1900e-003** | **0.2909** | **0.0771** | **1.1000e-003** | **0.0782** | **0.0000** | **173.7909** | **173.7909** | **2.1300e-003** | **0.0000** | **173.8441** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 2.2553 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0106 | 0.0460 | 0.6542 | 1.0600e-003 | | 1.4100e-003 | 1.4100e-003 | | 1.4100e-003 | 1.4100e-003 | 0.0000 | 91.1511 | 91.1511 | 3.6900e-003 | 0.0000 | 91.2433 |
| **Total** | **2.2659** | **0.0460** | **0.6542** | **1.0600e-003** | | **1.4100e-003** | **1.4100e-003** | | **1.4100e-003** | **1.4100e-003** | **0.0000** | **91.1511** | **91.1511** | **3.6900e-003** | **0.0000** | **91.2433** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0582 | 0.0313 | 0.4081 | 1.9200e-003 | 0.2747 | 1.1900e-003 | 0.2759 | 0.0734 | 1.1000e-003 | 0.0745 | 0.0000 | 173.7909 | 173.7909 | 2.1300e-003 | 0.0000 | 173.8441 |
| **Total** | **0.0582** | **0.0313** | **0.4081** | **1.9200e-003** | **0.2747** | **1.1900e-003** | **0.2759** | **0.0734** | **1.1000e-003** | **0.0745** | **0.0000** | **173.7909** | **173.7909** | **2.1300e-003** | **0.0000** | **173.8441** |

## 3.8 Architectural Coating - 2032

## Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 2.4828 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0514 | 0.3365 | 0.7065 | 1.1700e-003 | | 7.9800e-003 | 7.9800e-003 | | 7.9800e-003 | 7.9800e-003 | 0.0000 | 100.3429 | 100.3429 | 4.0600e-003 | 0.0000 | 100.4444 |
| **Total** | **2.5341** | **0.3365** | **0.7065** | **1.1700e-003** | | **7.9800e-003** | **7.9800e-003** | | **7.9800e-003** | **7.9800e-003** | **0.0000** | **100.3429** | **100.3429** | **4.0600e-003** | **0.0000** | **100.4444** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0593 | 0.0319 | 0.4243 | 2.0700e-003 | 0.3190 | 1.2200e-003 | 0.3202 | 0.0848 | 1.1300e-003 | 0.0860 | 0.0000 | 187.4525 | 187.4525 | 2.1600e-003 | 0.0000 | 187.5065 |
| **Total** | **0.0593** | **0.0319** | **0.4243** | **2.0700e-003** | **0.3190** | **1.2200e-003** | **0.3202** | **0.0848** | **1.1300e-003** | **0.0860** | **0.0000** | **187.4525** | **187.4525** | **2.1600e-003** | **0.0000** | **187.5065** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Archit. Coating | 2.4828 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0117 | 0.0506 | 0.7201 | 1.1700e-003 | | 1.5600e-003 | 1.5600e-003 | | 1.5600e-003 | 1.5600e-003 | 0.0000 | 100.3428 | 100.3428 | 4.0600e-003 | 0.0000 | 100.4443 |
| **Total** | **2.4944** | **0.0506** | **0.7201** | **1.1700e-003** | | **1.5600e-003** | **1.5600e-003** | | **1.5600e-003** | **1.5600e-003** | **0.0000** | **100.3428** | **100.3428** | **4.0600e-003** | **0.0000** | **100.4443** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0593 | 0.0319 | 0.4243 | 2.0700e-003 | 0.3024 | 1.2200e-003 | 0.3037 | 0.0808 | 1.1300e-003 | 0.0819 | 0.0000 | 187.4525 | 187.4525 | 2.1600e-003 | 0.0000 | 187.5065 |
| **Total** | **0.0593** | **0.0319** | **0.4243** | **2.0700e-003** | **0.3024** | **1.2200e-003** | **0.3037** | **0.0808** | **1.1300e-003** | **0.0819** | **0.0000** | **187.4525** | **187.4525** | **2.1600e-003** | **0.0000** | **187.5065** |

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

Increase Diversity

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

Implement NEV Network

Expand Transit Network

Implement Trip Reduction Program

Transit Subsidy

Encourage Telecommuting and Alternative Work Schedules

Employee Vanpool/Shuttle

Provide Riade Sharing Program

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.7684 | 3.8699 | 8.5274 | 0.0403 | 4.6871 | 0.0229 | 4.7100 | 1.2568 | 0.0213 | 1.2781 | 0.0000 | 3,711.7294 | 3,711.7294 | 0.1095 | 0.0000 | 3,714.4662 |
| Unmitigated | 0.9289 | 4.6567 | 12.1441 | 0.0610 | 7.3316 | 0.0336 | 7.3652 | 1.9659 | 0.0313 | 1.9972 | 0.0000 | 5,619.2996 | 5,619.2996 | 0.1524 | 0.0000 | 5,623.1083 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| City Park | 0.00 | 0.00 | 0.00 | | |
| Condo/Townhouse High Rise | 600.00 | 538.75 | 428.75 | 2,040,171 | 1,319,121 |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Recreational Swimming Pool | 0.00 | 0.00 | 0.00 | | |
| Retirement Community | 2,280.00 | 964.25 | 926.25 | 6,834,252 | 4,418,848 |
| Strip Mall | 3,449.55 | 3,846.66 | 1869.35 | 10,775,827 | 6,824,427 |
| Total | 6,329.55 | 5,349.66 | 3,224.35 | 19,650,251 | 12,562,396 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| City Park | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 66 | 28 | 6 |
| Condo/Townhouse High Rise | 16.80 | 7.50 | 8.90 | 31.00 | 15.00 | 54.00 | 86 | 11 | 3 |
| Parking Lot | 9.50 | 7.30 | 7.30 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Recreational Swimming Pool | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 52 | 39 | 9 |
| Retirement Community | 16.80 | 7.50 | 8.90 | 31.00 | 15.00 | 54.00 | 86 | 11 | 3 |
| Strip Mall | 20.30 | 15.60 | 15.60 | 16.60 | 64.40 | 19.00 | 45 | 40 | 15 |

### 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| City Park | 0.608861 | 0.034484 | 0.184220 | 0.107205 | 0.011406 | 0.004825 | 0.010903 | 0.026628 | 0.001670 | 0.001490 | 0.005061 | 0.002613 | 0.000633 |
| Condo/Townhouse High Rise | 0.608861 | 0.034484 | 0.184220 | 0.107205 | 0.011406 | 0.004825 | 0.010903 | 0.026628 | 0.001670 | 0.001490 | 0.005061 | 0.002613 | 0.000633 |
| Parking Lot | 0.608861 | 0.034484 | 0.184220 | 0.107205 | 0.011406 | 0.004825 | 0.010903 | 0.026628 | 0.001670 | 0.001490 | 0.005061 | 0.002613 | 0.000633 |
| Recreational Swimming Pool | 0.608861 | 0.034484 | 0.184220 | 0.107205 | 0.011406 | 0.004825 | 0.010903 | 0.026628 | 0.001670 | 0.001490 | 0.005061 | 0.002613 | 0.000633 |
| Retirement Community | 0.608861 | 0.034484 | 0.184220 | 0.107205 | 0.011406 | 0.004825 | 0.010903 | 0.026628 | 0.001670 | 0.001490 | 0.005061 | 0.002613 | 0.000633 |
| Strip Mall | 0.608861 | 0.034484 | 0.184220 | 0.107205 | 0.011406 | 0.004825 | 0.010903 | 0.026628 | 0.001670 | 0.001490 | 0.005061 | 0.002613 | 0.000633 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Percent of Electricity Use Generated with Renewable Energy

Install Energy Efficient Appliances

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Electricity Mitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 246.3099 | 246.3099 | 0.0489 | 0.0101 | 250.5495 |
| NaturalGas Mitigated | 0.0210 | 0.1795 | 0.0785 | 1.1400e-003 | | 0.0145 | 0.0145 | | 0.0145 | 0.0145 | 0.0000 | 207.5678 | 207.5678 | 3.9800e-003 | 3.8100e-003 | 208.8012 |
| NaturalGas Unmitigated | 0.0331 | 0.2836 | 0.1251 | 1.8100e-003 | | 0.0229 | 0.0229 | | 0.0229 | 0.0229 | 0.0000 | 327.7200 | 327.7200 | 6.2800e-003 | 6.0100e-003 | 329.6674 |

### 5.2 Energy by Land Use - NaturalGas

## Unmitigated

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Condo/Townhouse High Rise | 1.07993e+006 | 5.8200e-003 | 0.0498 | 0.0212 | 3.2000e-004 | | 4.0200e-003 | 4.0200e-003 | | 4.0200e-003 | 4.0200e-003 | 0.0000 | 57.6292 | 57.6292 | 1.1000e-003 | 1.0600e-003 | 57.9717 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Retirement Community | 4.84445e+006 | 0.0261 | 0.2232 | 0.0950 | 1.4200e-003 | | 0.0181 | 0.0181 | | 0.0181 | 0.0181 | 0.0000 | 258.5185 | 258.5185 | 4.9500e-003 | 4.7400e-003 | 260.0548 |
| Strip Mall | 216855 | 1.1700e-003 | 0.0106 | 8.9300e-003 | 6.0000e-005 | | 8.1000e-004 | 8.1000e-004 | | 8.1000e-004 | 8.1000e-004 | 0.0000 | 11.5722 | 11.5722 | 2.2000e-004 | 2.1000e-004 | 11.6410 |
| **Total** | | **0.0331** | **0.2836** | **0.1251** | **1.8000e-003** | | **0.0229** | **0.0229** | | **0.0229** | **0.0229** | **0.0000** | **327.7200** | **327.7200** | **6.2700e-003** | **6.0100e-003** | **329.6674** |

## Mitigated

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Condo/Townhouse High Rise | 716586 | 3.8600e-003 | 0.0330 | 0.0141 | 2.1000e-004 | | 2.6700e-003 | 2.6700e-003 | | 2.6700e-003 | 2.6700e-003 | 0.0000 | 38.2398 | 38.2398 | 7.3000e-004 | 7.0000e-004 | 38.4670 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Retirement Community | 3.07116e+006 | 0.0166 | 0.1415 | 0.0602 | 9.0000e-004 | | 0.0114 | 0.0114 | | 0.0114 | 0.0114 | 0.0000 | 163.8890 | 163.8890 | 3.1400e-003 | 3.0000e-003 | 164.8629 |
| Strip Mall | 101922 | 5.5000e-004 | 5.0000e-003 | 4.2000e-003 | 3.0000e-005 | | 3.8000e-004 | 3.8000e-004 | | 3.8000e-004 | 3.8000e-004 | 0.0000 | 5.4389 | 5.4389 | 1.0000e-004 | 1.0000e-004 | 5.4713 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | | **0.0210** | **0.1795** | **0.0785** | **1.1400e-003** | | **0.0145** | **0.0145** | | **0.0145** | **0.0145** | **0.0000** | **207.5678** | **207.5678** | **3.9700e-003** | **3.8000e-003** | **208.8012** |

## 5.3 Energy by Land Use - Electricity

### Unmitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Condo/Townhouse High Rise | 548501 | 36.3242 | 7.2200e-003 | 1.4900e-003 | 36.9494 |
| Parking Lot | 36400 | 2.4106 | 4.8000e-004 | 1.0000e-004 | 2.4521 |
| Recreational Swimming Pool | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Retirement Community | 2.15628e+006 | 142.7986 | 0.0284 | 5.8700e-003 | 145.2565 |
| Strip Mall | 978135 | 64.7765 | 0.0129 | 2.6600e-003 | 65.8914 |
| **Total** | | **246.3099** | **0.0489** | **0.0101** | **250.5495** |

### Mitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Condo/Townhouse High Rise | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

| | | | | | |
|---|---|---|---|---|---|
| Retirement Community | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Strip Mall | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

Use Low VOC Cleaning Supplies

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 2.6521 | 0.0408 | 3.3783 | 1.5000e-004 | | 0.0184 | 0.0184 | | 0.0184 | 0.0184 | 0.0000 | 5.0962 | 5.0962 | 3.6400e-003 | 0.0000 | 5.1872 |
| Unmitigated | 3.3516 | 0.0720 | 4.4559 | 3.7000e-004 | | 0.0264 | 0.0264 | | 0.0264 | 0.0264 | 0.0000 | 31.2537 | 31.2537 | 7.4100e-003 | 4.4000e-004 | 31.5700 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.4738 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 2.7421 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 2.4200e-003 | 0.0207 | 8.8100e-003 | 1.3000e-004 | | 1.6700e-003 | 1.6700e-003 | | 1.6700e-003 | 1.6700e-003 | 0.0000 | 23.9691 | 23.9691 | 4.6000e-004 | 4.4000e-004 | 24.1116 |
| Landscaping | 0.1333 | 0.0513 | 4.4470 | 2.4000e-004 | | 0.0247 | 0.0247 | | 0.0247 | 0.0247 | 0.0000 | 7.2846 | 7.2846 | 6.9500e-003 | 0.0000 | 7.4584 |
| **Total** | **3.3516** | **0.0720** | **4.4559** | **3.7000e-004** | | **0.0264** | **0.0264** | | **0.0264** | **0.0264** | **0.0000** | **31.2537** | **31.2537** | **7.4100e-003** | **4.4000e-004** | **31.5700** |

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.0421 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 2.5393 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 0.0707 | 0.0408 | 3.3783 | 1.5000e-004 | | 0.0184 | 0.0184 | | 0.0184 | 0.0184 | 0.0000 | 5.0962 | 5.0962 | 3.6400e-003 | 0.0000 | 5.1872 |
| **Total** | **2.6521** | **0.0408** | **3.3783** | **1.5000e-004** | | **0.0184** | **0.0184** | | **0.0184** | **0.0184** | **0.0000** | **5.0962** | **5.0962** | **3.6400e-003** | **0.0000** | **5.1872** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

Use Reclaimed Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Turf Reduction

Use Water Efficient Irrigation System

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 41.5521 | 1.2048 | 0.0295 | 80.4725 |
| Unmitigated | 53.2960 | 1.5062 | 0.0370 | 101.9698 |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| City Park | 0 / 67.0208 | 15.5345 | 3.0900e-003 | 6.4000e-004 | 15.8019 |
| Condo/Townhouse High Rise | 8.14425 / 5.13442 | 6.6923 | 0.2662 | 6.4400e-003 | 15.2649 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0.118286 / 0.0724981 | 0.0967 | 3.8700e-003 | 9.0000e-005 | 0.2212 |
| Retirement Community | 30.9482 / 19.5108 | 25.4307 | 1.0116 | 0.0245 | 58.0065 |

| | | | | | |
|---|---|---|---|---|---|
| Strip Mall | 6.77764 / 4.15403 | 5.5418 | 0.2215 | 5.3500e-003 | 12.6754 |
| **Total** | | **53.2960** | **1.5062** | **0.0370** | **101.9698** |

**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| City Park | 0 / 50.346 | 11.6695 | 2.3200e-003 | 4.8000e-004 | 11.8704 |
| Condo/Townhouse High Rise | 6.5154 / 3.85698 | 5.2958 | 0.2130 | 5.1500e-003 | 12.1528 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0.094629 / 0.0544605 | 0.0766 | 3.0900e-003 | 7.0000e-005 | 0.1761 |
| Retirement Community | 24.7585 / 14.6565 | 20.1239 | 0.8092 | 0.0196 | 46.1807 |
| Strip Mall | 5.42211 / 3.12051 | 4.3864 | 0.1772 | 4.2800e-003 | 10.0925 |
| **Total** | | **41.5521** | **1.2048** | **0.0295** | **80.4725** |

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|

| | MT/yr | | | |
|---|---|---|---|---|
| Mitigated | 19.7064 | 1.1646 | 0.0000 | 48.8217 |
| Unmitigated | 78.8255 | 4.6585 | 0.0000 | 195.2867 |

## 8.2 Waste by Land Use

### Unmitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| City Park | 4.84 | 0.9825 | 0.0581 | 0.0000 | 2.4340 |
| Condo/Townhouse High Rise | 57.5 | 11.6720 | 0.6898 | 0.0000 | 28.9168 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 11.4 | 2.3141 | 0.1368 | 0.0000 | 5.7331 |
| Retirement Community | 218.5 | 44.3535 | 2.6212 | 0.0000 | 109.8840 |
| Strip Mall | 96.08 | 19.5034 | 1.1526 | 0.0000 | 48.3188 |
| **Total** | | **78.8255** | **4.6585** | **0.0000** | **195.2867** |

### Mitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |

| | | | | | |
|---|---|---|---|---|---|
| City Park | 1.21 | 0.2456 | 0.0145 | 0.0000 | 0.6085 |
| Condo/Townhouse High Rise | 14.375 | 2.9180 | 0.1725 | 0.0000 | 7.2292 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 2.85 | 0.5785 | 0.0342 | 0.0000 | 1.4333 |
| Retirement Community | 54.625 | 11.0884 | 0.6553 | 0.0000 | 27.4710 |
| Strip Mall | 24.02 | 4.8758 | 0.2882 | 0.0000 | 12.0797 |
| **Total** | | **19.7064** | **1.1646** | **0.0000** | **48.8217** |

## 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Stationary Equipment

### Fire Pumps and Emergency Generators

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

### Boilers

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

### User Defined Equipment

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|

| Category | MT | | | |
|---|---|---|---|---|
| Unmitigated | -637.8800 | 0.0000 | 0.0000 | -637.8800 |

## 11.1 Vegetation Land Change

### Vegetation Type

| | Initial/Final | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| | Acres | MT | | | |
| Grassland | 204 / 56 | -637.8800 | 0.0000 | 0.0000 | -637.8800 |
| **Total** | | **-637.8800** | **0.0000** | **0.0000** | **-637.8800** |

Vineyards at Deer Creek- Phase 4 and 5 - Contra Costa County, Summer

# Vineyards at Deer Creek- Phase 4 and 5

**Contra Costa County, Summer**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Parking Lot | 260.00 | Space | 2.34 | 104,000.00 | 0 |
| City Park | 56.25 | Acre | 56.25 | 2,450,250.00 | 0 |
| Recreational Swimming Pool | 2.00 | 1000sqft | 0.05 | 2,000.00 | 0 |
| Condo/Townhouse High Rise | 125.00 | Dwelling Unit | 1.95 | 125,000.00 | 358 |
| Retirement Community | 475.00 | Dwelling Unit | 95.00 | 475,000.00 | 1359 |
| Strip Mall | 91.50 | 1000sqft | 2.10 | 91,500.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 58 |
| **Climate Zone** | 4 | | | **Operational Year** | 2033 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 146 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - Per PG&E 2018 CRSR

Land Use - Parking: assumed 2 spaces for 125 DUs, plus 10 extra spaces for recreation uses
City Park is open space/ agricultural uses

Construction Phase - Per Construction Questionnaire

Off-road Equipment - Estimated equipment use

Off-road Equipment -

Off-road Equipment - No demolition

Off-road Equipment - Estimated equipment use

Off-road Equipment -

Off-road Equipment - Estimated equipment use

Off-road Equipment -

Off-road Equipment -

Trips and VMT - vendor trips would be lower since city park was used to model the proposed natural open space, informal parkland, low impact trails,

Demolition - No demolition

Grading - Balanced between all phases

Vehicle Trips - Per Fehr and Peers TIA 2019

Woodstoves - Per BAAQMD Regulation 6, Rule 3

Energy Use -

Land Use Change -

Construction Off-road Equipment Mitigation - Per BAAQMD basic control measure

Mobile Land Use Mitigation - Green building design elements include narrower roadways

Mobile Commute Mitigation -

Area Mitigation - No hearth, low VOC cleaning supplies, low VOC paint, and electric landscape equipment

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblAreaMitigation | UseLowVOCPaintNonresidentialExterior Value | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintNonresidentialInterior Value | 100 | 10 |
| tblAreaMitigation | UseLowVOCPaintParkingCheck | False | True |
| tblAreaMitigation | UseLowVOCPaintParkingValue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintResidentialExteriorVa lue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintResidentialInteriorVal ue | 100 | 10 |
| tblConstDustMitigation | CleanPavedRoadPercentReduction | 0 | 6 |
| tblConstDustMitigation | WaterUnpavedRoadMoistureContent | 0 | 12 |
| tblConstDustMitigation | WaterUnpavedRoadVehicleSpeed | 0 | 15 |

| | | | |
|---|---|---|---|
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 13.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 6.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 8.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 4.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 17.00 |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstructionPhase | NumDays | 220.00 | 500.00 |
| tblConstructionPhase | NumDays | 3,100.00 | 576.00 |
| tblConstructionPhase | NumDays | 200.00 | 0.00 |

| | | | |
|---|---|---|---|
| tblConstructionPhase | NumDays | 310.00 | 110.00 |
| tblConstructionPhase | NumDays | 220.00 | 22.00 |
| tblConstructionPhase | NumDays | 120.00 | 10.00 |
| tblFireplaces | NumberGas | 18.75 | 40.00 |
| tblFireplaces | NumberGas | 71.25 | 152.00 |
| tblFireplaces | NumberWood | 21.25 | 0.00 |
| tblFireplaces | NumberWood | 80.75 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 4.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 3.00 |
| tblProjectCharacteristics | CO2IntensityFactor | 641.35 | 146 |
| tblTripsAndVMT | VendorTripNumber | 498.00 | 298.00 |
| tblVehicleTrips | CC_TL | 7.30 | 15.60 |
| tblVehicleTrips | CNW_TL | 7.30 | 15.60 |
| tblVehicleTrips | CW_TL | 9.50 | 20.30 |
| tblVehicleTrips | HO_TL | 5.70 | 8.90 |
| tblVehicleTrips | HO_TL | 5.70 | 8.90 |
| tblVehicleTrips | HS_TL | 4.80 | 7.50 |
| tblVehicleTrips | HS_TL | 4.80 | 7.50 |
| tblVehicleTrips | HW_TL | 10.80 | 16.80 |
| tblVehicleTrips | HW_TL | 10.80 | 16.80 |
| tblVehicleTrips | ST_TR | 22.75 | 0.00 |
| tblVehicleTrips | ST_TR | 9.10 | 0.00 |
| tblVehicleTrips | SU_TR | 16.74 | 0.00 |
| tblVehicleTrips | SU_TR | 13.60 | 0.00 |
| tblVehicleTrips | WD_TR | 1.89 | 0.00 |
| tblVehicleTrips | WD_TR | 4.18 | 4.80 |
| tblVehicleTrips | WD_TR | 33.82 | 0.00 |
| tblVehicleTrips | WD_TR | 2.40 | 4.80 |
| tblVehicleTrips | WD_TR | 44.32 | 37.70 |
| tblWoodstoves | NumberCatalytic | 2.50 | 0.00 |
| tblWoodstoves | NumberCatalytic | 9.50 | 0.00 |

| | | | |
|---|---|---|---|
| tblWoodstoves | NumberNoncatalytic | 2.50 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 9.50 | 0.00 |

## 2.0 Emissions Summary

### 2.1 Overall Construction (Maximum Daily Emission)

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2030 | 5.4587 | 29.2763 | 59.7922 | 0.1961 | 18.2141 | 0.7374 | 18.6514 | 9.9699 | 0.7373 | 10.4071 | 0.0000 | 19,831.0944 | 19,831.0944 | 0.4881 | 0.0000 | 19,843.2962 |
| 2031 | 24.3610 | 31.7896 | 50.2777 | 0.2203 | 17.1491 | 0.2914 | 17.4406 | 4.5944 | 0.2856 | 4.8800 | 0.0000 | 22,201.3246 | 22,201.3246 | 0.5308 | 0.0000 | 22,214.5958 |
| 2032 | 24.1233 | 31.5174 | 49.0024 | 0.2180 | 17.1492 | 0.2871 | 17.4362 | 4.5944 | 0.2816 | 4.8760 | 0.0000 | 21,971.7425 | 21,971.7425 | 0.5181 | 0.0000 | 21,984.6961 |
| **Maximum** | **24.3610** | **31.7896** | **59.7922** | **0.2203** | **18.2141** | **0.7374** | **18.6514** | **9.9699** | **0.7373** | **10.4071** | **0.0000** | **22,201.3246** | **22,201.3246** | **0.5308** | **0.0000** | **22,214.5958** |

**Mitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2030 | 3.8671 | 23.7674 | 73.5808 | 0.1961 | 13.8834 | 0.1929 | 14.0140 | 4.2827 | 0.1927 | 4.3454 | 0.0000 | 19,831.0944 | 19,831.0944 | 0.4881 | 0.0000 | 19,843.2962 |
| 2031 | 23.1968 | 24.0980 | 51.7897 | 0.2203 | 16.2738 | 0.1485 | 16.4224 | 4.3796 | 0.1427 | 4.5223 | 0.0000 | 22,201.3246 | 22,201.3246 | 0.5308 | 0.0000 | 22,214.5958 |
| 2032 | 22.9590 | 23.8259 | 50.5144 | 0.2180 | 16.2738 | 0.1442 | 16.4180 | 4.3796 | 0.1387 | 4.5183 | 0.0000 | 21,971.7425 | 21,971.7425 | 0.5181 | 0.0000 | 21,984.6960 |
| **Maximum** | **23.1968** | **24.0980** | **73.5808** | **0.2203** | **16.2738** | **0.1929** | **16.4224** | **4.3796** | **0.1927** | **4.5223** | **0.0000** | **22,201.3246** | **22,201.3246** | **0.5308** | **0.0000** | **22,214.5958** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **7.27** | **22.57** | **-10.57** | **0.00** | **11.58** | **63.10** | **12.47** | **31.93** | **63.65** | **33.61** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 19.5369 | 4.2853 | 50.9928 | 0.0263 | | 0.5751 | 0.5751 | | 0.5751 | 0.5751 | 0.0000 | 4,832.7505 | 4,832.7505 | 0.1761 | 0.0870 | 4,863.0677 |
| Energy | 0.1815 | 1.5541 | 0.6855 | 9.9000e-003 | | 0.1254 | 0.1254 | | 0.1254 | 0.1254 | | 1,979.4488 | 1,979.4488 | 0.0379 | 0.0363 | 1,991.2117 |
| Mobile | 7.0485 | 29.2201 | 85.2176 | 0.4193 | 48.8144 | 0.2164 | 49.0308 | 13.0516 | 0.2012 | 13.2528 | | 42,516.4096 | 42,516.4096 | 1.0922 | | 42,543.7150 |
| **Total** | **26.7669** | **35.0595** | **136.8958** | **0.4555** | **48.8144** | **0.9168** | **49.7312** | **13.0516** | **0.9017** | **13.9533** | **0.0000** | **49,328.6089** | **49,328.6089** | **1.3062** | **0.1233** | **49,397.9944** |

### Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 14.9298 | 0.4530 | 37.5369 | 1.7000e-003 | | 0.2049 | 0.2049 | | 0.2049 | 0.2049 | 0.0000 | 62.4183 | 62.4183 | 0.0446 | 0.0000 | 63.5324 |
| Energy | 0.1149 | 0.9837 | 0.4300 | 6.2700e-003 | | 0.0794 | 0.0794 | | 0.0794 | 0.0794 | | 1,253.7221 | 1,253.7221 | 0.0240 | 0.0230 | 1,261.1723 |
| Mobile | 5.9992 | 24.4569 | 58.4348 | 0.2765 | 31.2064 | 0.1470 | 31.3534 | 8.3437 | 0.1366 | 8.4804 | | 28,062.6419 | 28,062.6419 | 0.7774 | | 28,082.0777 |
| **Total** | **21.0440** | **25.8936** | **96.4016** | **0.2845** | **31.2064** | **0.4313** | **31.6377** | **8.3437** | **0.4209** | **8.7646** | **0.0000** | **29,378.7823** | **29,378.7823** | **0.8460** | **0.0230** | **29,406.7824** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **21.38** | **26.14** | **29.58** | **37.54** | **36.07** | **52.96** | **36.38** | **36.07** | **53.32** | **37.19** | **0.00** | **40.44** | **40.44** | **35.23** | **81.35** | **40.47** |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Demolition | Demolition | 1/1/2030 | 12/31/2029 | 5 | 0 | |
| 2 | Site Preparation | Site Preparation | 1/1/2030 | 1/14/2030 | 5 | 10 | |
| 3 | Grading | Grading | 1/15/2030 | 6/17/2030 | 5 | 110 | |
| 4 | Infrastructure Improvements | Trenching | 6/18/2030 | 9/17/2030 | 5 | 66 | |
| 5 | Paving | Paving | 9/18/2030 | 10/17/2030 | 5 | 22 | |
| 6 | Building Construction | Building Construction | 10/18/2030 | 12/31/2032 | 5 | 576 | |
| 7 | Architectural Coating | Architectural Coating | 2/1/2031 | 12/31/2032 | 5 | 500 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 495**

**Acres of Paving: 2.34**

**Residential Indoor: 1,215,000; Residential Outdoor: 405,000; Non-Residential Indoor: 141,750; Non-Residential Outdoor: 47,250;**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Demolition | Excavators | 3 | 8.00 | 158 | 0.38 |
| Demolition | Rubber Tired Dozers | 2 | 8.00 | 247 | 0.40 |
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |

| | | | | | |
|---|---|---|---|---|---|
| Grading | Scrapers | 4 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 3 | 6.00 | 78 | 0.48 |
| Infrastructure Improvements | Excavators | 8 | 8.00 | 158 | 0.38 |
| Infrastructure Improvements | Rubber Tired Loaders | 8 | 8.00 | 203 | 0.36 |
| Infrastructure Improvements | Tractors/Loaders/Backhoes | 8 | 8.00 | 97 | 0.37 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Demolition | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 10 | 25.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 1,535.00 | 298.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 3 | 307.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Infrastructure Improvements | 24 | 60.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

### 3.3 Site Preparation - 2030

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 18.0663 | 0.0000 | 18.0663 | 9.9307 | 0.0000 | 9.9307 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.4399 | 13.6680 | 16.2918 | 0.0466 | | 0.4367 | 0.4367 | | 0.4367 | 0.4367 | | 4,409.7537 | 4,409.7537 | 0.2176 | | 4,415.1936 |
| **Total** | **2.4399** | **13.6680** | **16.2918** | **0.0466** | **18.0663** | **0.4367** | **18.5029** | **9.9307** | **0.4367** | **10.3673** | | **4,409.7537** | **4,409.7537** | **0.2176** | | **4,415.1936** |

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0335 | 0.0151 | 0.2446 | 1.0500e-003 | 0.1479 | 6.3000e-004 | 0.1485 | 0.0392 | 5.8000e-004 | 0.0398 | | 105.3102 | 105.3102 | 1.3900e-003 | | 105.3449 |
| **Total** | **0.0335** | **0.0151** | **0.2446** | **1.0500e-003** | **0.1479** | **6.3000e-004** | **0.1485** | **0.0392** | **5.8000e-004** | **0.0398** | | **105.3102** | **105.3102** | **1.3900e-003** | | **105.3449** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 7.7233 | 0.0000 | 7.7233 | 4.2454 | 0.0000 | 4.2454 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.4656 | 2.0175 | 20.8690 | 0.0466 | | 0.0621 | 0.0621 | | 0.0621 | 0.0621 | 0.0000 | 4,409.7537 | 4,409.7537 | 0.2176 | | 4,415.1936 |
| **Total** | **0.4656** | **2.0175** | **20.8690** | **0.0466** | **7.7233** | **0.0621** | **7.7854** | **4.2454** | **0.0621** | **4.3075** | **0.0000** | **4,409.7537** | **4,409.7537** | **0.2176** | | **4,415.1936** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0335 | 0.0151 | 0.2446 | 1.0500e-003 | 0.1402 | 6.3000e-004 | 0.1408 | 0.0373 | 5.8000e-004 | 0.0379 | | 105.3102 | 105.3102 | 1.3900e-003 | | 105.3449 |
| **Total** | **0.0335** | **0.0151** | **0.2446** | **1.0500e-003** | **0.1402** | **6.3000e-004** | **0.1408** | **0.0373** | **5.8000e-004** | **0.0379** | | **105.3102** | **105.3102** | **1.3900e-003** | | **105.3449** |

## 3.4 Grading - 2030

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 10.7943 | 0.0000 | 10.7943 | 3.8255 | 0.0000 | 3.8255 | | | 0.0000 | | | 0.0000 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 4.8901 | 20.4142 | 30.3811 | 0.1010 | | 0.7365 | 0.7365 | | 0.7365 | 0.7365 | | 10,744.4396 | 10,744.4396 | 0.4344 | | 10,755.3003 |
| **Total** | **4.8901** | **20.4142** | **30.3811** | **0.1010** | **10.7943** | **0.7365** | **11.5308** | **3.8255** | **0.7365** | **4.5620** | | **10,744.4396** | **10,744.4396** | **0.4344** | | **10,755.3003** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0465 | 0.0209 | 0.3397 | 1.4700e-003 | 0.2054 | 8.8000e-004 | 0.2063 | 0.0545 | 8.1000e-004 | 0.0553 | | 146.2641 | 146.2641 | 1.9300e-003 | | 146.3124 |
| **Total** | **0.0465** | **0.0209** | **0.3397** | **1.4700e-003** | **0.2054** | **8.8000e-004** | **0.2063** | **0.0545** | **8.1000e-004** | **0.0553** | | **146.2641** | **146.2641** | **1.9300e-003** | | **146.3124** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 4.6146 | 0.0000 | 4.6146 | 1.6354 | 0.0000 | 1.6354 | | | 0.0000 | | | 0.0000 |
| Off-Road | 1.1344 | 4.9156 | 46.6696 | 0.1010 | | 0.1513 | 0.1513 | | 0.1513 | 0.1513 | 0.0000 | 10,744.4396 | 10,744.4396 | 0.4344 | | 10,755.3003 |
| **Total** | **1.1344** | **4.9156** | **46.6696** | **0.1010** | **4.6146** | **0.1513** | **4.7658** | **1.6354** | **0.1513** | **1.7867** | **0.0000** | **10,744.4396** | **10,744.4396** | **0.4344** | | **10,755.3003** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0465 | 0.0209 | 0.3397 | 1.4700e-003 | 0.1947 | 8.8000e-004 | 0.1955 | 0.0518 | 8.1000e-004 | 0.0527 | | 146.2641 | 146.2641 | 1.9300e-003 | | 146.3124 |
| **Total** | **0.0465** | **0.0209** | **0.3397** | **1.4700e-003** | **0.1947** | **8.8000e-004** | **0.1955** | **0.0518** | **8.1000e-004** | **0.0527** | | **146.2641** | **146.2641** | **1.9300e-003** | | **146.3124** |

## 3.5 Infrastructure Improvements - 2030

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 5.3472 | 19.4252 | 58.9769 | 0.1431 | | 0.5736 | 0.5736 | | 0.5736 | 0.5736 | | 13,552.0042 | 13,552.0042 | 0.4681 | | 13,563.7065 |
| **Total** | **5.3472** | **19.4252** | **58.9769** | **0.1431** | | **0.5736** | **0.5736** | | **0.5736** | **0.5736** | | **13,552.0042** | **13,552.0042** | **0.4681** | | **13,563.7065** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.1115 | 0.0502 | 0.8153 | 3.5200e-003 | 0.4929 | 2.1100e-003 | 0.4950 | 0.1307 | 1.9400e-003 | 0.1327 | | 351.0339 | 351.0339 | 4.6300e-003 | | 351.1496 |
| **Total** | **0.1115** | **0.0502** | **0.8153** | **3.5200e-003** | **0.4929** | **2.1100e-003** | **0.4950** | **0.1307** | **1.9400e-003** | **0.1327** | | **351.0339** | **351.0339** | **4.6300e-003** | | **351.1496** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.4308 | 6.2001 | 72.7655 | 0.1431 | | 0.1908 | 0.1908 | | 0.1908 | 0.1908 | 0.0000 | 13,552.0042 | 13,552.0042 | 0.4681 | | 13,563.7065 |
| **Total** | **1.4308** | **6.2001** | **72.7655** | **0.1431** | | **0.1908** | **0.1908** | | **0.1908** | **0.1908** | **0.0000** | **13,552.0042** | **13,552.0042** | **0.4681** | | **13,563.7065** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.1115 | 0.0502 | 0.8153 | 3.5200e-003 | 0.4672 | 2.1100e-003 | 0.4693 | 0.1244 | 1.9400e-003 | 0.1264 | | 351.0339 | 351.0339 | 4.6300e-003 | | 351.1496 |
| **Total** | **0.1115** | **0.0502** | **0.8153** | **3.5200e-003** | **0.4672** | **2.1100e-003** | **0.4693** | **0.1244** | **1.9400e-003** | **0.1264** | | **351.0339** | **351.0339** | **4.6300e-003** | | **351.1496** |

## 3.6 Paving - 2030

## Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3845 | 7.1202 | 15.8495 | 0.0281 | | 0.3306 | 0.3306 | | 0.3306 | 0.3306 | | 2,656.5168 | 2,656.5168 | 0.1245 | | 2,659.6302 |
| Paving | 0.2787 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.6632** | **7.1202** | **15.8495** | **0.0281** | | **0.3306** | **0.3306** | | **0.3306** | **0.3306** | | **2,656.5168** | **2,656.5168** | **0.1245** | | **2,659.6302** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0279 | 0.0126 | 0.2038 | 8.8000e-004 | 0.1232 | 5.3000e-004 | 0.1238 | 0.0327 | 4.8000e-004 | 0.0332 | | 87.7585 | 87.7585 | 1.1600e-003 | | 87.7874 |
| **Total** | **0.0279** | **0.0126** | **0.2038** | **8.8000e-004** | **0.1232** | **5.3000e-004** | **0.1238** | **0.0327** | **4.8000e-004** | **0.0332** | | **87.7585** | **87.7585** | **1.1600e-003** | | **87.7874** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 0.2805 | 1.2154 | 17.2957 | 0.0281 | | 0.0374 | 0.0374 | | 0.0374 | 0.0374 | 0.0000 | 2,656.5168 | 2,656.5168 | 0.1245 | | 2,659.6302 |
| Paving | 0.2787 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **0.5591** | **1.2154** | **17.2957** | **0.0281** | | **0.0374** | **0.0374** | | **0.0374** | **0.0374** | **0.0000** | **2,656.5168** | **2,656.5168** | **0.1245** | | **2,659.6302** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0279 | 0.0126 | 0.2038 | 8.8000e-004 | 0.1168 | 5.3000e-004 | 0.1173 | 0.0311 | 4.8000e-004 | 0.0316 | | 87.7585 | 87.7585 | 1.1600e-003 | | 87.7874 |
| **Total** | **0.0279** | **0.0126** | **0.2038** | **8.8000e-004** | **0.1168** | **5.3000e-004** | **0.1173** | **0.0311** | **4.8000e-004** | **0.0316** | | **87.7585** | **87.7585** | **1.1600e-003** | | **87.7874** |

## 3.7 Building Construction - 2030

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.5661 | 20.0569 | 5.2034 | 0.0752 | 2.0175 | 0.0225 | 2.0400 | 0.5808 | 0.0215 | 0.6023 | | 7,952.9295 | 7,952.9295 | 0.2534 | | 7,959.2649 |
| Worker | 2.8531 | 1.2848 | 20.8581 | 0.0900 | 12.6097 | 0.0539 | 12.6636 | 3.3447 | 0.0496 | 3.3943 | | 8,980.6182 | 8,980.6182 | 0.1184 | | 8,983.5784 |
| **Total** | **3.4191** | **21.3417** | **26.0616** | **0.1652** | **14.6272** | **0.0764** | **14.7036** | **3.9255** | **0.0711** | **3.9965** | | **16,933.5477** | **16,933.5477** | **0.3718** | | **16,942.8433** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.4479 | 2.4257 | 17.5650 | 0.0310 | | 0.0543 | 0.0543 | | 0.0543 | 0.0543 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **0.4479** | **2.4257** | **17.5650** | **0.0310** | | **0.0543** | **0.0543** | | **0.0543** | **0.0543** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.5661 | 20.0569 | 5.2034 | 0.0752 | 1.9312 | 0.0225 | 1.9537 | 0.5596 | 0.0215 | 0.5811 | | 7,952.9295 | 7,952.9295 | 0.2534 | | 7,959.2649 |
| Worker | 2.8531 | 1.2848 | 20.8581 | 0.0900 | 11.9521 | 0.0539 | 12.0060 | 3.1833 | 0.0496 | 3.2329 | | 8,980.6182 | 8,980.6182 | 0.1184 | | 8,983.5784 |
| **Total** | **3.4191** | **21.3417** | **26.0616** | **0.1652** | **13.8834** | **0.0764** | **13.9597** | **3.7429** | **0.0711** | **3.8139** | | **16,933.5477** | **16,933.5477** | **0.3718** | | **16,942.8433** |

## 3.7 Building Construction - 2031

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.5597 | 19.8680 | 5.1630 | 0.0750 | 2.0176 | 0.0222 | 2.0397 | 0.5808 | 0.0212 | 0.6020 | | 7,928.0323 | 7,928.0323 | 0.2501 | | 7,934.2847 |
| Worker | 2.6230 | 1.1818 | 19.6371 | 0.0879 | 12.6097 | 0.0502 | 12.6598 | 3.3447 | 0.0461 | 3.3908 | | 8,776.1679 | 8,776.1679 | 0.1086 | | 8,778.8832 |
| **Total** | **3.1827** | **21.0498** | **24.8001** | **0.1629** | **14.6272** | **0.0723** | **14.6995** | **3.9255** | **0.0673** | **3.9928** | | **16,704.2002** | **16,704.2002** | **0.3587** | | **16,713.1679** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.4479 | 2.4257 | 17.5650 | 0.0310 | | 0.0543 | 0.0543 | | 0.0543 | 0.0543 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **0.4479** | **2.4257** | **17.5650** | **0.0310** | | **0.0543** | **0.0543** | | **0.0543** | **0.0543** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.5597 | 19.8680 | 5.1630 | 0.0750 | 1.9313 | 0.0222 | 1.9534 | 0.5596 | 0.0212 | 0.5808 | | 7,928.0323 | 7,928.0323 | 0.2501 | | 7,934.2847 |
| Worker | 2.6230 | 1.1818 | 19.6371 | 0.0879 | 11.9521 | 0.0502 | 12.0023 | 3.1833 | 0.0461 | 3.2294 | | 8,776.1679 | 8,776.1679 | 0.1086 | | 8,778.8832 |
| **Total** | **3.1827** | **21.0498** | **24.8001** | **0.1629** | **13.8834** | **0.0723** | **13.9557** | **3.7429** | **0.0673** | **3.8102** | | **16,704.2002** | **16,704.2002** | **0.3587** | | **16,713.1679** |

## 3.7 Building Construction - 2032

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| Category | lb/day | | | | | | | | | | lb/day | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.5551 | 19.6984 | 5.1413 | 0.0748 | 2.0176 | 0.0219 | 2.0395 | 0.5808 | 0.0209 | 0.6017 | | 7,910.0868 | 7,910.0868 | 0.2473 | | 7,916.2702 |
| Worker | 2.4287 | 1.0963 | 18.5924 | 0.0861 | 12.6097 | 0.0467 | 12.6564 | 3.3447 | 0.0430 | 3.3877 | | 8,599.8040 | 8,599.8040 | 0.1003 | | 8,602.3121 |
| **Total** | **2.9838** | **20.7947** | **23.7337** | **0.1609** | **14.6272** | **0.0686** | **14.6959** | **3.9255** | **0.0639** | **3.9894** | | **16,509.8908** | **16,509.8908** | **0.3477** | | **16,518.5823** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.4479 | 2.4257 | 17.5650 | 0.0310 | | 0.0543 | 0.0543 | | 0.0543 | 0.0543 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **0.4479** | **2.4257** | **17.5650** | **0.0310** | | **0.0543** | **0.0543** | | **0.0543** | **0.0543** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.5551 | 19.6984 | 5.1413 | 0.0748 | 1.9313 | 0.0219 | 1.9532 | 0.5596 | 0.0209 | 0.5806 | | 7,910.0868 | 7,910.0868 | 0.2473 | | 7,916.2702 |
| Worker | 2.4287 | 1.0963 | 18.5924 | 0.0861 | 11.9521 | 0.0467 | 11.9989 | 3.1833 | 0.0430 | 3.2263 | | 8,599.8040 | 8,599.8040 | 0.1003 | | 8,602.3121 |
| **Total** | **2.9838** | **20.7947** | **23.7337** | **0.1609** | **13.8834** | **0.0686** | **13.9521** | **3.7429** | **0.0639** | **3.8068** | | **16,509.8908** | **16,509.8908** | **0.3477** | | **16,518.5823** |

## 3.8 Architectural Coating - 2031

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 18.9524 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.3922 | 2.5688 | 5.3932 | 8.9100e-003 | | 0.0609 | 0.0609 | | 0.0609 | 0.0609 | | 844.3442 | 844.3442 | 0.0342 | | 845.1985 |
| **Total** | **19.3446** | **2.5688** | **5.3932** | **8.9100e-003** | | **0.0609** | **0.0609** | | **0.0609** | **0.0609** | | **844.3442** | **844.3442** | **0.0342** | | **845.1985** |

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| Category | lb/day | | | | | | | | | | | lb/day | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.5246 | 0.2364 | 3.9274 | 0.0176 | 2.5219 | 0.0100 | 2.5320 | 0.6689 | 9.2300e-003 | 0.6782 | | 1,755.2336 | 1,755.2336 | 0.0217 | | 1,755.7766 |
| **Total** | **0.5246** | **0.2364** | **3.9274** | **0.0176** | **2.5219** | **0.0100** | **2.5320** | **0.6689** | **9.2300e-003** | **0.6782** | | **1,755.2336** | **1,755.2336** | **0.0217** | | **1,755.7766** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 18.9524 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.0891 | 0.3863 | 5.4972 | 8.9100e-003 | | 0.0119 | 0.0119 | | 0.0119 | 0.0119 | 0.0000 | 844.3441 | 844.3441 | 0.0342 | | 845.1984 |
| **Total** | **19.0415** | **0.3863** | **5.4972** | **8.9100e-003** | | **0.0119** | **0.0119** | | **0.0119** | **0.0119** | **0.0000** | **844.3441** | **844.3441** | **0.0342** | | **845.1984** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.5246 | 0.2364 | 3.9274 | 0.0176 | 2.3904 | 0.0100 | 2.4005 | 0.6367 | 9.2300e-003 | 0.6459 | | 1,755.2336 | 1,755.2336 | 0.0217 | | 1,755.7766 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | **0.5246** | **0.2364** | **3.9274** | **0.0176** | **2.3904** | **0.0100** | **2.4005** | **0.6367** | **9.2300e-003** | **0.6459** | | **1,755.2336** | **1,755.2336** | **0.0217** | | **1,755.7766** |

## 3.8 Architectural Coating - 2032

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 18.9524 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.3922 | 2.5688 | 5.3932 | 8.9100e-003 | | 0.0609 | 0.0609 | | 0.0609 | 0.0609 | | 844.3442 | 844.3442 | 0.0342 | | 845.1985 |
| **Total** | **19.3446** | **2.5688** | **5.3932** | **8.9100e-003** | | **0.0609** | **0.0609** | | **0.0609** | **0.0609** | | **844.3442** | **844.3442** | **0.0342** | | **845.1985** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.4857 | 0.2193 | 3.7185 | 0.0172 | 2.5219 | 9.3500e-003 | 2.5313 | 0.6689 | 8.6000e-003 | 0.6775 | | 1,719.9608 | 1,719.9608 | 0.0201 | | 1,720.4624 |
| **Total** | **0.4857** | **0.2193** | **3.7185** | **0.0172** | **2.5219** | **9.3500e-003** | **2.5313** | **0.6689** | **8.6000e-003** | **0.6775** | | **1,719.9608** | **1,719.9608** | **0.0201** | | **1,720.4624** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 18.9524 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.0891 | 0.3863 | 5.4972 | 8.9100e-003 | | 0.0119 | 0.0119 | | 0.0119 | 0.0119 | 0.0000 | 844.3441 | 844.3441 | 0.0342 | | 845.1984 |
| **Total** | **19.0415** | **0.3863** | **5.4972** | **8.9100e-003** | | **0.0119** | **0.0119** | | **0.0119** | **0.0119** | **0.0000** | **844.3441** | **844.3441** | **0.0342** | | **845.1984** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.4857 | 0.2193 | 3.7185 | 0.0172 | 2.3904 | 9.3500e-003 | 2.3998 | 0.6367 | 8.6000e-003 | 0.6453 | | 1,719.9608 | 1,719.9608 | 0.0201 | | 1,720.4624 |
| **Total** | **0.4857** | **0.2193** | **3.7185** | **0.0172** | **2.3904** | **9.3500e-003** | **2.3998** | **0.6367** | **8.6000e-003** | **0.6453** | | **1,719.9608** | **1,719.9608** | **0.0201** | | **1,720.4624** |

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

Increase Diversity

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

Implement NEV Network

Expand Transit Network

Implement Trip Reduction Program

Transit Subsidy

Encourage Telecommuting and Alternative Work Schedules

Employee Vanpool/Shuttle

Provide Riade Sharing Program

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 5.9992 | 24.4569 | 58.4348 | 0.2765 | 31.2064 | 0.1470 | 31.3534 | 8.3437 | 0.1366 | 8.4804 | | 28,062.6419 | 28,062.6419 | 0.7774 | | 28,082.0777 |
| Unmitigated | 7.0485 | 29.2201 | 85.2176 | 0.4193 | 48.8144 | 0.2164 | 49.0308 | 13.0516 | 0.2012 | 13.2528 | | 42,516.4096 | 42,516.4096 | 1.0922 | | 42,543.7150 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| City Park | 0.00 | 0.00 | 0.00 | | |
| Condo/Townhouse High Rise | 600.00 | 538.75 | 428.75 | 2,040,171 | 1,319,121 |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Recreational Swimming Pool | 0.00 | 0.00 | 0.00 | | |
| Retirement Community | 2,280.00 | 964.25 | 926.25 | 6,834,252 | 4,418,848 |
| Strip Mall | 3,449.55 | 3,846.66 | 1869.35 | 10,775,827 | 6,824,427 |
| Total | 6,329.55 | 5,349.66 | 3,224.35 | 19,650,251 | 12,562,396 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C- | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| City Park | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 66 | 28 | 6 |
| Condo/Townhouse High Rise | 16.80 | 7.50 | 8.90 | 31.00 | 15.00 | 54.00 | 86 | 11 | 3 |
| Parking Lot | 9.50 | 7.30 | 7.30 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Recreational Swimming Pool | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 52 | 39 | 9 |
| Retirement Community | 16.80 | 7.50 | 8.90 | 31.00 | 15.00 | 54.00 | 86 | 11 | 3 |
| Strip Mall | 20.30 | 15.60 | 15.60 | 16.60 | 64.40 | 19.00 | 45 | 40 | 15 |

### 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| City Park | 0.608861 | 0.034484 | 0.184220 | 0.107205 | 0.011406 | 0.004825 | 0.010903 | 0.026628 | 0.001670 | 0.001490 | 0.005061 | 0.002613 | 0.000633 |
| Condo/Townhouse High Rise | 0.608861 | 0.034484 | 0.184220 | 0.107205 | 0.011406 | 0.004825 | 0.010903 | 0.026628 | 0.001670 | 0.001490 | 0.005061 | 0.002613 | 0.000633 |
| Parking Lot | 0.608861 | 0.034484 | 0.184220 | 0.107205 | 0.011406 | 0.004825 | 0.010903 | 0.026628 | 0.001670 | 0.001490 | 0.005061 | 0.002613 | 0.000633 |
| Recreational Swimming Pool | 0.608861 | 0.034484 | 0.184220 | 0.107205 | 0.011406 | 0.004825 | 0.010903 | 0.026628 | 0.001670 | 0.001490 | 0.005061 | 0.002613 | 0.000633 |
| Retirement Community | 0.608861 | 0.034484 | 0.184220 | 0.107205 | 0.011406 | 0.004825 | 0.010903 | 0.026628 | 0.001670 | 0.001490 | 0.005061 | 0.002613 | 0.000633 |
| Strip Mall | 0.608861 | 0.034484 | 0.184220 | 0.107205 | 0.011406 | 0.004825 | 0.010903 | 0.026628 | 0.001670 | 0.001490 | 0.005061 | 0.002613 | 0.000633 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Percent of Electricity Use Generated with Renewable Energy

Install Energy Efficient Appliances

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.1149 | 0.9837 | 0.4300 | 6.2700e-003 | | 0.0794 | 0.0794 | | 0.0794 | 0.0794 | | 1,253.7221 | 1,253.7221 | 0.0240 | 0.0230 | 1,261.1723 |
| NaturalGas Unmitigated | 0.1815 | 1.5541 | 0.6855 | 9.9000e-003 | | 0.1254 | 0.1254 | | 0.1254 | 0.1254 | | 1,979.4488 | 1,979.4488 | 0.0379 | 0.0363 | 1,991.2117 |

## 5.2 Energy by Land Use - NaturalGas

### Unmitigated

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Condo/Townhouse High Rise | 2958.72 | 0.0319 | 0.2727 | 0.1160 | 1.7400e-003 | | 0.0221 | 0.0221 | | 0.0221 | 0.0221 | | 348.0842 | 348.0842 | 6.6700e-003 | 6.3800e-003 | 350.1527 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Retirement Community | 13272.5 | 0.1431 | 1.2232 | 0.5205 | 7.8100e-003 | | 0.0989 | 0.0989 | | 0.0989 | 0.0989 | | 1,561.4678 | 1,561.4678 | 0.0299 | 0.0286 | 1,570.7468 |
| Strip Mall | 594.123 | 6.4100e-003 | 0.0583 | 0.0489 | 3.5000e-004 | | 4.4300e-003 | 4.4300e-003 | | 4.4300e-003 | 4.4300e-003 | | 69.8969 | 69.8969 | 1.3400e-003 | 1.2800e-003 | 70.3122 |
| **Total** | | **0.1815** | **1.5541** | **0.6855** | **9.9000e-003** | | **0.1254** | **0.1254** | | **0.1254** | **0.1254** | | **1,979.4488** | **1,979.4488** | **0.0379** | **0.0363** | **1,991.2117** |

### Mitigated

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Condo/Townhouse High Rise | 1.96325 | 0.0212 | 0.1809 | 0.0770 | 1.1500e-003 | | 0.0146 | 0.0146 | | 0.0146 | 0.0146 | | 230.9707 | 230.9707 | 4.4300e-003 | 4.2300e-003 | 232.3432 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Retirement Community | 8.41415 | 0.0907 | 0.7754 | 0.3300 | 4.9500e-003 | | 0.0627 | 0.0627 | | 0.0627 | 0.0627 | | 989.8999 | 989.8999 | 0.0190 | 0.0182 | 995.7824 |
| Strip Mall | 0.279238 | 3.0100e-003 | 0.0274 | 0.0230 | 1.6000e-004 | | 2.0800e-003 | 2.0800e-003 | | 2.0800e-003 | 2.0800e-003 | | 32.8515 | 32.8515 | 6.3000e-004 | 6.0000e-004 | 33.0467 |
| **Total** | | **0.1149** | **0.9837** | **0.4300** | **6.2600e-003** | | **0.0794** | **0.0794** | | **0.0794** | **0.0794** | | **1,253.7221** | **1,253.7221** | **0.0240** | **0.0230** | **1,261.1723** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

Use Low VOC Cleaning Supplies

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 14.9298 | 0.4530 | 37.5369 | 1.7000e-003 | | 0.2049 | 0.2049 | | 0.2049 | 0.2049 | 0.0000 | 62.4183 | 62.4183 | 0.0446 | 0.0000 | 63.5324 |
| Unmitigated | 19.5369 | 4.2853 | 50.9928 | 0.0263 | | 0.5751 | 0.5751 | | 0.5751 | 0.5751 | 0.0000 | 4,832.7505 | 4,832.7505 | 0.1761 | 0.0870 | 4,863.0677 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 2.5962 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 15.0254 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.4348 | 3.7158 | 1.5812 | 0.0237 | | 0.3004 | 0.3004 | | 0.3004 | 0.3004 | 0.0000 | 4,743.5294 | 4,743.5294 | 0.0909 | 0.0870 | 4,771.7178 |
| Landscaping | 1.4805 | 0.5695 | 49.4116 | 2.6200e-003 | | 0.2747 | 0.2747 | | 0.2747 | 0.2747 | | 89.2211 | 89.2211 | 0.0852 | | 91.3498 |
| **Total** | **19.5369** | **4.2853** | **50.9928** | **0.0263** | | **0.5751** | **0.5751** | | **0.5751** | **0.5751** | **0.0000** | **4,832.7505** | **4,832.7505** | **0.1761** | **0.0870** | **4,863.0677** |

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.2305 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 13.9142 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 0.7851 | 0.4530 | 37.5369 | 1.7000e-003 | | 0.2049 | 0.2049 | | 0.2049 | 0.2049 | | 62.4183 | 62.4183 | 0.0446 | | 63.5324 |
| **Total** | **14.9298** | **0.4530** | **37.5369** | **1.7000e-003** | | **0.2049** | **0.2049** | | **0.2049** | **0.2049** | **0.0000** | **62.4183** | **62.4183** | **0.0446** | **0.0000** | **63.5324** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

Use Reclaimed Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Turf Reduction

Use Water Efficient Irrigation System

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

## 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

**Boilers**

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

**User Defined Equipment**

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

# Vineyards at Deer Creek- Phase 4 and 5

**Contra Costa County, Winter**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Parking Lot | 260.00 | Space | 2.34 | 104,000.00 | 0 |
| City Park | 56.25 | Acre | 56.25 | 2,450,250.00 | 0 |
| Recreational Swimming Pool | 2.00 | 1000sqft | 0.05 | 2,000.00 | 0 |
| Condo/Townhouse High Rise | 125.00 | Dwelling Unit | 1.95 | 125,000.00 | 358 |
| Retirement Community | 475.00 | Dwelling Unit | 95.00 | 475,000.00 | 1359 |
| Strip Mall | 91.50 | 1000sqft | 2.10 | 91,500.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 58 |
| **Climate Zone** | 4 | | | **Operational Year** | 2033 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 146 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - Per PG&E 2018 CRSR

Land Use - Parking: assumed 2 spaces for 125 DUs, plus 10 extra spaces for recreation uses
City Park is open space/ agricultural uses

Construction Phase - Per Construction Questionnaire

Off-road Equipment - Estimated equipment use

Off-road Equipment -

Off-road Equipment - No demolition

Off-road Equipment - Estimated equipment use

Off-road Equipment -

Off-road Equipment - Estimated equipment use

Off-road Equipment -

Off-road Equipment -

Trips and VMT - vendor trips would be lower since city park was used to model the proposed natural open space, informal parkland, low impact trails,

Demolition - No demolition

Grading - Balanced between all phases

Vehicle Trips - Per Fehr and Peers TIA 2019

Woodstoves - Per BAAQMD Regulation 6, Rule 3

Energy Use -

Land Use Change -

Construction Off-road Equipment Mitigation - Per BAAQMD basic control measure

Mobile Land Use Mitigation - Green building design elements include narrower roadways

Mobile Commute Mitigation -

Area Mitigation - No hearth, low VOC cleaning supplies, low VOC paint, and electric landscape equipment

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblAreaMitigation | UseLowVOCPaintNonresidentialExterior Value | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintNonresidentialInterior Value | 100 | 10 |
| tblAreaMitigation | UseLowVOCPaintParkingCheck | False | True |
| tblAreaMitigation | UseLowVOCPaintParkingValue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintResidentialExteriorVa lue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintResidentialInteriorVal ue | 100 | 10 |
| tblConstDustMitigation | CleanPavedRoadPercentReduction | 0 | 6 |
| tblConstDustMitigation | WaterUnpavedRoadMoistureContent | 0 | 12 |
| tblConstDustMitigation | WaterUnpavedRoadVehicleSpeed | 0 | 15 |

| | | | |
|---|---|---|---|
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 13.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 6.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 8.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 4.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 17.00 |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
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| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstructionPhase | NumDays | 220.00 | 500.00 |
| tblConstructionPhase | NumDays | 3,100.00 | 576.00 |
| tblConstructionPhase | NumDays | 200.00 | 0.00 |

| | | | |
|---|---|---|---|
| tblConstructionPhase | NumDays | 310.00 | 110.00 |
| tblConstructionPhase | NumDays | 220.00 | 22.00 |
| tblConstructionPhase | NumDays | 120.00 | 10.00 |
| tblFireplaces | NumberGas | 18.75 | 40.00 |
| tblFireplaces | NumberGas | 71.25 | 152.00 |
| tblFireplaces | NumberWood | 21.25 | 0.00 |
| tblFireplaces | NumberWood | 80.75 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 4.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 3.00 |
| tblProjectCharacteristics | CO2IntensityFactor | 641.35 | 146 |
| tblTripsAndVMT | VendorTripNumber | 498.00 | 298.00 |
| tblVehicleTrips | CC_TL | 7.30 | 15.60 |
| tblVehicleTrips | CNW_TL | 7.30 | 15.60 |
| tblVehicleTrips | CW_TL | 9.50 | 20.30 |
| tblVehicleTrips | HO_TL | 5.70 | 8.90 |
| tblVehicleTrips | HO_TL | 5.70 | 8.90 |
| tblVehicleTrips | HS_TL | 4.80 | 7.50 |
| tblVehicleTrips | HS_TL | 4.80 | 7.50 |
| tblVehicleTrips | HW_TL | 10.80 | 16.80 |
| tblVehicleTrips | HW_TL | 10.80 | 16.80 |
| tblVehicleTrips | ST_TR | 22.75 | 0.00 |
| tblVehicleTrips | ST_TR | 9.10 | 0.00 |
| tblVehicleTrips | SU_TR | 16.74 | 0.00 |
| tblVehicleTrips | SU_TR | 13.60 | 0.00 |
| tblVehicleTrips | WD_TR | 1.89 | 0.00 |
| tblVehicleTrips | WD_TR | 4.18 | 4.80 |
| tblVehicleTrips | WD_TR | 33.82 | 0.00 |
| tblVehicleTrips | WD_TR | 2.40 | 4.80 |
| tblVehicleTrips | WD_TR | 44.32 | 37.70 |
| tblWoodstoves | NumberCatalytic | 2.50 | 0.00 |
| tblWoodstoves | NumberCatalytic | 9.50 | 0.00 |

| | | | |
|---|---|---|---|
| tblWoodstoves | NumberNoncatalytic | 2.50 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 9.50 | 0.00 |

## 2.0 Emissions Summary

### 2.1 Overall Construction (Maximum Daily Emission)

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2030 | 5.4629 | 29.6385 | 59.7006 | 0.1859 | 18.2141 | 0.7374 | 18.6514 | 9.9699 | 0.7373 | 10.4071 | 0.0000 | 18,792.1591 | 18,792.1591 | 0.4952 | 0.0000 | 18,804.5384 |
| 2031 | 24.5207 | 32.1782 | 48.2675 | 0.2086 | 17.1491 | 0.2918 | 17.4410 | 4.5944 | 0.2860 | 4.8804 | 0.0000 | 21,016.5270 | 21,016.5270 | 0.5359 | 0.0000 | 21,029.9250 |
| 2032 | 24.2805 | 31.8794 | 47.0659 | 0.2065 | 17.1492 | 0.2874 | 17.4366 | 4.5944 | 0.2819 | 4.8764 | 0.0000 | 20,806.4370 | 20,806.4370 | 0.5236 | 0.0000 | 20,819.5265 |
| **Maximum** | **24.5207** | **32.1782** | **59.7006** | **0.2086** | **18.2141** | **0.7374** | **18.6514** | **9.9699** | **0.7373** | **10.4071** | **0.0000** | **21,016.5270** | **21,016.5270** | **0.5359** | **0.0000** | **21,029.9250** |

**Mitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2030 | 4.0099 | 24.1296 | 73.4892 | 0.1859 | 13.8834 | 0.1929 | 14.0145 | 4.2827 | 0.1927 | 4.3454 | 0.0000 | 18,792.1591 | 18,792.1591 | 0.4952 | 0.0000 | 18,804.5384 |
| 2031 | 23.3564 | 24.4867 | 49.7795 | 0.2086 | 16.2738 | 0.1490 | 16.4228 | 4.3796 | 0.1431 | 4.5227 | 0.0000 | 21,016.5270 | 21,016.5270 | 0.5359 | 0.0000 | 21,029.9250 |
| 2032 | 23.1162 | 24.1878 | 48.5779 | 0.2065 | 16.2738 | 0.1446 | 16.4184 | 4.3796 | 0.1391 | 4.5186 | 0.0000 | 20,806.4370 | 20,806.4370 | 0.5236 | 0.0000 | 20,819.5265 |
| **Maximum** | **23.3564** | **24.4867** | **73.4892** | **0.2086** | **16.2738** | **0.1929** | **16.4228** | **4.3796** | **0.1927** | **4.5227** | **0.0000** | **21,016.5270** | **21,016.5270** | **0.5359** | **0.0000** | **21,029.9250** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **6.97** | **22.30** | **-10.84** | **0.00** | **11.58** | **63.06** | **12.47** | **31.93** | **63.62** | **33.61** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 19.5369 | 4.2853 | 50.9928 | 0.0263 | | 0.5751 | 0.5751 | | 0.5751 | 0.5751 | 0.0000 | 4,832.7505 | 4,832.7505 | 0.1761 | 0.0870 | 4,863.0677 |
| Energy | 0.1815 | 1.5541 | 0.6855 | 9.9000e-003 | | 0.1254 | 0.1254 | | 0.1254 | 0.1254 | | 1,979.4488 | 1,979.4488 | 0.0379 | 0.0363 | 1,991.2117 |
| Mobile | 5.8241 | 30.4604 | 80.6301 | 0.3883 | 48.8144 | 0.2168 | 49.0312 | 13.0516 | 0.2016 | 13.2532 | | 39,404.8470 | 39,404.8470 | 1.1032 | | 39,432.4259 |
| **Total** | **25.5425** | **36.2998** | **132.3083** | **0.4246** | **48.8144** | **0.9173** | **49.7317** | **13.0516** | **0.9021** | **13.9537** | **0.0000** | **46,217.0463** | **46,217.0463** | **1.3172** | **0.1233** | **46,286.7053** |

### Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 14.9298 | 0.4530 | 37.5369 | 1.7000e-003 | | 0.2049 | 0.2049 | | 0.2049 | 0.2049 | 0.0000 | 62.4183 | 62.4183 | 0.0446 | 0.0000 | 63.5324 |
| Energy | 0.1149 | 0.9837 | 0.4300 | 6.2700e-003 | | 0.0794 | 0.0794 | | 0.0794 | 0.0794 | | 1,253.7221 | 1,253.7221 | 0.0240 | 0.0230 | 1,261.1723 |
| Mobile | 4.7794 | 25.1696 | 57.2912 | 0.2560 | 31.2064 | 0.1475 | 31.3539 | 8.3437 | 0.1371 | 8.4808 | | 25,989.1196 | 25,989.1196 | 0.7977 | | 26,009.0631 |
| **Total** | **19.8241** | **26.6062** | **95.2581** | **0.2639** | **31.2064** | **0.4317** | **31.6381** | **8.3437** | **0.4213** | **8.7650** | **0.0000** | **27,305.2600** | **27,305.2600** | **0.8663** | **0.0230** | **27,333.7678** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **22.39** | **26.70** | **28.00** | **37.83** | **36.07** | **52.93** | **36.38** | **36.07** | **53.29** | **37.18** | **0.00** | **40.92** | **40.92** | **34.23** | **81.35** | **40.95** |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Demolition | Demolition | 1/1/2030 | 12/31/2029 | 5 | 0 | |
| 2 | Site Preparation | Site Preparation | 1/1/2030 | 1/14/2030 | 5 | 10 | |
| 3 | Grading | Grading | 1/15/2030 | 6/17/2030 | 5 | 110 | |
| 4 | Infrastructure Improvements | Trenching | 6/18/2030 | 9/17/2030 | 5 | 66 | |
| 5 | Paving | Paving | 9/18/2030 | 10/17/2030 | 5 | 22 | |
| 6 | Building Construction | Building Construction | 10/18/2030 | 12/31/2032 | 5 | 576 | |
| 7 | Architectural Coating | Architectural Coating | 2/1/2031 | 12/31/2032 | 5 | 500 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 495**

**Acres of Paving: 2.34**

**Residential Indoor: 1,215,000; Residential Outdoor: 405,000; Non-Residential Indoor: 141,750; Non-Residential Outdoor: 47,250;**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Demolition | Excavators | 3 | 8.00 | 158 | 0.38 |
| Demolition | Rubber Tired Dozers | 2 | 8.00 | 247 | 0.40 |
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |

| | | | | | |
|---|---|---|---|---|---|
| Grading | Scrapers | 4 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 3 | 6.00 | 78 | 0.48 |
| Infrastructure Improvements | Excavators | 8 | 8.00 | 158 | 0.38 |
| Infrastructure Improvements | Rubber Tired Loaders | 8 | 8.00 | 203 | 0.36 |
| Infrastructure Improvements | Tractors/Loaders/Backhoes | 8 | 8.00 | 97 | 0.37 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Demolition | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 10 | 25.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 1,535.00 | 298.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 3 | 307.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Infrastructure Improvements | 24 | 60.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

### 3.3 Site Preparation - 2030

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 18.0663 | 0.0000 | 18.0663 | 9.9307 | 0.0000 | 9.9307 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.4399 | 13.6680 | 16.2918 | 0.0466 | | 0.4367 | 0.4367 | | 0.4367 | 0.4367 | | 4,409.7537 | 4,409.7537 | 0.2176 | | 4,415.1936 |
| **Total** | **2.4399** | **13.6680** | **16.2918** | **0.0466** | **18.0663** | **0.4367** | **18.5029** | **9.9307** | **0.4367** | **10.3673** | | **4,409.7537** | **4,409.7537** | **0.2176** | | **4,415.1936** |

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0347 | 0.0185 | 0.2171 | 9.6000e-004 | 0.1479 | 6.3000e-004 | 0.1485 | 0.0392 | 5.8000e-004 | 0.0398 | | 95.4040 | 95.4040 | 1.2500e-003 | | 95.4351 |
| **Total** | **0.0347** | **0.0185** | **0.2171** | **9.6000e-004** | **0.1479** | **6.3000e-004** | **0.1485** | **0.0392** | **5.8000e-004** | **0.0398** | | **95.4040** | **95.4040** | **1.2500e-003** | | **95.4351** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 7.7233 | 0.0000 | 7.7233 | 4.2454 | 0.0000 | 4.2454 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.4656 | 2.0175 | 20.8690 | 0.0466 | | 0.0621 | 0.0621 | | 0.0621 | 0.0621 | 0.0000 | 4,409.7537 | 4,409.7537 | 0.2176 | | 4,415.1936 |
| **Total** | **0.4656** | **2.0175** | **20.8690** | **0.0466** | **7.7233** | **0.0621** | **7.7854** | **4.2454** | **0.0621** | **4.3075** | **0.0000** | **4,409.7537** | **4,409.7537** | **0.2176** | | **4,415.1936** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0347 | 0.0185 | 0.2171 | 9.6000e-004 | 0.1402 | 6.3000e-004 | 0.1408 | 0.0373 | 5.8000e-004 | 0.0379 | | 95.4040 | 95.4040 | 1.2500e-003 | | 95.4351 |
| **Total** | **0.0347** | **0.0185** | **0.2171** | **9.6000e-004** | **0.1402** | **6.3000e-004** | **0.1408** | **0.0373** | **5.8000e-004** | **0.0379** | | **95.4040** | **95.4040** | **1.2500e-003** | | **95.4351** |

## 3.4 Grading - 2030

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 10.7943 | 0.0000 | 10.7943 | 3.8255 | 0.0000 | 3.8255 | | | 0.0000 | | | 0.0000 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 4.8901 | 20.4142 | 30.3811 | 0.1010 | | 0.7365 | 0.7365 | | 0.7365 | 0.7365 | | 10,744.4396 | 10,744.4396 | 0.4344 | | 10,755.3003 |
| **Total** | **4.8901** | **20.4142** | **30.3811** | **0.1010** | **10.7943** | **0.7365** | **11.5308** | **3.8255** | **0.7365** | **4.5620** | | **10,744.4396** | **10,744.4396** | **0.4344** | | **10,755.3003** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0482 | 0.0257 | 0.3015 | 1.3300e-003 | 0.2054 | 8.8000e-004 | 0.2063 | 0.0545 | 8.1000e-004 | 0.0553 | | 132.5055 | 132.5055 | 1.7300e-003 | | 132.5487 |
| **Total** | **0.0482** | **0.0257** | **0.3015** | **1.3300e-003** | **0.2054** | **8.8000e-004** | **0.2063** | **0.0545** | **8.1000e-004** | **0.0553** | | **132.5055** | **132.5055** | **1.7300e-003** | | **132.5487** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 4.6146 | 0.0000 | 4.6146 | 1.6354 | 0.0000 | 1.6354 | | | 0.0000 | | | 0.0000 |
| Off-Road | 1.1344 | 4.9156 | 46.6696 | 0.1010 | | 0.1513 | 0.1513 | | 0.1513 | 0.1513 | 0.0000 | 10,744.4396 | 10,744.4396 | 0.4344 | | 10,755.3003 |
| **Total** | **1.1344** | **4.9156** | **46.6696** | **0.1010** | **4.6146** | **0.1513** | **4.7658** | **1.6354** | **0.1513** | **1.7867** | **0.0000** | **10,744.4396** | **10,744.4396** | **0.4344** | | **10,755.3003** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0482 | 0.0257 | 0.3015 | 1.3300e-003 | 0.1947 | 8.8000e-004 | 0.1955 | 0.0518 | 8.1000e-004 | 0.0527 | | 132.5055 | 132.5055 | 1.7300e-003 | | 132.5487 |
| **Total** | **0.0482** | **0.0257** | **0.3015** | **1.3300e-003** | **0.1947** | **8.8000e-004** | **0.1955** | **0.0518** | **8.1000e-004** | **0.0527** | | **132.5055** | **132.5055** | **1.7300e-003** | | **132.5487** |

## 3.5 Infrastructure Improvements - 2030

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 5.3472 | 19.4252 | 58.9769 | 0.1431 | | 0.5736 | 0.5736 | | 0.5736 | 0.5736 | | 13,552.0042 | 13,552.0042 | 0.4681 | | 13,563.7065 |
| **Total** | **5.3472** | **19.4252** | **58.9769** | **0.1431** | | **0.5736** | **0.5736** | | **0.5736** | **0.5736** | | **13,552.0042** | **13,552.0042** | **0.4681** | | **13,563.7065** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.1158 | 0.0617 | 0.7236 | 3.1900e-003 | 0.4929 | 2.1100e-003 | 0.4950 | 0.1307 | 1.9400e-003 | 0.1327 | | 318.0132 | 318.0132 | 4.1500e-003 | | 318.1169 |
| **Total** | **0.1158** | **0.0617** | **0.7236** | **3.1900e-003** | **0.4929** | **2.1100e-003** | **0.4950** | **0.1307** | **1.9400e-003** | **0.1327** | | **318.0132** | **318.0132** | **4.1500e-003** | | **318.1169** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.4308 | 6.2001 | 72.7655 | 0.1431 | | 0.1908 | 0.1908 | | 0.1908 | 0.1908 | 0.0000 | 13,552.0042 | 13,552.0042 | 0.4681 | | 13,563.7065 |
| **Total** | **1.4308** | **6.2001** | **72.7655** | **0.1431** | | **0.1908** | **0.1908** | | **0.1908** | **0.1908** | **0.0000** | **13,552.0042** | **13,552.0042** | **0.4681** | | **13,563.7065** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.1158 | 0.0617 | 0.7236 | 3.1900e-003 | 0.4672 | 2.1100e-003 | 0.4693 | 0.1244 | 1.9400e-003 | 0.1264 | | 318.0132 | 318.0132 | 4.1500e-003 | | 318.1169 |
| **Total** | **0.1158** | **0.0617** | **0.7236** | **3.1900e-003** | **0.4672** | **2.1100e-003** | **0.4693** | **0.1244** | **1.9400e-003** | **0.1264** | | **318.0132** | **318.0132** | **4.1500e-003** | | **318.1169** |

## 3.6 Paving - 2030

## Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3845 | 7.1202 | 15.8495 | 0.0281 | | 0.3306 | 0.3306 | | 0.3306 | 0.3306 | | 2,656.5168 | 2,656.5168 | 0.1245 | | 2,659.6302 |
| Paving | 0.2787 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.6632** | **7.1202** | **15.8495** | **0.0281** | | **0.3306** | **0.3306** | | **0.3306** | **0.3306** | | **2,656.5168** | **2,656.5168** | **0.1245** | | **2,659.6302** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0289 | 0.0154 | 0.1809 | 8.0000e-004 | 0.1232 | 5.3000e-004 | 0.1238 | 0.0327 | 4.8000e-004 | 0.0332 | | 79.5033 | 79.5033 | 1.0400e-003 | | 79.5292 |
| **Total** | **0.0289** | **0.0154** | **0.1809** | **8.0000e-004** | **0.1232** | **5.3000e-004** | **0.1238** | **0.0327** | **4.8000e-004** | **0.0332** | | **79.5033** | **79.5033** | **1.0400e-003** | | **79.5292** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 0.2805 | 1.2154 | 17.2957 | 0.0281 | | 0.0374 | 0.0374 | | 0.0374 | 0.0374 | 0.0000 | 2,656.5168 | 2,656.5168 | 0.1245 | | 2,659.6302 |
| Paving | 0.2787 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **0.5591** | **1.2154** | **17.2957** | **0.0281** | | **0.0374** | **0.0374** | | **0.0374** | **0.0374** | **0.0000** | **2,656.5168** | **2,656.5168** | **0.1245** | | **2,659.6302** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0289 | 0.0154 | 0.1809 | 8.0000e-004 | 0.1168 | 5.3000e-004 | 0.1173 | 0.0311 | 4.8000e-004 | 0.0316 | | 79.5033 | 79.5033 | 1.0400e-003 | | 79.5292 |
| **Total** | **0.0289** | **0.0154** | **0.1809** | **8.0000e-004** | **0.1168** | **5.3000e-004** | **0.1173** | **0.0311** | **4.8000e-004** | **0.0316** | | **79.5033** | **79.5033** | **1.0400e-003** | | **79.5292** |

## 3.7 Building Construction - 2030

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.6003 | 20.1264 | 5.9255 | 0.0734 | 2.0175 | 0.0229 | 2.0404 | 0.5808 | 0.0219 | 0.6027 | | 7,758.7754 | 7,758.7754 | 0.2727 | | 7,765.5937 |
| Worker | 2.9616 | 1.5775 | 18.5131 | 0.0815 | 12.6097 | 0.0539 | 12.6636 | 3.3447 | 0.0496 | 3.3943 | | 8,135.8370 | 8,135.8370 | 0.1062 | | 8,138.4918 |
| **Total** | **3.5620** | **21.7039** | **24.4386** | **0.1549** | **14.6272** | **0.0768** | **14.7040** | **3.9255** | **0.0715** | **3.9970** | | **15,894.6124** | **15,894.6124** | **0.3789** | | **15,904.0855** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.4479 | 2.4257 | 17.5650 | 0.0310 | | 0.0543 | 0.0543 | | 0.0543 | 0.0543 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **0.4479** | **2.4257** | **17.5650** | **0.0310** | | **0.0543** | **0.0543** | | **0.0543** | **0.0543** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.6003 | 20.1264 | 5.9255 | 0.0734 | 1.9312 | 0.0229 | 1.9542 | 0.5596 | 0.0219 | 0.5815 | | 7,758.7754 | 7,758.7754 | 0.2727 | | 7,765.5937 |
| Worker | 2.9616 | 1.5775 | 18.5131 | 0.0815 | 11.9521 | 0.0539 | 12.0060 | 3.1833 | 0.0496 | 3.2329 | | 8,135.8370 | 8,135.8370 | 0.1062 | | 8,138.4918 |
| **Total** | **3.5620** | **21.7039** | **24.4386** | **0.1549** | **13.8834** | **0.0768** | **13.9602** | **3.7429** | **0.0715** | **3.8144** | | **15,894.6124** | **15,894.6124** | **0.3789** | | **15,904.0855** |

## 3.7 Building Construction - 2031

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.5935 | 19.9352 | 5.8784 | 0.0732 | 2.0176 | 0.0226 | 2.0401 | 0.5808 | 0.0216 | 0.6024 | | 7,735.0799 | 7,735.0799 | 0.2689 | | 7,741.8035 |
| Worker | 2.7279 | 1.4497 | 17.3657 | 0.0796 | 12.6097 | 0.0502 | 12.6598 | 3.3447 | 0.0461 | 3.3908 | | 7,949.6301 | 7,949.6301 | 0.0971 | | 7,952.0585 |
| **Total** | **3.3214** | **21.3848** | **23.2441** | **0.1528** | **14.6272** | **0.0727** | **14.7000** | **3.9255** | **0.0677** | **3.9932** | | **15,684.7101** | **15,684.7101** | **0.3661** | | **15,693.8620** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.4479 | 2.4257 | 17.5650 | 0.0310 | | 0.0543 | 0.0543 | | 0.0543 | 0.0543 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **0.4479** | **2.4257** | **17.5650** | **0.0310** | | **0.0543** | **0.0543** | | **0.0543** | **0.0543** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.5935 | 19.9352 | 5.8784 | 0.0732 | 1.9313 | 0.0226 | 1.9538 | 0.5596 | 0.0216 | 0.5812 | | 7,735.0799 | 7,735.0799 | 0.2689 | | 7,741.8035 |
| Worker | 2.7279 | 1.4497 | 17.3657 | 0.0796 | 11.9521 | 0.0502 | 12.0023 | 3.1833 | 0.0461 | 3.2294 | | 7,949.6301 | 7,949.6301 | 0.0971 | | 7,952.0585 |
| **Total** | **3.3214** | **21.3848** | **23.2441** | **0.1528** | **13.8834** | **0.0727** | **13.9561** | **3.7429** | **0.0677** | **3.8106** | | **15,684.7101** | **15,684.7101** | **0.3661** | | **15,693.8620** |

## 3.7 Building Construction - 2032

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| Category | lb/day | | | | | | | | | | lb/day | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.5886 | 19.7634 | 5.8536 | 0.0730 | 2.0176 | 0.0223 | 2.0399 | 0.5808 | 0.0213 | 0.6021 | | 7,717.7833 | 7,717.7833 | 0.2658 | | 7,724.4280 |
| Worker | 2.5318 | 1.3437 | 16.3850 | 0.0780 | 12.6097 | 0.0467 | 12.6564 | 3.3447 | 0.0430 | 3.3877 | | 7,788.9690 | 7,788.9690 | 0.0895 | | 7,791.2060 |
| **Total** | **3.1204** | **21.1072** | **22.2387** | **0.1510** | **14.6272** | **0.0690** | **14.6963** | **3.9255** | **0.0643** | **3.9898** | | **15,506.7523** | **15,506.7523** | **0.3553** | | **15,515.6340** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.4479 | 2.4257 | 17.5650 | 0.0310 | | 0.0543 | 0.0543 | | 0.0543 | 0.0543 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **0.4479** | **2.4257** | **17.5650** | **0.0310** | | **0.0543** | **0.0543** | | **0.0543** | **0.0543** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.5886 | 19.7634 | 5.8536 | 0.0730 | 1.9313 | 0.0223 | 1.9536 | 0.5596 | 0.0213 | 0.5809 | | 7,717.7833 | 7,717.7833 | 0.2658 | | 7,724.4280 |
| Worker | 2.5318 | 1.3437 | 16.3850 | 0.0780 | 11.9521 | 0.0467 | 11.9989 | 3.1833 | 0.0430 | 3.2263 | | 7,788.9690 | 7,788.9690 | 0.0895 | | 7,791.2060 |
| **Total** | **3.1204** | **21.1072** | **22.2387** | **0.1510** | **13.8834** | **0.0690** | **13.9524** | **3.7429** | **0.0643** | **3.8072** | | **15,506.7523** | **15,506.7523** | **0.3553** | | **15,515.6340** |

## 3.8 Architectural Coating - 2031

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 18.9524 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.3922 | 2.5688 | 5.3932 | 8.9100e-003 | | 0.0609 | 0.0609 | | 0.0609 | 0.0609 | | 844.3442 | 844.3442 | 0.0342 | | 845.1985 |
| **Total** | **19.3446** | **2.5688** | **5.3932** | **8.9100e-003** | | **0.0609** | **0.0609** | | **0.0609** | **0.0609** | | **844.3442** | **844.3442** | **0.0342** | | **845.1985** |

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| Category | lb/day | | | | | | | | | | | lb/day | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.5456 | 0.2899 | 3.4731 | 0.0159 | 2.5219 | 0.0100 | 2.5320 | 0.6689 | 9.2300e-003 | 0.6782 | | 1,589.9260 | 1,589.9260 | 0.0194 | | 1,590.4117 |
| **Total** | **0.5456** | **0.2899** | **3.4731** | **0.0159** | **2.5219** | **0.0100** | **2.5320** | **0.6689** | **9.2300e-003** | **0.6782** | | **1,589.9260** | **1,589.9260** | **0.0194** | | **1,590.4117** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 18.9524 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.0891 | 0.3863 | 5.4972 | 8.9100e-003 | | 0.0119 | 0.0119 | | 0.0119 | 0.0119 | 0.0000 | 844.3441 | 844.3441 | 0.0342 | | 845.1984 |
| **Total** | **19.0415** | **0.3863** | **5.4972** | **8.9100e-003** | | **0.0119** | **0.0119** | | **0.0119** | **0.0119** | **0.0000** | **844.3441** | **844.3441** | **0.0342** | | **845.1984** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.5456 | 0.2899 | 3.4731 | 0.0159 | 2.3904 | 0.0100 | 2.4005 | 0.6367 | 9.2300e-003 | 0.6459 | | 1,589.9260 | 1,589.9260 | 0.0194 | | 1,590.4117 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | **0.5456** | **0.2899** | **3.4731** | **0.0159** | **2.3904** | **0.0100** | **2.4005** | **0.6367** | **9.2300e-003** | **0.6459** | | **1,589.9260** | **1,589.9260** | **0.0194** | | **1,590.4117** |

## 3.8 Architectural Coating - 2032

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 18.9524 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.3922 | 2.5688 | 5.3932 | 8.9100e-003 | | 0.0609 | 0.0609 | | 0.0609 | 0.0609 | | 844.3442 | 844.3442 | 0.0342 | | 845.1985 |
| **Total** | **19.3446** | **2.5688** | **5.3932** | **8.9100e-003** | | **0.0609** | **0.0609** | | **0.0609** | **0.0609** | | **844.3442** | **844.3442** | **0.0342** | | **845.1985** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.5064 | 0.2688 | 3.2770 | 0.0156 | 2.5219 | 9.3500e-003 | 2.5313 | 0.6689 | 8.6000e-003 | 0.6775 | | 1,557.7938 | 1,557.7938 | 0.0179 | | 1,558.2412 |
| **Total** | **0.5064** | **0.2688** | **3.2770** | **0.0156** | **2.5219** | **9.3500e-003** | **2.5313** | **0.6689** | **8.6000e-003** | **0.6775** | | **1,557.7938** | **1,557.7938** | **0.0179** | | **1,558.2412** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 18.9524 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.0891 | 0.3863 | 5.4972 | 8.9100e-003 | | 0.0119 | 0.0119 | | 0.0119 | 0.0119 | 0.0000 | 844.3441 | 844.3441 | 0.0342 | | 845.1984 |
| **Total** | **19.0415** | **0.3863** | **5.4972** | **8.9100e-003** | | **0.0119** | **0.0119** | | **0.0119** | **0.0119** | **0.0000** | **844.3441** | **844.3441** | **0.0342** | | **845.1984** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.5064 | 0.2688 | 3.2770 | 0.0156 | 2.3904 | 9.3500e-003 | 2.3998 | 0.6367 | 8.6000e-003 | 0.6453 | | 1,557.7938 | 1,557.7938 | 0.0179 | | 1,558.2412 |
| **Total** | **0.5064** | **0.2688** | **3.2770** | **0.0156** | **2.3904** | **9.3500e-003** | **2.3998** | **0.6367** | **8.6000e-003** | **0.6453** | | **1,557.7938** | **1,557.7938** | **0.0179** | | **1,558.2412** |

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

Increase Diversity

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

Implement NEV Network

Expand Transit Network

Implement Trip Reduction Program

Transit Subsidy

Encourage Telecommuting and Alternative Work Schedules

Employee Vanpool/Shuttle

Provide Riade Sharing Program

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 4.7794 | 25.1696 | 57.2912 | 0.2560 | 31.2064 | 0.1475 | 31.3539 | 8.3437 | 0.1371 | 8.4808 | | 25,989.1196 | 25,989.1196 | 0.7977 | | 26,009.0631 |
| Unmitigated | 5.8241 | 30.4604 | 80.6301 | 0.3883 | 48.8144 | 0.2168 | 49.0312 | 13.0516 | 0.2016 | 13.2532 | | 39,404.8470 | 39,404.8470 | 1.1032 | | 39,432.4259 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| City Park | 0.00 | 0.00 | 0.00 | | |
| Condo/Townhouse High Rise | 600.00 | 538.75 | 428.75 | 2,040,171 | 1,319,121 |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Recreational Swimming Pool | 0.00 | 0.00 | 0.00 | | |
| Retirement Community | 2,280.00 | 964.25 | 926.25 | 6,834,252 | 4,418,848 |
| Strip Mall | 3,449.55 | 3,846.66 | 1869.35 | 10,775,827 | 6,824,427 |
| Total | 6,329.55 | 5,349.66 | 3,224.35 | 19,650,251 | 12,562,396 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C- | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| City Park | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 66 | 28 | 6 |
| Condo/Townhouse High Rise | 16.80 | 7.50 | 8.90 | 31.00 | 15.00 | 54.00 | 86 | 11 | 3 |
| Parking Lot | 9.50 | 7.30 | 7.30 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Recreational Swimming Pool | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 52 | 39 | 9 |
| Retirement Community | 16.80 | 7.50 | 8.90 | 31.00 | 15.00 | 54.00 | 86 | 11 | 3 |
| Strip Mall | 20.30 | 15.60 | 15.60 | 16.60 | 64.40 | 19.00 | 45 | 40 | 15 |

### 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| City Park | 0.608861 | 0.034484 | 0.184220 | 0.107205 | 0.011406 | 0.004825 | 0.010903 | 0.026628 | 0.001670 | 0.001490 | 0.005061 | 0.002613 | 0.000633 |
| Condo/Townhouse High Rise | 0.608861 | 0.034484 | 0.184220 | 0.107205 | 0.011406 | 0.004825 | 0.010903 | 0.026628 | 0.001670 | 0.001490 | 0.005061 | 0.002613 | 0.000633 |
| Parking Lot | 0.608861 | 0.034484 | 0.184220 | 0.107205 | 0.011406 | 0.004825 | 0.010903 | 0.026628 | 0.001670 | 0.001490 | 0.005061 | 0.002613 | 0.000633 |
| Recreational Swimming Pool | 0.608861 | 0.034484 | 0.184220 | 0.107205 | 0.011406 | 0.004825 | 0.010903 | 0.026628 | 0.001670 | 0.001490 | 0.005061 | 0.002613 | 0.000633 |
| Retirement Community | 0.608861 | 0.034484 | 0.184220 | 0.107205 | 0.011406 | 0.004825 | 0.010903 | 0.026628 | 0.001670 | 0.001490 | 0.005061 | 0.002613 | 0.000633 |
| Strip Mall | 0.608861 | 0.034484 | 0.184220 | 0.107205 | 0.011406 | 0.004825 | 0.010903 | 0.026628 | 0.001670 | 0.001490 | 0.005061 | 0.002613 | 0.000633 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Percent of Electricity Use Generated with Renewable Energy

Install Energy Efficient Appliances

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.1149 | 0.9837 | 0.4300 | 6.2700e-003 | | 0.0794 | 0.0794 | | 0.0794 | 0.0794 | | 1,253.7221 | 1,253.7221 | 0.0240 | 0.0230 | 1,261.1723 |
| NaturalGas Unmitigated | 0.1815 | 1.5541 | 0.6855 | 9.9000e-003 | | 0.1254 | 0.1254 | | 0.1254 | 0.1254 | | 1,979.4488 | 1,979.4488 | 0.0379 | 0.0363 | 1,991.2117 |

## 5.2 Energy by Land Use - NaturalGas

### Unmitigated

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Condo/Townhouse High Rise | 2958.72 | 0.0319 | 0.2727 | 0.1160 | 1.7400e-003 | | 0.0221 | 0.0221 | | 0.0221 | 0.0221 | | 348.0842 | 348.0842 | 6.6700e-003 | 6.3800e-003 | 350.1527 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Retirement Community | 13272.5 | 0.1431 | 1.2232 | 0.5205 | 7.8100e-003 | | 0.0989 | 0.0989 | | 0.0989 | 0.0989 | | 1,561.4678 | 1,561.4678 | 0.0299 | 0.0286 | 1,570.7468 |
| Strip Mall | 594.123 | 6.4100e-003 | 0.0583 | 0.0489 | 3.5000e-004 | | 4.4300e-003 | 4.4300e-003 | | 4.4300e-003 | 4.4300e-003 | | 69.8969 | 69.8969 | 1.3400e-003 | 1.2800e-003 | 70.3122 |
| **Total** | | **0.1815** | **1.5541** | **0.6855** | **9.9000e-003** | | **0.1254** | **0.1254** | | **0.1254** | **0.1254** | | **1,979.4488** | **1,979.4488** | **0.0379** | **0.0363** | **1,991.2117** |

### Mitigated

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Condo/Townhouse High Rise | 1.96325 | 0.0212 | 0.1809 | 0.0770 | 1.1500e-003 | | 0.0146 | 0.0146 | | 0.0146 | 0.0146 | | 230.9707 | 230.9707 | 4.4300e-003 | 4.2300e-003 | 232.3432 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Retirement Community | 8.41415 | 0.0907 | 0.7754 | 0.3300 | 4.9500e-003 | | 0.0627 | 0.0627 | | 0.0627 | 0.0627 | | 989.8999 | 989.8999 | 0.0190 | 0.0182 | 995.7824 |
| Strip Mall | 0.279238 | 3.0100e-003 | 0.0274 | 0.0230 | 1.6000e-004 | | 2.0800e-003 | 2.0800e-003 | | 2.0800e-003 | 2.0800e-003 | | 32.8515 | 32.8515 | 6.3000e-004 | 6.0000e-004 | 33.0467 |
| **Total** | | **0.1149** | **0.9837** | **0.4300** | **6.2600e-003** | | **0.0794** | **0.0794** | | **0.0794** | **0.0794** | | **1,253.7221** | **1,253.7221** | **0.0240** | **0.0230** | **1,261.1723** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

Use Low VOC Cleaning Supplies

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 14.9298 | 0.4530 | 37.5369 | 1.7000e-003 | | 0.2049 | 0.2049 | | 0.2049 | 0.2049 | 0.0000 | 62.4183 | 62.4183 | 0.0446 | 0.0000 | 63.5324 |
| Unmitigated | 19.5369 | 4.2853 | 50.9928 | 0.0263 | | 0.5751 | 0.5751 | | 0.5751 | 0.5751 | 0.0000 | 4,832.7505 | 4,832.7505 | 0.1761 | 0.0870 | 4,863.0677 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 2.5962 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 15.0254 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.4348 | 3.7158 | 1.5812 | 0.0237 | | 0.3004 | 0.3004 | | 0.3004 | 0.3004 | 0.0000 | 4,743.5294 | 4,743.5294 | 0.0909 | 0.0870 | 4,771.7178 |
| Landscaping | 1.4805 | 0.5695 | 49.4116 | 2.6200e-003 | | 0.2747 | 0.2747 | | 0.2747 | 0.2747 | | 89.2211 | 89.2211 | 0.0852 | | 91.3498 |
| **Total** | **19.5369** | **4.2853** | **50.9928** | **0.0263** | | **0.5751** | **0.5751** | | **0.5751** | **0.5751** | **0.0000** | **4,832.7505** | **4,832.7505** | **0.1761** | **0.0870** | **4,863.0677** |

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.2305 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 13.9142 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 0.7851 | 0.4530 | 37.5369 | 1.7000e-003 | | 0.2049 | 0.2049 | | 0.2049 | 0.2049 | | 62.4183 | 62.4183 | 0.0446 | | 63.5324 |
| **Total** | **14.9298** | **0.4530** | **37.5369** | **1.7000e-003** | | **0.2049** | **0.2049** | | **0.2049** | **0.2049** | **0.0000** | **62.4183** | **62.4183** | **0.0446** | **0.0000** | **63.5324** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

Use Reclaimed Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Turf Reduction

Use Water Efficient Irrigation System

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

## 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

**Boilers**

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

**User Defined Equipment**

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

# Vineyards at Deer Creek- Phase 4 and 5

## Contra Costa County, Mitigation Report

## Construction Mitigation Summary

| Phase | ROG | NOx | CO | SO2 | Exhaust PM10 | Exhaust PM2.5 | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Reduction | | | | | | | | | | | | |
| Architectural Coating | 0.02 | 0.77 | -0.01 | 0.00 | 0.69 | 0.70 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Building Construction | 0.20 | 0.19 | -0.04 | 0.00 | 0.43 | 0.44 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Grading | 0.76 | 0.76 | -0.53 | 0.00 | 0.79 | 0.79 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Infrastructure Improvements | 0.72 | 0.68 | -0.23 | 0.00 | 0.66 | 0.67 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Paving | 0.65 | 0.83 | -0.09 | 0.00 | 0.88 | 0.88 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Site Preparation | 0.80 | 0.85 | -0.28 | 0.00 | 0.86 | 0.86 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## OFFROAD Equipment Mitigation

| Equipment Type | Fuel Type | Tier | Number Mitigated | Total Number of Equipment | DPF | Oxidation Catalyst |
|---|---|---|---|---|---|---|
| Air Compressors | Diesel | Tier 4 Final | 3 | 3 | No Change | 0.00 |
| Concrete/Industrial Saws | Diesel | Tier 4 Final | 0 | 1 | No Change | 0.00 |
| Cranes | Diesel | Tier 4 Final | 1 | 1 | No Change | 0.00 |
| Excavators | Diesel | Tier 4 Final | 13 | 13 | No Change | 0.00 |
| Forklifts | Diesel | Tier 4 Final | 3 | 3 | No Change | 0.00 |
| Generator Sets | Diesel | Tier 4 Final | 1 | 1 | No Change | 0.00 |
| Graders | Diesel | Tier 4 Final | 1 | 1 | No Change | 0.00 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Pavers | Diesel | Tier 4 Final | 2 | 2 | No Change | 0.00 |
| Paving Equipment | Diesel | Tier 4 Final | 2 | 2 | No Change | 0.00 |
| Rollers | Diesel | Tier 4 Final | 2 | 2 | No Change | 0.00 |
| Rubber Tired Dozers | Diesel | Tier 4 Final | 6 | 6 | No Change | 0.00 |
| Rubber Tired Loaders | Diesel | Tier 4 Final | 8 | 8 | No Change | 0.00 |
| Scrapers | Diesel | Tier 4 Final | 4 | 4 | No Change | 0.00 |
| Tractors/Loaders/Backhoes | Diesel | Tier 4 Final | 17 | 17 | No Change | 0.00 |
| Welders | Diesel | Tier 4 Final | 0 | 1 | No Change | 0.00 |

| Equipment Type | ROG | NOx | CO | SO2 | Exhaust PM10 | Exhaust PM2.5 | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Unmitigated tons/yr | | | | | | Unmitigated mt/yr | | | | | |
| Air Compressors | 9.80600E-002 | 6.42210E-001 | 1.34831E+000 | 2.23000E-003 | 1.52300E-002 | 1.52300E-002 | 0.00000E+000 | 1.91494E+002 | 1.91494E+002 | 7.75000E-003 | 0.00000E+000 | 1.91688E+002 |
| Cranes | 6.66900E-002 | 2.22710E-001 | 3.41510E-001 | 1.79000E-003 | 7.15000E-003 | 7.15000E-003 | 0.00000E+000 | 1.53500E+002 | 1.53500E+002 | 5.40000E-003 | 0.00000E+000 | 1.53635E+002 |
| Excavators | 8.43600E-002 | 2.07920E-001 | 1.33148E+000 | 2.38000E-003 | 9.11000E-003 | 9.11000E-003 | 0.00000E+000 | 2.04178E+002 | 2.04178E+002 | 6.83000E-003 | 0.00000E+000 | 2.04349E+002 |
| Forklifts | 7.67600E-002 | 4.21780E-001 | 1.03045E+000 | 1.63000E-003 | 5.70000E-003 | 5.70000E-003 | 0.00000E+000 | 1.39840E+002 | 1.39840E+002 | 6.15000E-003 | 0.00000E+000 | 1.39994E+002 |
| Generator Sets | 5.62000E-002 | 5.19390E-001 | 1.04699E+000 | 1.89000E-003 | 1.07400E-002 | 1.07400E-002 | 0.00000E+000 | 1.62780E+002 | 1.62780E+002 | 4.58000E-003 | 0.00000E+000 | 1.62894E+002 |
| Graders | 1.60600E-002 | 5.08700E-002 | 8.53800E-002 | 4.50000E-004 | 1.78000E-003 | 1.78000E-003 | 0.00000E+000 | 3.83429E+001 | 3.83429E+001 | 1.28000E-003 | 0.00000E+000 | 3.83750E+001 |
| Pavers | 6.36000E-003 | 3.01900E-002 | 7.04600E-002 | 1.30000E-004 | 1.57000E-003 | 1.57000E-003 | 0.00000E+000 | 1.09223E+001 | 1.09223E+001 | 5.20000E-004 | 0.00000E+000 | 1.09352E+001 |
| Paving Equipment | 5.35000E-003 | 2.51300E-002 | 6.09600E-002 | 1.10000E-004 | 1.29000E-003 | 1.29000E-003 | 0.00000E+000 | 9.50596E+000 | 9.50596E+000 | 4.30000E-004 | 0.00000E+000 | 9.51683E+000 |
| Rollers | 3.53000E-003 | 2.30000E-002 | 4.29200E-002 | 7.00000E-005 | 7.80000E-004 | 7.80000E-004 | 0.00000E+000 | 6.08125E+000 | 6.08125E+000 | 2.90000E-004 | 0.00000E+000 | 6.08848E+000 |
| Rubber Tired Dozers | 4.08600E-002 | 2.22970E-001 | 1.61250E-001 | 7.30000E-004 | 8.42000E-003 | 8.42000E-003 | 0.00000E+000 | 6.28857E+001 | 6.28857E+001 | 3.32000E-003 | 0.00000E+000 | 6.29687E+001 |
| Rubber Tired Loaders | 7.14600E-002 | 2.22880E-001 | 3.87230E-001 | 2.04000E-003 | 7.49000E-003 | 7.49000E-003 | 0.00000E+000 | 1.75428E+002 | 1.75428E+002 | 5.56000E-003 | 0.00000E+000 | 1.75567E+002 |
| Scrapers | 1.77030E-001 | 7.22490E-001 | 8.09290E-001 | 3.42000E-003 | 2.73400E-002 | 2.73400E-002 | 0.00000E+000 | 3.52393E+002 | 3.52393E+002 | 1.42600E-002 | 0.00000E+000 | 3.52749E+002 |
| Tractors/Loaders/Backhoes | 1.98000E-001 | 1.18217E+000 | 2.69702E+000 | 4.37000E-003 | 2.18400E-002 | 2.18400E-002 | 0.00000E+000 | 3.75291E+002 | 3.75291E+002 | 1.58500E-002 | 0.00000E+000 | 3.75687E+002 |
| Welders | 4.72100E-002 | 3.44140E-001 | 4.61270E-001 | 7.40000E-004 | 4.73000E-003 | 4.73000E-003 | 0.00000E+000 | 5.42075E+001 | 5.42075E+001 | 3.82000E-003 | 0.00000E+000 | 5.43029E+001 |

| Equipment Type | ROG | NOx | CO | SO2 | Exhaust PM10 | Exhaust PM2.5 | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mitigated tons/yr | | | | | | Mitigated mt/yr | | | | | |
| Air Compressors | 2.22900E-002 | 9.65700E-002 | 1.37431E+000 | 2.23000E-003 | 2.97000E-003 | 2.97000E-003 | 0.00000E+000 | 1.91494E+002 | 1.91494E+002 | 7.75000E-003 | 0.00000E+000 | 1.91688E+002 |
| Cranes | 1.78600E-002 | 7.74100E-002 | 6.55020E-001 | 1.79000E-003 | 2.38000E-003 | 2.38000E-003 | 0.00000E+000 | 1.53499E+002 | 1.53499E+002 | 5.40000E-003 | 0.00000E+000 | 1.53635E+002 |
| Excavators | 2.37600E-002 | 1.02970E-001 | 1.46534E+000 | 2.38000E-003 | 3.17000E-003 | 3.17000E-003 | 0.00000E+000 | 2.04178E+002 | 2.04178E+002 | 6.83000E-003 | 0.00000E+000 | 2.04349E+002 |
| Forklifts | 1.62700E-002 | 7.05200E-002 | 1.00360E+000 | 1.63000E-003 | 2.17000E-003 | 2.17000E-003 | 0.00000E+000 | 1.39840E+002 | 1.39840E+002 | 6.15000E-003 | 0.00000E+000 | 1.39993E+002 |
| Generator Sets | 1.89400E-002 | 8.20900E-002 | 1.16823E+000 | 1.89000E-003 | 2.53000E-003 | 2.53000E-003 | 0.00000E+000 | 1.62780E+002 | 1.62780E+002 | 4.58000E-003 | 0.00000E+000 | 1.62894E+002 |
| Graders | 4.46000E-003 | 1.93400E-002 | 1.63620E-001 | 4.50000E-004 | 5.90000E-004 | 5.90000E-004 | 0.00000E+000 | 3.83429E+001 | 3.83429E+001 | 1.28000E-003 | 0.00000E+000 | 3.83749E+001 |
| Pavers | 1.27000E-003 | 5.51000E-003 | 7.83900E-002 | 1.30000E-004 | 1.70000E-004 | 1.70000E-004 | 0.00000E+000 | 1.09222E+001 | 1.09222E+001 | 5.20000E-004 | 0.00000E+000 | 1.09352E+001 |
| Paving Equipment | 1.11000E-003 | 4.79000E-003 | 6.82200E-002 | 1.10000E-004 | 1.50000E-004 | 1.50000E-004 | 0.00000E+000 | 9.50595E+000 | 9.50595E+000 | 4.30000E-004 | 0.00000E+000 | 9.51682E+000 |
| Rollers | 7.10000E-004 | 3.07000E-003 | 4.36400E-002 | 7.00000E-005 | 9.00000E-005 | 9.00000E-005 | 0.00000E+000 | 6.08125E+000 | 6.08125E+000 | 2.90000E-004 | 0.00000E+000 | 6.08847E+000 |
| Rubber Tired Dozers | 7.32000E-003 | 3.17100E-002 | 2.68350E-001 | 7.30000E-004 | 9.80000E-004 | 9.80000E-004 | 0.00000E+000 | 6.28856E+001 | 6.28856E+001 | 3.32000E-003 | 0.00000E+000 | 6.29686E+001 |
| Rubber Tired Loaders | 2.04200E-002 | 8.84700E-002 | 7.48600E-001 | 2.04000E-003 | 2.72000E-003 | 2.72000E-003 | 0.00000E+000 | 1.75428E+002 | 1.75428E+002 | 5.56000E-003 | 0.00000E+000 | 1.75567E+002 |
| Scrapers | 4.10100E-002 | 1.77720E-001 | 1.50375E+000 | 3.42000E-003 | 5.47000E-003 | 5.47000E-003 | 0.00000E+000 | 3.52392E+002 | 3.52392E+002 | 1.42600E-002 | 0.00000E+000 | 3.52749E+002 |
| Tractors/Loaders/Backhoes | 4.36800E-002 | 1.89260E-001 | 2.69337E+000 | 4.37000E-003 | 5.82000E-003 | 5.82000E-003 | 0.00000E+000 | 3.75291E+002 | 3.75291E+002 | 1.58500E-002 | 0.00000E+000 | 3.75687E+002 |
| Welders | 4.72100E-002 | 3.44140E-001 | 4.61270E-001 | 7.40000E-004 | 4.73000E-003 | 4.73000E-003 | 0.00000E+000 | 5.42075E+001 | 5.42075E+001 | 3.82000E-003 | 0.00000E+000 | 5.43029E+001 |

| Equipment Type | ROG | NOx | CO | SO2 | Exhaust PM10 | Exhaust PM2.5 | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Percent Reduction | | | | | | | | | | | |
| Air Compressors | 7.72690E-001 | 8.49629E-001 | -1.92834E-002 | 0.00000E+000 | 8.04990E-001 | 8.04990E-001 | 0.00000E+000 | 1.20108E-006 | 1.20108E-006 | 0.00000E+000 | 0.00000E+000 | 1.14770E-006 |
| Cranes | 7.32194E-001 | 6.52418E-001 | -9.18011E-001 | 0.00000E+000 | 6.67133E-001 | 6.67133E-001 | 0.00000E+000 | 1.17264E-006 | 1.17264E-006 | 0.00000E+000 | 0.00000E+000 | 1.17161E-006 |
| Excavators | 7.18350E-001 | 5.04761E-001 | -1.00535E-001 | 0.00000E+000 | 6.52031E-001 | 6.52031E-001 | 0.00000E+000 | 1.17544E-006 | 1.17544E-006 | 0.00000E+000 | 0.00000E+000 | 1.17446E-006 |
| Forklifts | 7.88041E-001 | 8.32804E-001 | 2.60566E-002 | 0.00000E+000 | 6.19298E-001 | 6.19298E-001 | 0.00000E+000 | 1.14417E-006 | 1.14417E-006 | 0.00000E+000 | 0.00000E+000 | 1.21434E-006 |
| Generator Sets | 6.62989E-001 | 8.41949E-001 | -1.15799E-001 | 0.00000E+000 | 7.64432E-001 | 7.64432E-001 | 0.00000E+000 | 1.22865E-006 | 1.22865E-006 | 0.00000E+000 | 0.00000E+000 | 1.16640E-006 |
| Graders | 7.22291E-001 | 6.19815E-001 | -9.16374E-001 | 0.00000E+000 | 6.68539E-001 | 6.68539E-001 | 0.00000E+000 | 1.30402E-006 | 1.30402E-006 | 0.00000E+000 | 0.00000E+000 | 1.04235E-006 |
| Pavers | 8.00314E-001 | 8.17489E-001 | -1.12546E-001 | 0.00000E+000 | 8.91720E-001 | 8.91720E-001 | 0.00000E+000 | 9.15562E-007 | 9.15562E-007 | 0.00000E+000 | 0.00000E+000 | 1.82895E-006 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Paving Equipment | 7.92523E-001 | 8.09391E-001 | -1.19094E-001 | 0.00000E+000 | 8.83721E-001 | 8.83721E-001 | 0.00000E+000 | 1.05197E-006 | 1.05197E-006 | 0.00000E+000 | 0.00000E+000 | 1.05077E-006 |
| Rollers | 7.98867E-001 | 8.66522E-001 | -1.67754E-002 | 0.00000E+000 | 8.84615E-001 | 8.84615E-001 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 1.64245E-006 |
| Rubber Tired Dozers | 8.20852E-001 | 8.57784E-001 | -6.64186E-001 | 0.00000E+000 | 8.83610E-001 | 8.83610E-001 | 0.00000E+000 | 1.11313E-006 | 1.11313E-006 | 0.00000E+000 | 0.00000E+000 | 1.27047E-006 |
| Rubber Tired Loaders | 7.14246E-001 | 6.03060E-001 | -9.33218E-001 | 0.00000E+000 | 6.36849E-001 | 6.36849E-001 | 0.00000E+000 | 1.19707E-006 | 1.19707E-006 | 0.00000E+000 | 0.00000E+000 | 1.19612E-006 |
| Scrapers | 7.68344E-001 | 7.54017E-001 | -8.58110E-001 | 0.00000E+000 | 7.99927E-001 | 7.99927E-001 | 0.00000E+000 | 1.19185E-006 | 1.19185E-006 | 0.00000E+000 | 0.00000E+000 | 1.19065E-006 |
| Tractors/Loaders/Backhoes | 7.79394E-001 | 8.39905E-001 | 1.35335E-003 | 0.00000E+000 | 7.33516E-001 | 7.33516E-001 | 0.00000E+000 | 1.19907E-006 | 1.19907E-006 | 0.00000E+000 | 0.00000E+000 | 1.19780E-006 |
| Welders | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 1.10686E-006 | 1.10686E-006 | 0.00000E+000 | 0.00000E+000 | 1.28906E-006 |

## Fugitive Dust Mitigation

| Yes/No | Mitigation Measure | Mitigation Input | | Mitigation Input | | Mitigation Input | |
|---|---|---|---|---|---|---|---|
| No | Soil Stabilizer for unpaved Roads | PM10 Reduction | 0.00 | PM2.5 Reduction | 0.00 | | |
| Yes | Replace Ground Cover of Area Disturbed | PM10 Reduction | 5.00 | PM2.5 Reduction | 5.00 | | |
| Yes | Water Exposed Area | PM10 Reduction | 55.00 | PM2.5 Reduction | 55.00 | Frequency (per day) | 2.00 |
| Yes | Unpaved Road Mitigation | Moisture Content % | 12.00 | Vehicle Speed (mph) | 15.00 | | |
| Yes | Clean Paved Road | % PM Reduction | 6.00 | | | | |

| | | Unmitigated | | Mitigated | | Percent Reduction | |
|---|---|---|---|---|---|---|---|
| Phase | Source | PM10 | PM2.5 | PM10 | PM2.5 | PM10 | PM2.5 |
| Architectural Coating | Fugitive Dust | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Architectural Coating | Roads | 0.61 | 0.16 | 0.58 | 0.15 | 0.05 | 0.05 |
| Building Construction | Fugitive Dust | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Building Construction | Roads | 4.07 | 1.10 | 3.87 | 1.05 | 0.05 | 0.05 |
| Grading | Fugitive Dust | 0.59 | 0.21 | 0.25 | 0.09 | 0.57 | 0.57 |
| Grading | Roads | 0.01 | 0.00 | 0.01 | 0.00 | 0.05 | 0.05 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Infrastructure Improvements | Fugitive Dust | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Infrastructure Improvements | Roads | 0.02 | 0.00 | 0.01 | 0.00 | 0.05 | 0.05 |
| Paving | Fugitive Dust | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Paving | Roads | 0.00 | 0.00 | 0.00 | 0.00 | 0.05 | 0.06 |
| Site Preparation | Fugitive Dust | 0.09 | 0.05 | 0.04 | 0.02 | 0.57 | 0.57 |
| Site Preparation | Roads | 0.00 | 0.00 | 0.00 | 0.00 | 0.04 | 0.05 |

## Operational Percent Reduction Summary

| Category | ROG | NOx | CO | SO2 | Exhaust PM10 | Exhaust PM2.5 | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Reduction | | | | | | | | | | | | |
| Architectural Coating | 91.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Consumer Products | 7.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Electricity | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Hearth | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 0.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Landscaping | 46.97 | 20.46 | 24.03 | 37.50 | 25.40 | 25.40 | 0.00 | 30.04 | 30.04 | 47.63 | 0.00 | 30.45 |
| Mobile | 17.28 | 16.90 | 29.78 | 34.00 | 32.02 | 32.04 | 0.00 | 33.95 | 33.95 | 28.15 | 0.00 | 33.94 |
| Natural Gas | 36.67 | 36.70 | 37.27 | 36.67 | 36.67 | 36.67 | 0.00 | 36.66 | 36.66 | 36.68 | 36.77 | 36.66 |
| Water Indoor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 20.00 | 22.80 | 22.04 | 20.01 | 20.12 | 21.08 |
| Water Outdoor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## Operational Mobile Mitigation

Project Setting:

| Mitigation | Category | Measure | % Reduction | Input Value 1 | Input Value 2 | Input Value 3 |
|---|---|---|---|---|---|---|
| No | Land Use | Increase Density | 0.00 | 0.00 | 0.00 | |
| Yes | Land Use | Increase Diversity | 0.17 | 0.43 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| No | Land Use | Improve Walkability Design | 0.00 | 0.00 | | |
| No | Land Use | Improve Destination Accessibility | 0.00 | 0.00 | | |
| Yes | Land Use | Increase Transit Accessibility | 0.06 | 1.00 | | |
| No | Land Use | Integrate Below Market Rate Housing | 0.00 | 0.00 | | |
| | Land Use | Land Use SubTotal | 0.22 | | | |
| Yes | Neighborhood Enhancements | Improve Pedestrian Network | 2.00 | Project Site and Connecting Off-Site | | |
| Yes | Neighborhood Enhancements | Provide Traffic Calming Measures | 0.50 | 75.00 | 50.00 | |
| Yes | Neighborhood Enhancements | Implement NEV Network | 0.01 | | | |
| | Neighborhood Enhancements | Neighborhood Enhancements Subtotal | 0.15 | | | |
| Yes | Parking Policy Pricing | Limit Parking Supply | 0.00 | 0.00 | | |
| No | Parking Policy Pricing | Unbundle Parking Costs | 0.00 | 0.00 | | |
| No | Parking Policy Pricing | On-street Market Pricing | 0.00 | 0.00 | | |
| | Parking Policy Pricing | Parking Policy Pricing Subtotal | 0.00 | | | |
| No | Transit Improvements | Provide BRT System | 0.00 | 0.00 | | |
| Yes | Transit Improvements | Expand Transit Network | 0.00 | 2.00 | | |
| No | Transit Improvements | Increase Transit Frequency | 0.00 | | 0.00 | |
| | Transit Improvements | Transit Improvements Subtotal | 0.00 | | | |
| | | Land Use and Site Enhancement Subtotal | 0.34 | | | |
| Yes | Commute | Implement Trip Reduction Program | | 100.00 | Voluntary | |
| Yes | Commute | Transit Subsidy | | 100.00 | $1.49 | |
| No | Commute | Implement Employee Parking "Cash Out" | | 0.00 | | |
| No | Commute | Workplace Parking Charge | | 0.00 | | |
| Yes | Commute | Encourage Telecommuting and Alternative Work Schedules | 4.40 | 2.20 | 2.20 | |
| No | Commute | Market Commute Trip Reduction Option | 0.00 | 0.00 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Yes | Commute | Employee Vanpool/Shuttle | 0.01 | 100.00 | 2.00 | |
| Yes | Commute | Provide Ride Sharing Program | | 100.00 | | |
| | Commute | Commute Subtotal | 0.06 | | | |
| No | School Trip | Implement School Bus Program | 0.00 | 0.00 | | |
| | | Total VMT Reduction | 0.37 | | | |

**Area Mitigation**

| Measure Implemented | Mitigation Measure | Input Value |
|---|---|---|
| No | Only Natural Gas Hearth | |
| Yes | No Hearth | |
| Yes | Use Low VOC Cleaning Supplies | |
| Yes | Use Low VOC Paint (Residential Interior) | 10.00 |
| Yes | Use Low VOC Paint (Residential Exterior) | 10.00 |
| Yes | Use Low VOC Paint (Non-residential Interior) | 10.00 |
| Yes | Use Low VOC Paint (Non-residential Exterior) | 10.00 |
| Yes | Use Low VOC Paint (Parking) | 10.00 |
| Yes | % Electric Lawnmower | 100.00 |
| Yes | % Electric Leafblower | 100.00 |
| Yes | % Electric Chainsaw | 100.00 |

**Energy Mitigation Measures**

| Measure Implemented | Mitigation Measure | Input Value 1 | Input Value 2 |
|---|---|---|---|
| Yes | Exceed Title 24 | 53.00 | |
| Yes | Install High Efficiency Lighting | 75.00 | |
| Yes | On-site Renewable | 0.00 | 100.00 |

| Appliance Type | Land Use Subtype | % Improvement |
|---|---|---|
| ClothWasher | Condo/Townhouse High Ri... | 30.00 |
| ClothWasher | Retirement Community | 30.00 |
| DishWasher | Condo/Townhouse High Ri... | 15.00 |
| DishWasher | Retirement Community | 15.00 |
| Fan | Condo/Townhouse High Ri... | 50.00 |
| Fan | Retirement Community | 50.00 |
| Refrigerator | Condo/Townhouse High Ri... | 15.00 |
| Refrigerator | Retirement Community | 15.00 |

**Water Mitigation Measures**

| Measure Implemented | Mitigation Measure | Input Value 1 | Input Value 2 |
|---|---|---|---|
| No | Apply Water Conservation on Strategy | 0.00 | 0.00 |
| Yes | Use Reclaimed Water | 0.00 | 50.00 |
| No | Use Grey Water | 0.00 | |
| Yes | Install low-flow bathroom faucet | 32.00 | |
| Yes | Install low-flow Kitchen faucet | 18.00 | |
| Yes | Install low-flow Toilet | 20.00 | |
| Yes | Install low-flow Shower | 20.00 | |
| Yes | Turf Reduction | 100.00 | |
| Yes | Use Water Efficient Irrigation Systems | 6.10 | |
| No | Water Efficient Landscape | 0.00 | 0.00 |

**Solid Waste Mitigation**

| Mitigation Measures | Input Value |
|---|---|

| | |
|---|---|
| Institute Recycling and Composting Services<br>Percent Reduction in Waste Disposed | 75.00 |

# Vineyards at Deer Creek
**Contra Costa County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Parking Lot | 1,200.00 | Space | 10.80 | 480,000.00 | 0 |
| City Park | 225.00 | Acre | 225.00 | 9,801,000.00 | 0 |
| Recreational Swimming Pool | 8.00 | 1000sqft | 0.18 | 8,000.00 | 0 |
| Condo/Townhouse High Rise | 480.00 | Dwelling Unit | 7.50 | 480,000.00 | 1373 |
| Retirement Community | 1,920.00 | Dwelling Unit | 384.00 | 1,920,000.00 | 5491 |
| Strip Mall | 91.50 | 1000sqft | 2.10 | 91,500.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 58 |
| **Climate Zone** | 4 | | | **Operational Year** | 2033 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 146 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - Adjusted per PG&E 2018 CRSR

Land Use - Per PD
Parking assumed 2 spaces for multifamily housing (480 units), plus 10 extra spaces for each recreation area

Construction Phase - Operation Run only

Off-road Equipment -

Off-road Equipment - No demolition

Grading - Site balanced

Vehicle Trips - Per Fehr and Peers TIA 2019

Woodstoves - Per BAAQMD Regulation 6, Rule 3

Consumer Products -

Energy Use -

Water And Wastewater - City Park adjusted since it includes unirrigated open space

Solid Waste - City Park adjusted since primarily Open Space

Land Use Change -

Sequestration -

Construction Off-road Equipment Mitigation - Per BAAQMD basic control measure

Mobile Land Use Mitigation - Green building design elements include narrow roadways

Mobile Commute Mitigation - Per TDM program mitigation

Area Mitigation - Low VOC Paint throughout site, electric landscape equipment required, no hearths

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblAreaMitigation | UseLowVOCPaintNonresidentialExteriorValue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintNonresidentialInteriorValue | 100 | 10 |
| tblAreaMitigation | UseLowVOCPaintParkingCheck | False | True |
| tblAreaMitigation | UseLowVOCPaintParkingValue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintResidentialExteriorValue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintResidentialInteriorValue | 100 | 10 |
| tblConstDustMitigation | CleanPavedRoadPercentReduction | 0 | 6 |
| tblConstDustMitigation | WaterUnpavedRoadMoistureContent | 0 | 12 |
| tblConstDustMitigation | WaterUnpavedRoadVehicleSpeed | 0 | 15 |
| tblConstructionPhase | NumDays | 700.00 | 0.00 |
| tblFireplaces | NumberGas | 72.00 | 153.60 |
| tblFireplaces | NumberGas | 288.00 | 614.40 |
| tblFireplaces | NumberWood | 81.60 | 0.00 |
| tblFireplaces | NumberWood | 326.40 | 0.00 |

| | | | |
|---|---|---|---|
| tblProjectCharacteristics | CO2IntensityFactor | 641.35 | 146 |
| tblSolidWaste | SolidWasteGenerationRate | 19.35 | 10.00 |
| tblVehicleTrips | CC_TL | 7.30 | 15.60 |
| tblVehicleTrips | CNW_TL | 7.30 | 15.60 |
| tblVehicleTrips | CW_TL | 9.50 | 20.30 |
| tblVehicleTrips | HO_TL | 5.70 | 8.90 |
| tblVehicleTrips | HO_TL | 5.70 | 8.90 |
| tblVehicleTrips | HS_TL | 4.80 | 7.50 |
| tblVehicleTrips | HS_TL | 4.80 | 7.50 |
| tblVehicleTrips | HW_TL | 10.80 | 16.80 |
| tblVehicleTrips | HW_TL | 10.80 | 16.80 |
| tblVehicleTrips | ST_TR | 22.75 | 0.00 |
| tblVehicleTrips | ST_TR | 9.10 | 0.00 |
| tblVehicleTrips | ST_TR | 42.04 | 37.70 |
| tblVehicleTrips | SU_TR | 16.74 | 0.00 |
| tblVehicleTrips | SU_TR | 13.60 | 0.00 |
| tblVehicleTrips | WD_TR | 1.89 | 0.00 |
| tblVehicleTrips | WD_TR | 4.18 | 4.80 |
| tblVehicleTrips | WD_TR | 33.82 | 0.00 |
| tblVehicleTrips | WD_TR | 2.40 | 4.80 |
| tblVehicleTrips | WD_TR | 44.32 | 37.70 |
| tblWater | OutdoorWaterUseRate | 268,083,303.67 | 134,041,651.80 |
| tblWoodstoves | NumberCatalytic | 9.60 | 0.00 |
| tblWoodstoves | NumberCatalytic | 38.40 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 9.60 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 38.40 | 0.00 |

## 2.0 Emissions Summary

### 2.1 Overall Construction

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2028 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Maximum** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## Mitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2028 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Maximum** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---|---|---|---|---|
| | | Highest | | |

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 12.1966 | 0.2878 | 17.8224 | 1.4700e-003 | | 0.1056 | 0.1056 | | 0.1056 | 0.1056 | 0.0000 | 125.0129 | 125.0129 | 0.0296 | 1.7600e-003 | 126.2778 |
| Energy | 0.1291 | 1.1040 | 0.4742 | 7.0400e-003 | | 0.0892 | 0.0892 | | 0.0892 | 0.0892 | 0.0000 | 2,070.4218 | 2,070.4218 | 0.1819 | 0.0560 | 2,091.6577 |
| Mobile | 2.1439 | 10.7445 | 28.3148 | 0.1428 | 17.1809 | 0.0786 | 17.2595 | 4.6069 | 0.0731 | 4.6800 | 0.0000 | 13,145.8262 | 13,145.8262 | 0.3547 | 0.0000 | 13,154.6946 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 254.8917 | 0.0000 | 254.8917 | 15.0637 | 0.0000 | 631.4834 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 51.9092 | 113.5805 | 165.4897 | 5.3541 | 0.1306 | 338.2493 |
| **Total** | **14.4697** | **12.1363** | **46.6114** | **0.1513** | **17.1809** | **0.2733** | **17.4542** | **4.6069** | **0.2678** | **4.8748** | **306.8009** | **15,454.8414** | **15,761.6423** | **20.9841** | **0.1883** | **16,342.3627** |

## Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 9.6078 | 0.1631 | 13.5127 | 6.1000e-004 | | 0.0738 | 0.0738 | | 0.0738 | 0.0738 | 0.0000 | 20.3839 | 20.3839 | 0.0146 | 0.0000 | 20.7477 |
| Energy | 0.0823 | 0.7038 | 0.3016 | 4.4900e-003 | | 0.0569 | 0.0569 | | 0.0569 | 0.0569 | 0.0000 | 814.7364 | 814.7364 | 0.0156 | 0.0149 | 819.5780 |
| Mobile | 1.7842 | 8.9813 | 20.2103 | 0.0963 | 11.2550 | 0.0544 | 11.3095 | 3.0180 | 0.0506 | 3.0685 | 0.0000 | 8,871.3081 | 8,871.3081 | 0.2587 | 0.0000 | 8,877.7747 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 63.7229 | 0.0000 | 63.7229 | 3.7659 | 0.0000 | 157.8708 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 41.5274 | 88.1829 | 129.7103 | 4.2828 | 0.1043 | 267.8718 |
| **Total** | **11.4744** | **9.8481** | **34.0245** | **0.1014** | **11.2550** | **0.1851** | **11.4401** | **3.0180** | **0.1812** | **3.1992** | **105.2503** | **9,794.6113** | **9,899.8616** | **8.3375** | **0.1193** | **10,143.8430** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **20.70** | **18.85** | **27.00** | **32.98** | **34.49** | **32.30** | **34.46** | **34.49** | **32.34** | **34.37** | **65.69** | **36.62** | **37.19** | **60.27** | **36.66** | **37.93** |

## 2.3 Vegetation

### Vegetation

| | CO2e |
|---|---|
| Category | MT |
| New Trees | 0.0000 |
| Vegetation Land Change | -2,542.9000 |
| **Total** | **-2,542.9000** |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Demolition | Demolition | 12/29/2028 | 12/28/2028 | 5 | 0 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 10.8**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Demolition | Excavators | 3 | 8.00 | 158 | 0.38 |
| Demolition | Rubber Tired Dozers | 2 | 8.00 | 247 | 0.40 |

### Trips and VMT

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Demolition | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

## 3.2 Demolition - 2028

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## 4.0 Operational Detail - Mobile

## 4.1 Mitigation Measures Mobile

Increase Diversity

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

Implement NEV Network

Expand Transit Network

Implement Trip Reduction Program

Transit Subsidy

Encourage Telecommuting and Alternative Work Schedules

Market Commute Trip Reduction Option

Employee Vanpool/Shuttle

Provide Riade Sharing Program

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 1.7842 | 8.9813 | 20.2103 | 0.0963 | 11.2550 | 0.0544 | 11.3095 | 3.0180 | 0.0506 | 3.0685 | 0.0000 | 8,871.3081 | 8,871.3081 | 0.2587 | 0.0000 | 8,877.7747 |
| Unmitigated | 2.1439 | 10.7445 | 28.3148 | 0.1428 | 17.1809 | 0.0786 | 17.2595 | 4.6069 | 0.0731 | 4.6800 | 0.0000 | 13,145.8262 | 13,145.8262 | 0.3547 | 0.0000 | 13,154.6946 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| City Park | 0.00 | 0.00 | 0.00 | | |
| Condo/Townhouse High Rise | 2,304.00 | 2,068.80 | 1646.40 | 7,834,257 | 5,164,899 |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |

| | | | | | |
|---|---|---|---|---|---|
| Recreational Swimming Pool | 0.00 | 0.00 | 0.00 | | |
| Retirement Community | 9,216.00 | 3,897.60 | 3744.00 | 27,624,767 | 18,212,207 |
| Strip Mall | 3,449.55 | 3,449.55 | 1869.35 | 10,589,482 | 6,788,808 |
| Total | 14,969.55 | 9,415.95 | 7,259.75 | 46,048,506 | 30,165,913 |

### 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-... | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| City Park | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 66 | 28 | 6 |
| Condo/Townhouse High Rise | 16.80 | 7.50 | 8.90 | 31.00 | 15.00 | 54.00 | 86 | 11 | 3 |
| Parking Lot | 9.50 | 7.30 | 7.30 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Recreational Swimming Pool | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 52 | 39 | 9 |
| Retirement Community | 16.80 | 7.50 | 8.90 | 31.00 | 15.00 | 54.00 | 86 | 11 | 3 |
| Strip Mall | 20.30 | 15.60 | 15.60 | 16.60 | 64.40 | 19.00 | 45 | 40 | 15 |

### 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| City Park | 0.608861 | 0.034484 | 0.184220 | 0.107205 | 0.011406 | 0.004825 | 0.010903 | 0.026628 | 0.001670 | 0.001490 | 0.005061 | 0.002613 | 0.000633 |
| Condo/Townhouse High Rise | 0.608861 | 0.034484 | 0.184220 | 0.107205 | 0.011406 | 0.004825 | 0.010903 | 0.026628 | 0.001670 | 0.001490 | 0.005061 | 0.002613 | 0.000633 |
| Parking Lot | 0.608861 | 0.034484 | 0.184220 | 0.107205 | 0.011406 | 0.004825 | 0.010903 | 0.026628 | 0.001670 | 0.001490 | 0.005061 | 0.002613 | 0.000633 |
| Recreational Swimming Pool | 0.608861 | 0.034484 | 0.184220 | 0.107205 | 0.011406 | 0.004825 | 0.010903 | 0.026628 | 0.001670 | 0.001490 | 0.005061 | 0.002613 | 0.000633 |
| Retirement Community | 0.608861 | 0.034484 | 0.184220 | 0.107205 | 0.011406 | 0.004825 | 0.010903 | 0.026628 | 0.001670 | 0.001490 | 0.005061 | 0.002613 | 0.000633 |
| Strip Mall | 0.608861 | 0.034484 | 0.184220 | 0.107205 | 0.011406 | 0.004825 | 0.010903 | 0.026628 | 0.001670 | 0.001490 | 0.005061 | 0.002613 | 0.000633 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Percent of Electricity Use Generated with Renewable Energy

Install Energy Efficient Appliances

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Electricity Mitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 792.5943 | 792.5943 | 0.1574 | 0.0326 | 806.2367 |
| NaturalGas Mitigated | 0.0823 | 0.7038 | 0.3016 | 4.4900e-003 | | 0.0569 | 0.0569 | | 0.0569 | 0.0569 | 0.0000 | 814.7364 | 814.7364 | 0.0156 | 0.0149 | 819.5780 |
| NaturalGas Unmitigated | 0.1291 | 1.1040 | 0.4742 | 7.0400e-003 | | 0.0892 | 0.0892 | | 0.0892 | 0.0892 | 0.0000 | 1,277.8275 | 1,277.8275 | 0.0245 | 0.0234 | 1,285.4210 |

## 5.2 Energy by Land Use - NaturalGas

### Unmitigated

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Condo/Townhouse High Rise | 4.14694e+006 | 0.0224 | 0.1911 | 0.0813 | 1.2200e-003 | | 0.0155 | 0.0155 | | 0.0155 | 0.0155 | 0.0000 | 221.2963 | 221.2963 | 4.2400e-003 | 4.0600e-003 | 222.6114 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Retirement Community | 1.95818e+007 | 0.1056 | 0.9023 | 0.3840 | 5.7600e-003 | | 0.0730 | 0.0730 | | 0.0730 | 0.0730 | 0.0000 | 1,044.9590 | 1,044.9590 | 0.0200 | 0.0192 | 1,051.1687 |
| Strip Mall | 216855 | 1.1700e-003 | 0.0106 | 8.9300e-003 | 6.0000e-005 | | 8.1000e-004 | 8.1000e-004 | | 8.1000e-004 | 8.1000e-004 | 0.0000 | 11.5722 | 11.5722 | 2.2000e-004 | 2.1000e-004 | 11.6410 |
| **Total** | | **0.1291** | **1.1040** | **0.4742** | **7.0400e-003** | | **0.0892** | **0.0892** | | **0.0892** | **0.0892** | **0.0000** | **1,277.8275** | **1,277.8275** | **0.0245** | **0.0234** | **1,285.4210** |

### Mitigated

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Condo/Townhouse High Rise | 2.75169e+006 | 0.0148 | 0.1268 | 0.0540 | 8.1000e-004 | | 0.0103 | 0.0103 | | 0.0103 | 0.0103 | 0.0000 | 146.8408 | 146.8408 | 2.8100e-003 | 2.6900e-003 | 147.7134 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Retirement Community | 1.2414e+007 | 0.0669 | 0.5720 | 0.2434 | 3.6500e-003 | | 0.0463 | 0.0463 | | 0.0463 | 0.0463 | 0.0000 | 662.4567 | 662.4567 | 0.0127 | 0.0122 | 666.3934 |
| Strip Mall | 101922 | 5.5000e-004 | 5.0000e-003 | 4.2000e-003 | 3.0000e-005 | | 3.8000e-004 | 3.8000e-004 | | 3.8000e-004 | 3.8000e-004 | 0.0000 | 5.4389 | 5.4389 | 1.0000e-004 | 1.0000e-004 | 5.4713 |
| **Total** | | **0.0823** | **0.7038** | **0.3016** | **4.4900e-003** | | **0.0569** | **0.0569** | | **0.0569** | **0.0569** | **0.0000** | **814.7364** | **814.7364** | **0.0156** | **0.0149** | **819.5780** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Condo/Townhouse High Rise | 2.10624e+006 | 139.4850 | 0.0277 | 5.7300e-003 | 141.8858 |
| Parking Lot | 168000 | 11.1257 | 2.2100e-003 | 4.6000e-004 | 11.3172 |
| Recreational Swimming Pool | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Retirement Community | 8.71592e+006 | 577.2071 | 0.1147 | 0.0237 | 587.1422 |
| Strip Mall | 978135 | 64.7765 | 0.0129 | 2.6600e-003 | 65.8914 |

| | | | | | |
|---|---|---|---|---|---|
| **Total** | | **792.5943** | **0.1574** | **0.0326** | **806.2367** |

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Condo/Townhouse High Rise | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Retirement Community | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Strip Mall | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## 6.0 Area Detail

### 6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

Use Low VOC Cleaning Supplies

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 9.6078 | 0.1631 | 13.5127 | 6.1000e-004 | | 0.0738 | 0.0738 | | 0.0738 | 0.0738 | 0.0000 | 20.3839 | 20.3839 | 0.0146 | 0.0000 | 20.7477 |
| Unmitigated | 12.1966 | 0.2878 | 17.8224 | 1.4700e-003 | | 0.1056 | 0.1056 | | 0.1056 | 0.1056 | 0.0000 | 125.0129 | 125.0129 | 0.0296 | 1.7600e-003 | 126.2778 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 1.7534 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 9.9006 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 9.6900e-003 | 0.0828 | 0.0352 | 5.3000e-004 | | 6.6900e-003 | 6.6900e-003 | | 6.6900e-003 | 6.6900e-003 | 0.0000 | 95.8766 | 95.8766 | 1.8400e-003 | 1.7600e-003 | 96.4463 |
| Landscaping | 0.5329 | 0.2050 | 17.7871 | 9.4000e-004 | | 0.0989 | 0.0989 | | 0.0989 | 0.0989 | 0.0000 | 29.1364 | 29.1364 | 0.0278 | 0.0000 | 29.8314 |
| **Total** | **12.1966** | **0.2878** | **17.8224** | **1.4700e-003** | | **0.1056** | **0.1056** | | **0.1056** | **0.1056** | **0.0000** | **125.0129** | **125.0129** | **0.0296** | **1.7600e-003** | **126.2778** |

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.1556 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 9.1696 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 0.2826 | 0.1631 | 13.5127 | 6.1000e-004 | | 0.0738 | 0.0738 | | 0.0738 | 0.0738 | 0.0000 | 20.3839 | 20.3839 | 0.0146 | 0.0000 | 20.7477 |
| **Total** | **9.6078** | **0.1631** | **13.5127** | **6.1000e-004** | | **0.0738** | **0.0738** | | **0.0738** | **0.0738** | **0.0000** | **20.3839** | **20.3839** | **0.0146** | **0.0000** | **20.7477** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

Use Reclaimed Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Turf Reduction

Use Water Efficient Irrigation System

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 129.7103 | 4.2828 | 0.1043 | 267.8718 |
| Unmitigated | 165.4897 | 5.3541 | 0.1306 | 338.2493 |

## 7.2 Water by Land Use

### Unmitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| City Park | 0 / 134.042 | 31.0689 | 6.1700e-003 | 1.2800e-003 | 31.6037 |
| Condo/Townhouse High Rise | 31.2739 / 19.7162 | 25.6984 | 1.0222 | 0.0247 | 58.6171 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0.473145 / 0.289992 | 0.3869 | 0.0155 | 3.7000e-004 | 0.8849 |
| Retirement Community | 125.096 / 78.8647 | 102.7937 | 4.0888 | 0.0988 | 234.4683 |
| Strip Mall | 6.77764 / 4.15403 | 5.5418 | 0.2215 | 5.3500e-003 | 12.6754 |
| **Total** | | **165.4897** | **5.3541** | **0.1306** | **338.2493** |

### Mitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| City Park | 0 / 100.692 | 23.3390 | 4.6400e-003 | 9.6000e-004 | 23.7407 |
| Condo/Townhouse High Rise | 25.0191 / 14.8108 | 20.3357 | 0.8177 | 0.0198 | 46.6668 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0.378516 / 0.217842 | 0.3062 | 0.0124 | 3.0000e-004 | 0.7046 |
| Retirement Community | 100.077 / 59.2432 | 81.3429 | 3.2709 | 0.0790 | 186.6672 |

| | | | | | |
|---|---|---|---|---|---|
| Strip Mall | 5.42211 / 3.12051 | 4.3864 | 0.1772 | 4.2800e-003 | 10.0925 |
| **Total** | | **129.7103** | **4.2828** | **0.1043** | **267.8718** |

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 63.7229 | 3.7659 | 0.0000 | 157.8708 |
| Unmitigated | 254.8917 | 15.0637 | 0.0000 | 631.4834 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| City Park | 10 | 2.0299 | 0.1200 | 0.0000 | 5.0290 |
| Condo/Townhouse High Rise | 220.8 | 44.8204 | 2.6488 | 0.0000 | 111.0407 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

| | | | | | |
|---|---|---|---|---|---|
| Recreational Swimming Pool | 45.6 | 9.2564 | 0.5470 | 0.0000 | 22.9323 |
| Retirement Community | 883.2 | 179.2816 | 10.5952 | 0.0000 | 444.1626 |
| Strip Mall | 96.08 | 19.5034 | 1.1526 | 0.0000 | 48.3188 |
| **Total** | | **254.8917** | **15.0637** | **0.0000** | **631.4834** |

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| City Park | 2.5 | 0.5075 | 0.0300 | 0.0000 | 1.2573 |
| Condo/Townhouse High Rise | 55.2 | 11.2051 | 0.6622 | 0.0000 | 27.7602 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 11.4 | 2.3141 | 0.1368 | 0.0000 | 5.7331 |
| Retirement Community | 220.8 | 44.8204 | 2.6488 | 0.0000 | 111.0407 |
| Strip Mall | 24.02 | 4.8758 | 0.2882 | 0.0000 | 12.0797 |
| **Total** | | **63.7229** | **3.7659** | **0.0000** | **157.8708** |

## 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

**Boilers**

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

**User Defined Equipment**

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT | | | |
| Unmitigated | -2,542.9000 | 0.0000 | 0.0000 | -2,542.9000 |

## 11.1 Vegetation Land Change

**Vegetation Type**

| | Initial/Final | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| | Acres | MT | | | |
| Grassland | 815 / 225 | -2,542.9000 | 0.0000 | 0.0000 | -2,542.9000 |
| **Total** | | **-2,542.9000** | **0.0000** | **0.0000** | **-2,542.9000** |

## 11.2 Net New Trees

## Species Class

| | Number of Trees | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| | | MT | | | |
| Aspen | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

# Vineyards at Deer Creek
**Contra Costa County, Summer**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Parking Lot | 1,200.00 | Space | 10.80 | 480,000.00 | 0 |
| City Park | 225.00 | Acre | 225.00 | 9,801,000.00 | 0 |
| Recreational Swimming Pool | 8.00 | 1000sqft | 0.18 | 8,000.00 | 0 |
| Condo/Townhouse High Rise | 480.00 | Dwelling Unit | 7.50 | 480,000.00 | 1373 |
| Retirement Community | 1,920.00 | Dwelling Unit | 384.00 | 1,920,000.00 | 5491 |
| Strip Mall | 91.50 | 1000sqft | 2.10 | 91,500.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 58 |
| **Climate Zone** | 4 | | | **Operational Year** | 2033 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 146 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - Adjusted per PG&E 2018 CRSR

Land Use - Per PD
Parking assumed 2 spaces for multifamily housing (480 units), plus 10 extra spaces for each recreation area

Construction Phase - Operation Run only

Off-road Equipment -

Off-road Equipment - No demolition

Grading - Site balanced

Vehicle Trips - Per Fehr and Peers TIA 2019

Woodstoves - Per BAAQMD Regulation 6, Rule 3

Consumer Products -

Energy Use -

Water And Wastewater - City Park adjusted since it includes unirrigated open space

Solid Waste - City Park adjusted since primarily Open Space

Land Use Change -

Sequestration -

Construction Off-road Equipment Mitigation - Per BAAQMD basic control measure

Mobile Land Use Mitigation - Green building design elements include narrow roadways

Mobile Commute Mitigation - Per TDM program mitigation

Area Mitigation - Low VOC Paint throughout site, electric landscape equipment required, no hearths

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblAreaMitigation | UseLowVOCPaintNonresidentialExteriorValue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintNonresidentialInteriorValue | 100 | 10 |
| tblAreaMitigation | UseLowVOCPaintParkingCheck | False | True |
| tblAreaMitigation | UseLowVOCPaintParkingValue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintResidentialExteriorValue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintResidentialInteriorValue | 100 | 10 |
| tblConstDustMitigation | CleanPavedRoadPercentReduction | 0 | 6 |
| tblConstDustMitigation | WaterUnpavedRoadMoistureContent | 0 | 12 |
| tblConstDustMitigation | WaterUnpavedRoadVehicleSpeed | 0 | 15 |
| tblConstructionPhase | NumDays | 700.00 | 0.00 |
| tblFireplaces | NumberGas | 72.00 | 153.60 |
| tblFireplaces | NumberGas | 288.00 | 614.40 |
| tblFireplaces | NumberWood | 81.60 | 0.00 |

| | | | |
|---|---|---|---|
| tblFireplaces | NumberWood | 326.40 | 0.00 |
| tblProjectCharacteristics | CO2IntensityFactor | 641.35 | 146 |
| tblSolidWaste | SolidWasteGenerationRate | 19.35 | 10.00 |
| tblVehicleTrips | CC_TL | 7.30 | 15.60 |
| tblVehicleTrips | CNW_TL | 7.30 | 15.60 |
| tblVehicleTrips | CW_TL | 9.50 | 20.30 |
| tblVehicleTrips | HO_TL | 5.70 | 8.90 |
| tblVehicleTrips | HO_TL | 5.70 | 8.90 |
| tblVehicleTrips | HS_TL | 4.80 | 7.50 |
| tblVehicleTrips | HS_TL | 4.80 | 7.50 |
| tblVehicleTrips | HW_TL | 10.80 | 16.80 |
| tblVehicleTrips | HW_TL | 10.80 | 16.80 |
| tblVehicleTrips | ST_TR | 22.75 | 0.00 |
| tblVehicleTrips | ST_TR | 9.10 | 0.00 |
| tblVehicleTrips | ST_TR | 42.04 | 37.70 |
| tblVehicleTrips | SU_TR | 16.74 | 0.00 |
| tblVehicleTrips | SU_TR | 13.60 | 0.00 |
| tblVehicleTrips | WD_TR | 1.89 | 0.00 |
| tblVehicleTrips | WD_TR | 4.18 | 4.80 |
| tblVehicleTrips | WD_TR | 33.82 | 0.00 |
| tblVehicleTrips | WD_TR | 2.40 | 4.80 |
| tblVehicleTrips | WD_TR | 44.32 | 37.70 |
| tblWater | OutdoorWaterUseRate | 268,083,303.67 | 134,041,651.80 |
| tblWoodstoves | NumberCatalytic | 9.60 | 0.00 |
| tblWoodstoves | NumberCatalytic | 38.40 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 9.60 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 38.40 | 0.00 |

## 2.0 Emissions Summary

### 2.1 Overall Construction (Maximum Daily Emission)

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2028 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.8534 | 0.0000 | 0.0000 | 0.7925 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Maximum** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.8534** | **0.0000** | **0.0000** | **0.7925** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

**Mitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2028 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.8534 | 0.0000 | 0.0000 | 0.7925 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Maximum** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.8534** | **0.0000** | **0.0000** | **0.7925** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 2.2 Overall Operational

**Unmitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 71.5180 | 17.1410 | 203.9594 | 0.1053 | | 2.3003 | 2.3003 | | 2.3003 | 2.3003 | 0.0000 | 19,330.9768 | 19,330.9768 | 0.7042 | 0.3479 | 19,452.2440 |
| Energy | 0.7075 | 6.0494 | 2.5984 | 0.0386 | | 0.4888 | 0.4888 | | 0.4888 | 0.4888 | | 7,718.1573 | 7,718.1573 | 0.1479 | 0.1415 | 7,764.0224 |
| Mobile | 15.8893 | 65.9502 | 194.8367 | 0.9608 | 112.0459 | 0.4950 | 112.5409 | 29.9579 | 0.4603 | 30.4182 | | 97,418.7171 | 97,418.7171 | 2.4917 | | 97,481.0085 |
| **Total** | **88.1148** | **89.1406** | **401.3944** | **1.1048** | **112.0459** | **3.2841** | **115.3300** | **29.9579** | **3.2494** | **33.2073** | **0.0000** | **124,467.8512** | **124,467.8512** | **3.3438** | **0.4894** | **124,697.2749** |

## Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 54.2370 | 1.8118 | 150.1408 | 6.7900e-003 | | 0.8195 | 0.8195 | | 0.8195 | 0.8195 | 0.0000 | 249.6595 | 249.6595 | 0.1782 | 0.0000 | 254.1154 |
| Energy | 0.4511 | 3.8565 | 1.6524 | 0.0246 | | 0.3117 | 0.3117 | | 0.3117 | 0.3117 | | 4,921.0585 | 4,921.0585 | 0.0943 | 0.0902 | 4,950.3019 |
| Mobile | 13.5882 | 55.5044 | 136.1017 | 0.6477 | 73.4314 | 0.3429 | 73.7743 | 19.6335 | 0.3187 | 19.9522 | | 65,721.4641 | 65,721.4641 | 1.8013 | | 65,766.4973 |
| **Total** | **68.2763** | **61.1727** | **287.8948** | **0.6791** | **73.4314** | **1.4740** | **74.9054** | **19.6335** | **1.4498** | **21.0833** | **0.0000** | **70,892.1821** | **70,892.1821** | **2.0739** | **0.0902** | **70,970.9146** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **22.51** | **31.38** | **28.28** | **38.53** | **34.46** | **55.12** | **35.05** | **34.46** | **55.38** | **36.51** | **0.00** | **43.04** | **43.04** | **37.98** | **81.56** | **43.09** |

# 3.0 Construction Detail

## Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Demolition | Demolition | 12/29/2028 | 12/28/2028 | 5 | 0 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 10.8**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0**

**OffRoad Equipment**

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Demolition | Excavators | 3 | 8.00 | 158 | 0.38 |
| Demolition | Rubber Tired Dozers | 2 | 8.00 | 247 | 0.40 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Demolition | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

## 3.2 Demolition - 2028

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

Increase Diversity

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

Implement NEV Network

Expand Transit Network

Implement Trip Reduction Program

Transit Subsidy

Encourage Telecommuting and Alternative Work Schedules

Market Commute Trip Reduction Option

Employee Vanpool/Shuttle

Provide Riade Sharing Program

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 13.5882 | 55.5044 | 136.1017 | 0.6477 | 73.4314 | 0.3429 | 73.7743 | 19.6335 | 0.3187 | 19.9522 | | 65,721.4641 | 65,721.4641 | 1.8013 | | 65,766.4973 |
| Unmitigated | 15.8893 | 65.9502 | 194.8367 | 0.9608 | 112.0459 | 0.4950 | 112.5409 | 29.9579 | 0.4603 | 30.4182 | | 97,418.7171 | 97,418.7171 | 2.4917 | | 97,481.0085 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| City Park | 0.00 | 0.00 | 0.00 | | |
| Condo/Townhouse High Rise | 2,304.00 | 2,068.80 | 1646.40 | 7,834,257 | 5,164,899 |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Recreational Swimming Pool | 0.00 | 0.00 | 0.00 | | |
| Retirement Community | 9,216.00 | 3,897.60 | 3744.00 | 27,624,767 | 18,212,207 |
| Strip Mall | 3,449.55 | 3,449.55 | 1869.35 | 10,589,482 | 6,788,808 |
| Total | 14,969.55 | 9,415.95 | 7,259.75 | 46,048,506 | 30,165,913 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C- | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| City Park | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 66 | 28 | 6 |
| Condo/Townhouse High Rise | 16.80 | 7.50 | 8.90 | 31.00 | 15.00 | 54.00 | 86 | 11 | 3 |
| Parking Lot | 9.50 | 7.30 | 7.30 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Recreational Swimming Pool | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 52 | 39 | 9 |
| Retirement Community | 16.80 | 7.50 | 8.90 | 31.00 | 15.00 | 54.00 | 86 | 11 | 3 |
| Strip Mall | 20.30 | 15.60 | 15.60 | 16.60 | 64.40 | 19.00 | 45 | 40 | 15 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| City Park | 0.608861 | 0.034484 | 0.184220 | 0.107205 | 0.011406 | 0.004825 | 0.010903 | 0.026628 | 0.001670 | 0.001490 | 0.005061 | 0.002613 | 0.000633 |
| Condo/Townhouse High Rise | 0.608861 | 0.034484 | 0.184220 | 0.107205 | 0.011406 | 0.004825 | 0.010903 | 0.026628 | 0.001670 | 0.001490 | 0.005061 | 0.002613 | 0.000633 |
| Parking Lot | 0.608861 | 0.034484 | 0.184220 | 0.107205 | 0.011406 | 0.004825 | 0.010903 | 0.026628 | 0.001670 | 0.001490 | 0.005061 | 0.002613 | 0.000633 |
| Recreational Swimming Pool | 0.608861 | 0.034484 | 0.184220 | 0.107205 | 0.011406 | 0.004825 | 0.010903 | 0.026628 | 0.001670 | 0.001490 | 0.005061 | 0.002613 | 0.000633 |
| Retirement Community | 0.608861 | 0.034484 | 0.184220 | 0.107205 | 0.011406 | 0.004825 | 0.010903 | 0.026628 | 0.001670 | 0.001490 | 0.005061 | 0.002613 | 0.000633 |
| Strip Mall | 0.608861 | 0.034484 | 0.184220 | 0.107205 | 0.011406 | 0.004825 | 0.010903 | 0.026628 | 0.001670 | 0.001490 | 0.005061 | 0.002613 | 0.000633 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Percent of Electricity Use Generated with Renewable Energy

Install Energy Efficient Appliances

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.4511 | 3.8565 | 1.6524 | 0.0246 | | 0.3117 | 0.3117 | | 0.3117 | 0.3117 | | 4,921.0585 | 4,921.0585 | 0.0943 | 0.0902 | 4,950.3019 |
| NaturalGas Unmitigated | 0.7075 | 6.0494 | 2.5984 | 0.0386 | | 0.4888 | 0.4888 | | 0.4888 | 0.4888 | | 7,718.1573 | 7,718.1573 | 0.1479 | 0.1415 | 7,764.0224 |

### 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | | lb/day | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Condo/Townhouse High Rise | 11361.5 | 0.1225 | 1.0470 | 0.4456 | 6.6800e-003 | | 0.0847 | 0.0847 | | 0.0847 | 0.0847 | | 1,336.6434 | 1,336.6434 | 0.0256 | 0.0245 | 1,344.5864 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Retirement Community | 53648.7 | 0.5786 | 4.9441 | 2.1039 | 0.0316 | | 0.3997 | 0.3997 | | 0.3997 | 0.3997 | | 6,311.6171 | 6,311.6171 | 0.1210 | 0.1157 | 6,349.1239 |
| Strip Mall | 594.123 | 6.4100e-003 | 0.0583 | 0.0489 | 3.5000e-004 | | 4.4300e-003 | 4.4300e-003 | | 4.4300e-003 | 4.4300e-003 | | 69.8969 | 69.8969 | 1.3400e-003 | 1.2800e-003 | 70.3122 |
| **Total** | | **0.7075** | **6.0494** | **2.5984** | **0.0386** | | **0.4888** | **0.4888** | | **0.4888** | **0.4888** | | **7,718.1573** | **7,718.1573** | **0.1479** | **0.1415** | **7,764.0225** |

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | | lb/day | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Condo/Townhouse High Rise | 7.53888 | 0.0813 | 0.6948 | 0.2956 | 4.4300e-003 | | 0.0562 | 0.0562 | | 0.0562 | 0.0562 | | 886.9273 | 886.9273 | 0.0170 | 0.0163 | 892.1979 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Retirement Community | 34.0109 | 0.3668 | 3.1343 | 1.3338 | 0.0200 | | 0.2534 | 0.2534 | | 0.2534 | 0.2534 | | 4,001.2797 | 4,001.2797 | 0.0767 | 0.0734 | 4,025.0573 |
| Strip Mall | 0.279238 | 3.0100e-003 | 0.0274 | 0.0230 | 1.6000e-004 | | 2.0800e-003 | 2.0800e-003 | | 2.0800e-003 | 2.0800e-003 | | 32.8515 | 32.8515 | 6.3000e-004 | 6.0000e-004 | 33.0467 |
| **Total** | | **0.4511** | **3.8565** | **1.6524** | **0.0246** | | **0.3117** | **0.3117** | | **0.3117** | **0.3117** | | **4,921.0585** | **4,921.0585** | **0.0943** | **0.0902** | **4,950.3019** |

## 6.0 Area Detail

## 6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

Use Low VOC Cleaning Supplies

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 54.2370 | 1.8118 | 150.1408 | 6.7900e-003 | | 0.8195 | 0.8195 | | 0.8195 | 0.8195 | 0.0000 | 249.6595 | 249.6595 | 0.1782 | 0.0000 | 254.1154 |
| Unmitigated | 71.5180 | 17.1410 | 203.9594 | 0.1053 | | 2.3003 | 2.3003 | | 2.3003 | 2.3003 | 0.0000 | 19,330.9768 | 19,330.9768 | 0.7042 | 0.3479 | 19,452.2440 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 9.6079 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Consumer Products | 54.2499 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 1.7393 | 14.8631 | 6.3247 | 0.0949 | | 1.2017 | 1.2017 | | 1.2017 | 1.2017 | 0.0000 | 18,974.1177 | 18,974.1177 | 0.3637 | 0.3479 | 19,086.8713 |
| Landscaping | 5.9209 | 2.2780 | 197.6347 | 0.0105 | | 1.0986 | 1.0986 | | 1.0986 | 1.0986 | | 356.8592 | 356.8592 | 0.3405 | | 365.3726 |
| **Total** | **71.5180** | **17.1410** | **203.9594** | **0.1053** | | **2.3003** | **2.3003** | | **2.3003** | **2.3003** | **0.0000** | **19,330.9768** | **19,330.9768** | **0.7042** | **0.3479** | **19,452.2440** |

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.8528 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 50.2443 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 3.1400 | 1.8118 | 150.1408 | 6.7900e-003 | | 0.8195 | 0.8195 | | 0.8195 | 0.8195 | | 249.6595 | 249.6595 | 0.1782 | | 254.1154 |
| **Total** | **54.2370** | **1.8118** | **150.1408** | **6.7900e-003** | | **0.8195** | **0.8195** | | **0.8195** | **0.8195** | **0.0000** | **249.6595** | **249.6595** | **0.1782** | **0.0000** | **254.1154** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

Use Reclaimed Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Turf Reduction

Use Water Efficient Irrigation System

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

## 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

**Boilers**

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

**User Defined Equipment**

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

# Vineyards at Deer Creek
**Contra Costa County, Winter**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Parking Lot | 1,200.00 | Space | 10.80 | 480,000.00 | 0 |
| City Park | 225.00 | Acre | 225.00 | 9,801,000.00 | 0 |
| Recreational Swimming Pool | 8.00 | 1000sqft | 0.18 | 8,000.00 | 0 |
| Condo/Townhouse High Rise | 480.00 | Dwelling Unit | 7.50 | 480,000.00 | 1373 |
| Retirement Community | 1,920.00 | Dwelling Unit | 384.00 | 1,920,000.00 | 5491 |
| Strip Mall | 91.50 | 1000sqft | 2.10 | 91,500.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 58 |
| **Climate Zone** | 4 | | | **Operational Year** | 2033 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 146 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - Adjusted per PG&E 2018 CRSR

Land Use - Per PD
Parking assumed 2 spaces for multifamily housing (480 units), plus 10 extra spaces for each recreation area

Construction Phase - Operation Run only

Off-road Equipment -

Off-road Equipment - No demolition

Grading - Site balanced

Vehicle Trips - Per Fehr and Peers TIA 2019

Woodstoves - Per BAAQMD Regulation 6, Rule 3

Consumer Products -

Energy Use -

Water And Wastewater - City Park adjusted since it includes unirrigated open space

Solid Waste - City Park adjusted since primarily Open Space

Land Use Change -

Sequestration -

Construction Off-road Equipment Mitigation - Per BAAQMD basic control measure

Mobile Land Use Mitigation - Green building design elements include narrow roadways

Mobile Commute Mitigation - Per TDM program mitigation

Area Mitigation - Low VOC Paint throughout site, electric landscape equipment required, no hearths

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblAreaMitigation | UseLowVOCPaintNonresidentialExteriorValue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintNonresidentialInteriorValue | 100 | 10 |
| tblAreaMitigation | UseLowVOCPaintParkingCheck | False | True |
| tblAreaMitigation | UseLowVOCPaintParkingValue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintResidentialExteriorValue | 150 | 10 |
| tblAreaMitigation | UseLowVOCPaintResidentialInteriorValue | 100 | 10 |
| tblConstDustMitigation | CleanPavedRoadPercentReduction | 0 | 6 |
| tblConstDustMitigation | WaterUnpavedRoadMoistureContent | 0 | 12 |
| tblConstDustMitigation | WaterUnpavedRoadVehicleSpeed | 0 | 15 |
| tblConstructionPhase | NumDays | 700.00 | 0.00 |
| tblFireplaces | NumberGas | 72.00 | 153.60 |
| tblFireplaces | NumberGas | 288.00 | 614.40 |
| tblFireplaces | NumberWood | 81.60 | 0.00 |

| | | | |
|---|---|---|---|
| tblFireplaces | NumberWood | 326.40 | 0.00 |
| tblProjectCharacteristics | CO2IntensityFactor | 641.35 | 146 |
| tblSolidWaste | SolidWasteGenerationRate | 19.35 | 10.00 |
| tblVehicleTrips | CC_TL | 7.30 | 15.60 |
| tblVehicleTrips | CNW_TL | 7.30 | 15.60 |
| tblVehicleTrips | CW_TL | 9.50 | 20.30 |
| tblVehicleTrips | HO_TL | 5.70 | 8.90 |
| tblVehicleTrips | HO_TL | 5.70 | 8.90 |
| tblVehicleTrips | HS_TL | 4.80 | 7.50 |
| tblVehicleTrips | HS_TL | 4.80 | 7.50 |
| tblVehicleTrips | HW_TL | 10.80 | 16.80 |
| tblVehicleTrips | HW_TL | 10.80 | 16.80 |
| tblVehicleTrips | ST_TR | 22.75 | 0.00 |
| tblVehicleTrips | ST_TR | 9.10 | 0.00 |
| tblVehicleTrips | ST_TR | 42.04 | 37.70 |
| tblVehicleTrips | SU_TR | 16.74 | 0.00 |
| tblVehicleTrips | SU_TR | 13.60 | 0.00 |
| tblVehicleTrips | WD_TR | 1.89 | 0.00 |
| tblVehicleTrips | WD_TR | 4.18 | 4.80 |
| tblVehicleTrips | WD_TR | 33.82 | 0.00 |
| tblVehicleTrips | WD_TR | 2.40 | 4.80 |
| tblVehicleTrips | WD_TR | 44.32 | 37.70 |
| tblWater | OutdoorWaterUseRate | 268,083,303.67 | 134,041,651.80 |
| tblWoodstoves | NumberCatalytic | 9.60 | 0.00 |
| tblWoodstoves | NumberCatalytic | 38.40 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 9.60 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 38.40 | 0.00 |

## 2.0 Emissions Summary

### 2.1 Overall Construction (Maximum Daily Emission)

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2028 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.8534 | 0.0000 | 0.0000 | 0.7925 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Maximum** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.8534** | **0.0000** | **0.0000** | **0.7925** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

**Mitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2028 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.8534 | 0.0000 | 0.0000 | 0.7925 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Maximum** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.8534** | **0.0000** | **0.0000** | **0.7925** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 2.2 Overall Operational

**Unmitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 71.5180 | 17.1410 | 203.9594 | 0.1053 | | 2.3003 | 2.3003 | | 2.3003 | 2.3003 | 0.0000 | 19,330.9768 | 19,330.9768 | 0.7042 | 0.3479 | 19,452.2440 |
| Energy | 0.7075 | 6.0494 | 2.5984 | 0.0386 | | 0.4888 | 0.4888 | | 0.4888 | 0.4888 | | 7,718.1573 | 7,718.1573 | 0.1479 | 0.1415 | 7,764.0224 |
| Mobile | 13.1635 | 68.8127 | 183.9598 | 0.8898 | 112.0459 | 0.4960 | 112.5418 | 29.9579 | 0.4612 | 30.4191 | | 90,292.9611 | 90,292.9611 | 2.5142 | | 90,355.8159 |
| **Total** | **85.3890** | **92.0031** | **390.5175** | **1.0338** | **112.0459** | **3.2851** | **115.3309** | **29.9579** | **3.2503** | **33.2082** | **0.0000** | **117,342.0952** | **117,342.0952** | **3.3663** | **0.4894** | **117,572.0824** |

## Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 54.2370 | 1.8118 | 150.1408 | 6.7900e-003 | | 0.8195 | 0.8195 | | 0.8195 | 0.8195 | 0.0000 | 249.6595 | 249.6595 | 0.1782 | 0.0000 | 254.1154 |
| Energy | 0.4511 | 3.8565 | 1.6524 | 0.0246 | | 0.3117 | 0.3117 | | 0.3117 | 0.3117 | | 4,921.0585 | 4,921.0585 | 0.0943 | 0.0902 | 4,950.3019 |
| Mobile | 10.8725 | 57.2097 | 132.7775 | 0.5996 | 73.4314 | 0.3438 | 73.7752 | 19.6335 | 0.3196 | 19.9531 | | 60,872.1406 | 60,872.1406 | 1.8444 | | 60,918.2506 |
| **Total** | **65.5606** | **62.8780** | **284.5707** | **0.6310** | **73.4314** | **1.4750** | **74.9064** | **19.6335** | **1.4507** | **21.0842** | **0.0000** | **66,042.8586** | **66,042.8586** | **2.1170** | **0.0902** | **66,122.6679** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **23.22** | **31.66** | **27.13** | **38.96** | **34.46** | **55.10** | **35.05** | **34.46** | **55.37** | **36.51** | **0.00** | **43.72** | **43.72** | **37.11** | **81.56** | **43.76** |

# 3.0 Construction Detail

## Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Demolition | Demolition | 12/29/2028 | 12/28/2028 | 5 | 0 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 10.8**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0**

**OffRoad Equipment**

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Demolition | Excavators | 3 | 8.00 | 158 | 0.38 |
| Demolition | Rubber Tired Dozers | 2 | 8.00 | 247 | 0.40 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Demolition | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

## 3.2 Demolition - 2028

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

Increase Diversity

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

Implement NEV Network

Expand Transit Network

Implement Trip Reduction Program

Transit Subsidy

Encourage Telecommuting and Alternative Work Schedules

Market Commute Trip Reduction Option

Employee Vanpool/Shuttle

Provide Riade Sharing Program

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 10.8725 | 57.2097 | 132.7775 | 0.5996 | 73.4314 | 0.3438 | 73.7752 | 19.6335 | 0.3196 | 19.9531 | | 60,872.1406 | 60,872.1406 | 1.8444 | | 60,918.2506 |
| Unmitigated | 13.1635 | 68.8127 | 183.9598 | 0.8898 | 112.0459 | 0.4960 | 112.5418 | 29.9579 | 0.4612 | 30.4191 | | 90,292.9611 | 90,292.9611 | 2.5142 | | 90,355.8159 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| City Park | 0.00 | 0.00 | 0.00 | | |
| Condo/Townhouse High Rise | 2,304.00 | 2,068.80 | 1646.40 | 7,834,257 | 5,164,899 |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Recreational Swimming Pool | 0.00 | 0.00 | 0.00 | | |
| Retirement Community | 9,216.00 | 3,897.60 | 3744.00 | 27,624,767 | 18,212,207 |
| Strip Mall | 3,449.55 | 3,449.55 | 1869.35 | 10,589,482 | 6,788,808 |
| Total | 14,969.55 | 9,415.95 | 7,259.75 | 46,048,506 | 30,165,913 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C- | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| City Park | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 66 | 28 | 6 |
| Condo/Townhouse High Rise | 16.80 | 7.50 | 8.90 | 31.00 | 15.00 | 54.00 | 86 | 11 | 3 |
| Parking Lot | 9.50 | 7.30 | 7.30 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Recreational Swimming Pool | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 52 | 39 | 9 |
| Retirement Community | 16.80 | 7.50 | 8.90 | 31.00 | 15.00 | 54.00 | 86 | 11 | 3 |
| Strip Mall | 20.30 | 15.60 | 15.60 | 16.60 | 64.40 | 19.00 | 45 | 40 | 15 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| City Park | 0.608861 | 0.034484 | 0.184220 | 0.107205 | 0.011406 | 0.004825 | 0.010903 | 0.026628 | 0.001670 | 0.001490 | 0.005061 | 0.002613 | 0.000633 |
| Condo/Townhouse High Rise | 0.608861 | 0.034484 | 0.184220 | 0.107205 | 0.011406 | 0.004825 | 0.010903 | 0.026628 | 0.001670 | 0.001490 | 0.005061 | 0.002613 | 0.000633 |
| Parking Lot | 0.608861 | 0.034484 | 0.184220 | 0.107205 | 0.011406 | 0.004825 | 0.010903 | 0.026628 | 0.001670 | 0.001490 | 0.005061 | 0.002613 | 0.000633 |
| Recreational Swimming Pool | 0.608861 | 0.034484 | 0.184220 | 0.107205 | 0.011406 | 0.004825 | 0.010903 | 0.026628 | 0.001670 | 0.001490 | 0.005061 | 0.002613 | 0.000633 |
| Retirement Community | 0.608861 | 0.034484 | 0.184220 | 0.107205 | 0.011406 | 0.004825 | 0.010903 | 0.026628 | 0.001670 | 0.001490 | 0.005061 | 0.002613 | 0.000633 |
| Strip Mall | 0.608861 | 0.034484 | 0.184220 | 0.107205 | 0.011406 | 0.004825 | 0.010903 | 0.026628 | 0.001670 | 0.001490 | 0.005061 | 0.002613 | 0.000633 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Percent of Electricity Use Generated with Renewable Energy

Install Energy Efficient Appliances

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.4511 | 3.8565 | 1.6524 | 0.0246 | | 0.3117 | 0.3117 | | 0.3117 | 0.3117 | | 4,921.0585 | 4,921.0585 | 0.0943 | 0.0902 | 4,950.3019 |
| NaturalGas Unmitigated | 0.7075 | 6.0494 | 2.5984 | 0.0386 | | 0.4888 | 0.4888 | | 0.4888 | 0.4888 | | 7,718.1573 | 7,718.1573 | 0.1479 | 0.1415 | 7,764.0224 |

### 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | | lb/day | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Condo/Townhouse High Rise | 11361.5 | 0.1225 | 1.0470 | 0.4456 | 6.6800e-003 | | 0.0847 | 0.0847 | | 0.0847 | 0.0847 | | 1,336.6434 | 1,336.6434 | 0.0256 | 0.0245 | 1,344.5864 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Retirement Community | 53648.7 | 0.5786 | 4.9441 | 2.1039 | 0.0316 | | 0.3997 | 0.3997 | | 0.3997 | 0.3997 | | 6,311.6171 | 6,311.6171 | 0.1210 | 0.1157 | 6,349.1239 |
| Strip Mall | 594.123 | 6.4100e-003 | 0.0583 | 0.0489 | 3.5000e-004 | | 4.4300e-003 | 4.4300e-003 | | 4.4300e-003 | 4.4300e-003 | | 69.8969 | 69.8969 | 1.3400e-003 | 1.2800e-003 | 70.3122 |
| **Total** | | **0.7075** | **6.0494** | **2.5984** | **0.0386** | | **0.4888** | **0.4888** | | **0.4888** | **0.4888** | | **7,718.1573** | **7,718.1573** | **0.1479** | **0.1415** | **7,764.0225** |

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | | lb/day | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Condo/Townhouse High Rise | 7.53888 | 0.0813 | 0.6948 | 0.2956 | 4.4300e-003 | | 0.0562 | 0.0562 | | 0.0562 | 0.0562 | | 886.9273 | 886.9273 | 0.0170 | 0.0163 | 892.1979 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Recreational Swimming Pool | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Retirement Community | 34.0109 | 0.3668 | 3.1343 | 1.3338 | 0.0200 | | 0.2534 | 0.2534 | | 0.2534 | 0.2534 | | 4,001.2797 | 4,001.2797 | 0.0767 | 0.0734 | 4,025.0573 |
| Strip Mall | 0.279238 | 3.0100e-003 | 0.0274 | 0.0230 | 1.6000e-004 | | 2.0800e-003 | 2.0800e-003 | | 2.0800e-003 | 2.0800e-003 | | 32.8515 | 32.8515 | 6.3000e-004 | 6.0000e-004 | 33.0467 |
| **Total** | | **0.4511** | **3.8565** | **1.6524** | **0.0246** | | **0.3117** | **0.3117** | | **0.3117** | **0.3117** | | **4,921.0585** | **4,921.0585** | **0.0943** | **0.0902** | **4,950.3019** |

## 6.0 Area Detail

## 6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

Use Low VOC Cleaning Supplies

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 54.2370 | 1.8118 | 150.1408 | 6.7900e-003 | | 0.8195 | 0.8195 | | 0.8195 | 0.8195 | 0.0000 | 249.6595 | 249.6595 | 0.1782 | 0.0000 | 254.1154 |
| Unmitigated | 71.5180 | 17.1410 | 203.9594 | 0.1053 | | 2.3003 | 2.3003 | | 2.3003 | 2.3003 | 0.0000 | 19,330.9768 | 19,330.9768 | 0.7042 | 0.3479 | 19,452.2440 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 9.6079 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Consumer Products | 54.2499 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 1.7393 | 14.8631 | 6.3247 | 0.0949 | | 1.2017 | 1.2017 | | 1.2017 | 1.2017 | 0.0000 | 18,974.1177 | 18,974.1177 | 0.3637 | 0.3479 | 19,086.8713 |
| Landscaping | 5.9209 | 2.2780 | 197.6347 | 0.0105 | | 1.0986 | 1.0986 | | 1.0986 | 1.0986 | | 356.8592 | 356.8592 | 0.3405 | | 365.3726 |
| **Total** | **71.5180** | **17.1410** | **203.9594** | **0.1053** | | **2.3003** | **2.3003** | | **2.3003** | **2.3003** | **0.0000** | **19,330.9768** | **19,330.9768** | **0.7042** | **0.3479** | **19,452.2440** |

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.8528 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 50.2443 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 3.1400 | 1.8118 | 150.1408 | 6.7900e-003 | | 0.8195 | 0.8195 | | 0.8195 | 0.8195 | | 249.6595 | 249.6595 | 0.1782 | | 254.1154 |
| **Total** | **54.2370** | **1.8118** | **150.1408** | **6.7900e-003** | | **0.8195** | **0.8195** | | **0.8195** | **0.8195** | **0.0000** | **249.6595** | **249.6595** | **0.1782** | **0.0000** | **254.1154** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

Use Reclaimed Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Turf Reduction

Use Water Efficient Irrigation System

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

## 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

**Boilers**

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

**User Defined Equipment**

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

# Vineyards at Deer Creek

## Contra Costa County, Mitigation Report

## Construction Mitigation Summary

| Phase | ROG | NOx | CO | SO2 | Exhaust PM10 | Exhaust PM2.5 | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Reduction | | | | | | | | | | | | |
| Demolition | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## OFFROAD Equipment Mitigation

| Equipment Type | Fuel Type | Tier | Number Mitigated | Total Number of Equipment | DPF | Oxidation Catalyst |
|---|---|---|---|---|---|---|
| Concrete/Industrial Saws | Diesel | No Change | 0 | 1 | No Change | 0.00 |
| Excavators | Diesel | No Change | 0 | 3 | No Change | 0.00 |
| Rubber Tired Dozers | Diesel | No Change | 0 | 2 | No Change | 0.00 |

| Equipment Type | ROG | NOx | CO | SO2 | Exhaust PM10 | Exhaust PM2.5 | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Unmitigated tons/yr | | | | | | Unmitigated mt/yr | | | | | |
| Concrete/Industrial Saws | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 |
| Excavators | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 |
| Rubber Tired Dozers | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 |

| Equipment Type | ROG | NOx | CO | SO2 | Exhaust PM10 | Exhaust PM2.5 | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|

| | Mitigated tons/yr | | | | | | Mitigated mt/yr | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Concrete/Industrial Saws | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 |
| Excavators | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 |
| Rubber Tired Dozers | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 |

| Equipment Type | ROG | NOx | CO | SO2 | Exhaust PM10 | Exhaust PM2.5 | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Percent Reduction | | | | | | | | | | | |
| Concrete/Industrial Saws | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 |
| Excavators | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 |
| Rubber Tired Dozers | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 |

## Fugitive Dust Mitigation

| Yes/No | Mitigation Measure | Mitigation Input | | Mitigation Input | | Mitigation Input | |
|---|---|---|---|---|---|---|---|
| No | Soil Stabilizer for unpaved Roads | PM10 Reduction | 0.00 | PM2.5 Reduction | 0.00 | | |
| Yes | Replace Ground Cover of Area Disturbed | PM10 Reduction | 5.00 | PM2.5 Reduction | 5.00 | | |
| Yes | Water Exposed Area | PM10 Reduction | 55.00 | PM2.5 Reduction | 55.00 | Frequency (per day) | 2.00 |
| Yes | Unpaved Road Mitigation | Moisture Content % | 12.00 | Vehicle Speed (mph) | 15.00 | | |
| Yes | Clean Paved Road | % PM Reduction | 6.00 | | | | |

| | | Unmitigated | | Mitigated | | Percent Reduction | |
|---|---|---|---|---|---|---|---|
| Phase | Source | PM10 | PM2.5 | PM10 | PM2.5 | PM10 | PM2.5 |
| Demolition | Fugitive Dust | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Demolition | Roads | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## Operational Percent Reduction Summary

| Category | ROG | NOx | CO | SO2 | Exhaust PM10 | Exhaust PM2.5 | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Reduction | | | | | | | | | | | | |
| Architectural Coating | 91.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Consumer Products | 7.38 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Electricity | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Hearth | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 0.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Landscaping | 46.97 | 20.47 | 24.03 | 35.11 | 25.41 | 25.41 | 0.00 | 30.04 | 30.04 | 47.66 | 0.00 | 30.45 |
| Mobile | 16.78 | 16.41 | 28.62 | 32.56 | 30.73 | 30.76 | 0.00 | 32.52 | 32.52 | 27.08 | 0.00 | 32.51 |
| Natural Gas | 36.24 | 36.25 | 36.41 | 36.22 | 36.24 | 36.24 | 0.00 | 36.24 | 36.24 | 36.26 | 36.24 | 36.24 |
| Water Indoor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 20.00 | 22.36 | 21.62 | 20.01 | 20.08 | 20.81 |
| Water Outdoor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## Operational Mobile Mitigation

Project Setting:

| Mitigation | Category | Measure | % Reduction | Input Value 1 | Input Value 2 | Input Value 3 |
|---|---|---|---|---|---|---|
| No | Land Use | Increase Density | 0.00 | 0.00 | 0.00 | |
| Yes | Land Use | Increase Diversity | 0.14 | 0.39 | | |
| No | Land Use | Improve Walkability Design | 0.00 | 0.00 | | |
| No | Land Use | Improve Destination Accessibility | 0.00 | 0.00 | | |
| Yes | Land Use | Increase Transit Accessibility | 0.06 | 1.00 | | |
| No | Land Use | Integrate Below Market Rate Housing | 0.00 | 0.00 | | |
| | Land Use | Land Use SubTotal | 0.20 | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Yes | Neighborhood Enhancements | Improve Pedestrian Network | 2.00 | Project Site and Connecting Off-Site | | |
| Yes | Neighborhood Enhancements | Provide Traffic Calming Measures | 0.50 | 75.00 | 50.00 | |
| Yes | Neighborhood Enhancements | Implement NEV Network | 0.01 | | | |
| | Neighborhood Enhancements | Neighborhood Enhancements Subtotal | 0.15 | | | |
| Yes | Parking Policy Pricing | Limit Parking Supply | 0.00 | 0.00 | | |
| No | Parking Policy Pricing | Unbundle Parking Costs | 0.00 | 0.00 | | |
| No | Parking Policy Pricing | On-street Market Pricing | 0.00 | 0.00 | | |
| | Parking Policy Pricing | Parking Policy Pricing Subtotal | 0.00 | | | |
| No | Transit Improvements | Provide BRT System | 0.00 | 0.00 | | |
| Yes | Transit Improvements | Expand Transit Network | 0.00 | 2.00 | | |
| No | Transit Improvements | Increase Transit Frequency | 0.00 | | 0.00 | |
| | Transit Improvements | Transit Improvements Subtotal | 0.00 | | | |
| | | Land Use and Site Enhancement Subtotal | 0.32 | | | |
| Yes | Commute | Implement Trip Reduction Program | | 100.00 | Required | |
| Yes | Commute | Transit Subsidy | | 100.00 | $1.49 | |
| No | Commute | Implement Employee Parking "Cash Out" | | 0.00 | | |
| No | Commute | Workplace Parking Charge | | 0.00 | | |
| Yes | Commute | Encourage Telecommuting and Alternative Work Schedules | 4.40 | 2.20 | 2.20 | |
| Yes | Commute | Market Commute Trip Reduction Option | 0.02 | 50.00 | | |
| Yes | Commute | Employee Vanpool/Shuttle | 0.01 | 100.00 | 2.00 | |
| Yes | Commute | Provide Ride Sharing Program | | 100.00 | | |
| | Commute | Commute Subtotal | 0.08 | | | |
| No | School Trip | Implement School Bus Program | 0.00 | 0.00 | | |
| | | Total VMT Reduction | 0.37 | | | |

## Area Mitigation

| Measure Implemented | Mitigation Measure | Input Value |
|---|---|---|
| No | Only Natural Gas Hearth | |
| Yes | No Hearth | |
| Yes | Use Low VOC Cleaning Supplies | |
| Yes | Use Low VOC Paint (Residential Interior) | 10.00 |
| Yes | Use Low VOC Paint (Residential Exterior) | 10.00 |
| Yes | Use Low VOC Paint (Non-residential Interior) | 10.00 |
| Yes | Use Low VOC Paint (Non-residential Exterior) | 10.00 |
| Yes | Use Low VOC Paint (Parking) | 10.00 |
| Yes | % Electric Lawnmower | 100.00 |
| Yes | % Electric Leafblower | 100.00 |
| Yes | % Electric Chainsaw | 100.00 |

## Energy Mitigation Measures

| Measure Implemented | Mitigation Measure | Input Value 1 | Input Value 2 |
|---|---|---|---|
| Yes | Exceed Title 24 | 53.00 | |
| Yes | Install High Efficiency Lighting | 75.00 | |
| Yes | On-site Renewable | 0.00 | 100.00 |

| Appliance Type | Land Use Subtype | % Improvement |
|---|---|---|
| ClothWasher | Condo/Townhouse High Ri... | 30.00 |
| ClothWasher | Retirement Community | 30.00 |
| DishWasher | Condo/Townhouse High Ri... | 15.00 |
| DishWasher | Retirement Community | 15.00 |

| | | |
|---|---|---|
| DishWasher | Strip Mall | 15.00 |
| Fan | Condo/Townhouse High Ri | 50.00 |
| Fan | Retirement Community | 50.00 |
| Fan | Strip Mall | 50.00 |
| Refrigerator | Condo/Townhouse High Ri | 15.00 |
| Refrigerator | Retirement Community | 15.00 |
| Refrigerator | Strip Mall | 15.00 |

**Water Mitigation Measures**

| Measure Implemented | Mitigation Measure | Input Value 1 | Input Value 2 |
|---|---|---|---|
| No | Apply Water Conservation on Strategy | 0.00 | 0.00 |
| Yes | Use Reclaimed Water | 0.00 | 50.00 |
| No | Use Grey Water | 0.00 | |
| Yes | Install low-flow bathroom faucet | 32.00 | |
| Yes | Install low-flow Kitchen faucet | 18.00 | |
| Yes | Install low-flow Toilet | 20.00 | |
| Yes | Install low-flow Shower | 20.00 | |
| Yes | Turf Reduction | 75.00 | |
| Yes | Use Water Efficient Irrigation Systems | 6.10 | |
| No | Water Efficient Landscape | 0.00 | 0.00 |

**Solid Waste Mitigation**

| Mitigation Measures | Input Value |
|---|---|

| | |
|---|---|
| Institute Recycling and Composting Services<br>Percent Reduction in Waste Disposed | 75.00 |

AERSCREEN 16216 / AERMOD 18081 03/08/19
14:27:04

TITLE: VDC-CONSTRUCTION

---

********** VOLUME PARAMETERS **********

---

| | | |
|---|---|---|
| SOURCE EMISSION RATE: | 0.206E-02 g/s | 0.163E-01 lb/hr |
| VOLUME HEIGHT: | 5.00 meters | 16.40 feet |
| INITIAL LATERAL DIMENSION: | 981.00 meters | 3218.50 feet |
| INITIAL VERTICAL DIMENSION: | 877.00 meters | 2877.30 feet |
| RURAL OR URBAN: | URBAN | |
| POPULATION: | 1147000 | |

INITIAL PROBE DISTANCE = 5000. meters 16404. feet

---

********** BUILDING DOWNWASH PARAMETERS **********

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BUILDING DOWNWASH NOT USED FOR NON-POINT SOURCES

********** PROBE ANALYSIS **********

25 meter receptor spacing: 4271. meters - 5000. meters

| Zo SECTOR | ROUGHNESS LENGTH | 1-HR CONC (ug/m3) | DIST (m) | TEMPORAL PERIOD |
|---|---|---|---|---|
| 1* | 1.000 | 0.1137E-02 | 4270.9 | ANN |

* = worst case flow sector

---

********** MAKEMET METEOROLOGY PARAMETERS **********

---

MIN/MAX TEMPERATURE: 276.0 / 306.0 (K)

MINIMUM WIND SPEED: 0.5 m/s

ANEMOMETER HEIGHT: 10.000 meters

SURFACE CHARACTERISTICS INPUT: USER ENTERED

ALBEDO: 0.21
BOWEN RATIO: 1.63
ROUGHNESS LENGTH: 1.000 (meters)

SURFACE FRICTION VELOCITY (U*) NOT ADUSTED

METEOROLOGY CONDITIONS USED TO PREDICT OVERALL MAXIMUM IMPACT

| YR | MO | DY | JDY | HR |
|---|---|---|---|---|
| 10 | 01 | 02 | 2 | 12 |

| H0 | U* | W* | DT/DZ | ZICNV | ZIMCH | M-O LEN | Z0 | BOWEN | ALBEDO | REF WS |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.54 | 0.102 | 0.300 | 0.020 | 596. | 75. | -59.4 | 1.000 | 1.63 | 0.21 | 0.50 |

| HT | REF TA | HT |
|---|---|---|
| 10.0 | 276.0 | 2.0 |

METEOROLOGY CONDITIONS USED TO PREDICT AMBIENT BOUNDARY IMPACT

| YR | MO | DY | JDY | HR |
|---|---|---|---|---|
| 10 | 01 | 02 | 2 | 12 |

| H0 | U* | W* | DT/DZ | ZICNV | ZIMCH | M-O LEN | Z0 | BOWEN | ALBEDO | REF WS |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.54 | 0.102 | 0.300 | 0.020 | 596. | 75. | -59.4 | 1.000 | 1.63 | 0.21 | 0.50 |

| HT | REF TA | HT |
|---|---|---|
| 10.0 | 276.0 | 2.0 |

**********
********** AERSCREEN AUTOMATED DISTANCES **********
OVERALL MAXIMUM CONCENTRATIONS BY DISTANCE

| DIST (m) | MAXIMUM 1-HR CONC (ug/m3) | DIST (m) | MAXIMUM 1-HR CONC (ug/m3) |
|---|---|---|---|
| 4270.90 | 0.1137E-02 | 4650.00 | 0.1112E-02 |
| 4275.00 | 0.1137E-02 | 4675.00 | 0.1110E-02 |
| 4300.00 | 0.1135E-02 | 4700.00 | 0.1108E-02 |
| 4325.00 | 0.1134E-02 | 4725.00 | 0.1107E-02 |
| 4350.00 | 0.1132E-02 | 4750.00 | 0.1105E-02 |
| 4375.00 | 0.1130E-02 | 4775.00 | 0.1103E-02 |
| 4400.00 | 0.1129E-02 | 4800.00 | 0.1102E-02 |
| 4425.00 | 0.1127E-02 | 4825.00 | 0.1100E-02 |
| 4450.00 | 0.1125E-02 | 4850.00 | 0.1098E-02 |
| 4475.00 | 0.1123E-02 | 4875.00 | 0.1097E-02 |
| 4500.00 | 0.1122E-02 | 4900.00 | 0.1095E-02 |
| 4525.00 | 0.1120E-02 | 4925.00 | 0.1093E-02 |
| 4550.00 | 0.1118E-02 | 4950.00 | 0.1092E-02 |
| 4575.00 | 0.1117E-02 | 4975.00 | 0.1090E-02 |
| 4600.00 | 0.1115E-02 | 5000.00 | 0.1088E-02 |
| 4625.00 | 0.1113E-02 | | |

********** AERSCREEN MAXIMUM IMPACT SUMMARY **********

| CALCULATION PROCEDURE | MAXIMUM 1-HOUR CONC (ug/m3) | SCALED 3-HOUR CONC (ug/m3) | SCALED 8-HOUR CONC (ug/m3) | SCALED 24-HOUR CONC (ug/m3) | SCALED ANNUAL CONC (ug/m3) |
|---|---|---|---|---|---|
| FLAT TERRAIN | 0.1137E-02 | 0.1137E-02 | 0.1024E-02 | 0.6825E-03 | 0.1137E-03 |

DISTANCE FROM SOURCE 4270.90 meters

| | | | | | |
|---|---|---|---|---|---|
| IMPACT AT THE AMBIENT BOUNDARY | 0.1137E-02 | 0.1137E-02 | 0.1024E-02 | 0.6825E-03 | 0.1137E-03 |

DISTANCE FROM SOURCE 4270.90 meters

**Construction Risk Calculations**

| | µg/m$^3$ |
|---|---|
| 1 Hour Avg Concentration: | 1.14E-03 |
| Annual Avg Concentration: | 1.14E-04 |

**Cancer Risk**

| | |
|---|---|
| DOSEair = (Cair*(BR/BW)*A*EF*$10^{-6}$) | 7.32194E-08 |

| | |
|---|---|
| Risk = DOSEair * CPF * ASF * ED/AT * FAH | 2.73841E-07 |

| | | in one million |
|---|---|---|
| Cancer Risk: | Construction Exposure | 0.27 |

Threshold: 10 in one million

| | | | | |
|---|---|---|---|---|
| | DOSEair | | mg/kg-d | Dose through inhalation |
| | CPF | 1.1 | (mg/kg/day)$^{-1}$ | Cancer Potency Factor for DPM |
| BR/BW* | BR/BW | 907 | L/kg | Daily Breathing rate normalized to body weight |
| | $10^{-6}$ | 1.00E-06 | | Micrograms to milligrams conversions, liters to cubic meters conversion |
| | Cair | 0.0001137 | ug/m$^3$ | Concentration in air (ug/m$^3$), modeled annual average concentration |
| | A | 1 | | Inhalation absorption factor |
| | EF | 0.71 | days/year | Exposure frequency (days/year) |
| ED | ED | 12 | years | Exposure duration (years) |
| | AT | 30 | years | Averaging time period over which exposure is averaged |
| ASF** | ASF (3rd trimester - 2 years) | 10 | | Age Sensitivity Factor |
| | ASF (2 - 16 years) | 3 | | |
| | ASF (16 - 70 years) | 1 | | |
| FAH | FAH (3rd trimester - 2 years) | 0.85 | | Fraction of time spent at home (unitless) |
| | FAH (2 - 16 years) | 0.72 | | |
| | FAH (16 - 70 years) | 0.73 | | |

* BR/BW is a weighted average of the 95th percentile (3 months at 361, 24 months at 1090, and 120 months at 861 L/kg)

** ASF conservatively uses 10 for all 12 years.

**Chronic Noncancer Hazard**

Hazard Quotient = $C_i/REL_i$

| | | |
|---|---|---|
| $C_i$ | 1.14E-04 | Concentration (annual average) |
| $REL_i$ | 5 | Reference Exposure Level |
| HQ = | 0.0000 | |
| Threshold: | 1 | |

**Acute NonCancer Hazard**

Acute HQ = Maximum Hourly Concentration/Acute REL

| | |
|---|---|
| Max Hourly | 1.14E-03 |
| Acute REL (Acrolein) | 2.5 |
| Acute HQ = | 0.0005 |
| Threshold: | 1 |

| Region | Calendar Year | Vehicle Cat | Model Year | Speed | Fuel | Population | VMT | Trips | Fuel Consumption | Fuel (daily) |
|---|---|---|---|---|---|---|---|---|---|---|
| CONTRA COSTA | 2007 | All Other B | Aggregated | Aggregated | DSL | 120.99 | 7007.035 | 1016.316 | 0.88947 | 889.47 |
| CONTRA COSTA | 2007 | LDA | Aggregated | Aggregated | GAS | 342940.4856 | 12068855 | 1608105 | 487.13249 | 487,132.49 |
| CONTRA COSTA | 2007 | LDA | Aggregated | Aggregated | DSL | 1676.870286 | 35795.46 | 6830.612 | 1.13411 | 1,134.11 |
| CONTRA COSTA | 2007 | LDA | Aggregated | Aggregated | ELEC | 170.0801156 | 5055.241 | 842.4672 | 0 | - |
| CONTRA COSTA | 2007 | LDT1 | Aggregated | Aggregated | GAS | 44539.62345 | 1412448 | 198730.3 | 66.34671 | 66,346.71 |
| CONTRA COSTA | 2007 | LDT1 | Aggregated | Aggregated | DSL | 76.92065531 | 1729.801 | 304.4234 | 0.07755 | 77.55 |
| CONTRA COSTA | 2007 | LDT1 | Aggregated | Aggregated | ELEC | 11.11076132 | 270.5329 | 51.25053 | 0 | - |
| CONTRA COSTA | 2007 | LDT2 | Aggregated | Aggregated | GAS | 106435.1108 | 4083041 | 509435.4 | 219.61279 | 219,612.79 |
| CONTRA COSTA | 2007 | LDT2 | Aggregated | Aggregated | DSL | 3.418695792 | 99.12452 | 14.56035 | 0.00434 | 4.34 |
| CONTRA COSTA | 2007 | LHD1 | Aggregated | Aggregated | GAS | 13377.35663 | 519891 | 199302.7 | 64.40189 | 64,401.89 |
| CONTRA COSTA | 2007 | LHD1 | Aggregated | Aggregated | DSL | 7231.396273 | 304697.1 | 90961.87 | 18.11292 | 18,112.92 |
| CONTRA COSTA | 2007 | LHD2 | Aggregated | Aggregated | GAS | 1120.477546 | 42020.27 | 16693.45 | 5.94896 | 5,948.96 |
| CONTRA COSTA | 2007 | LHD2 | Aggregated | Aggregated | DSL | 1770.029746 | 74564.55 | 22264.75 | 4.98187 | 4,981.87 |
| CONTRA COSTA | 2007 | MCY | Aggregated | Aggregated | GAS | 16541.35959 | 151422.4 | 33082.72 | 4.07926 | 4,079.26 |
| CONTRA COSTA | 2007 | MDV | Aggregated | Aggregated | GAS | 95054.27246 | 3682682 | 460436.7 | 222.90726 | 222,907.26 |
| CONTRA COSTA | 2007 | MDV | Aggregated | Aggregated | DSL | 116.2356569 | 2537.096 | 454.3137 | 0.13595 | 135.95 |
| CONTRA COSTA | 2007 | MH | Aggregated | Aggregated | GAS | 3679.371346 | 33459.09 | 368.0843 | 7.31245 | 7,312.45 |
| CONTRA COSTA | 2007 | MH | Aggregated | Aggregated | DSL | 621.3479601 | 7604.259 | 62.1348 | 0.80131 | 801.31 |
| CONTRA COSTA | 2007 | Motor Coa | Aggregated | Aggregated | DSL | 30.8 | 3170.002 | 449.68 | 0.56698 | 566.98 |
| CONTRA COSTA | 2007 | OBUS | Aggregated | Aggregated | GAS | 305.1185994 | 19882.72 | 6104.813 | 4.3499 | 4,349.90 |
| CONTRA COSTA | 2007 | PTO | Aggregated | Aggregated | DSL | 0 | 8621.189 | 0 | 1.95112 | 1,951.12 |
| CONTRA COSTA | 2007 | SBUS | Aggregated | Aggregated | GAS | 102.5608737 | 4968.998 | 410.2435 | 0.59486 | 594.86 |
| CONTRA COSTA | 2007 | SBUS | Aggregated | Aggregated | DSL | 312 | 12514.26 | 3600.437 | 1.59815 | 1,598.15 |
| CONTRA COSTA | 2007 | T6 Ag | Aggregated | Aggregated | DSL | 12 | 217.0417 | 52.8 | 0.02427 | 24.27 |
| CONTRA COSTA | 2007 | T6 CAIRP h | Aggregated | Aggregated | DSL | 16.52932053 | 2875.689 | 241.3281 | 0.31143 | 311.43 |
| CONTRA COSTA | 2007 | T6 CAIRP si | Aggregated | Aggregated | DSL | 8.264660263 | 414.3078 | 120.664 | 0.04528 | 45.28 |
| CONTRA COSTA | 2007 | T6 instate ( | Aggregated | Aggregated | DSL | 300.0893609 | 19610.68 | 1356.692 | 2.64789 | 2,647.89 |
| CONTRA COSTA | 2007 | T6 instate ( | Aggregated | Aggregated | DSL | 630.222245 | 35886.67 | 2849.21 | 4.81467 | 4,814.67 |
| CONTRA COSTA | 2007 | T6 instate l | Aggregated | Aggregated | DSL | 789.8555457 | 85952.93 | 9114.823 | 10.48193 | 10,481.93 |
| CONTRA COSTA | 2007 | T6 instate s | Aggregated | Aggregated | DSL | 2672.2 | 117054.1 | 30836.82 | 14.18287 | 14,182.87 |
| CONTRA COSTA | 2007 | T6 OOS hea | Aggregated | Aggregated | DSL | 9.453501272 | 1648.564 | 138.0211 | 0.17872 | 178.72 |
| CONTRA COSTA | 2007 | T6 OOS sm | Aggregated | Aggregated | DSL | 4.601261681 | 226.1592 | 67.17842 | 0.02472 | 24.72 |
| CONTRA COSTA | 2007 | T6 Public | Aggregated | Aggregated | DSL | 372.42 | 6170.033 | 1129.674 | 0.9114 | 911.4 |
| CONTRA COSTA | 2007 | T6 utility | Aggregated | Aggregated | DSL | 46.7 | 918.5423 | 537.05 | 0.11951 | 119.51 |
| CONTRA COSTA | 2007 | T6TS | Aggregated | Aggregated | GAS | 1114.494828 | 47720.8 | 22298.81 | 10.68262 | 10,682.62 |
| CONTRA COSTA | 2007 | T7 Ag | Aggregated | Aggregated | DSL | 6 | 85.51189 | 26.4 | 0.01555 | 15.55 |
| CONTRA COSTA | 2007 | T7 CAIRP | Aggregated | Aggregated | DSL | 312.6358919 | 80637.27 | 4564.484 | 14.38753 | 14,387.53 |
| CONTRA COSTA | 2007 | T7 CAIRP c | Aggregated | Aggregated | DSL | 52.88083508 | 14086.52 | 239.0722 | 2.86822 | 2,868.22 |
| CONTRA COSTA | 2007 | T7 NNOOS | Aggregated | Aggregated | DSL | 342.8726026 | 98317.52 | 5005.94 | 17.68694 | 17,686.94 |
| CONTRA COSTA | 2007 | T7 NOOS | Aggregated | Aggregated | DSL | 123.4793366 | 31681.58 | 1802.798 | 5.75177 | 5,751.77 |
| CONTRA COSTA | 2007 | T7 other po | Aggregated | Aggregated | DSL | 56.45570989 | 8338.767 | 429.0634 | 1.67525 | 1,675.25 |
| CONTRA COSTA | 2007 | T7 POAK | Aggregated | Aggregated | DSL | 244.1952438 | 39247.75 | 1855.884 | 7.94015 | 7,940.15 |
| CONTRA COSTA | 2007 | T7 Public | Aggregated | Aggregated | DSL | 300.31 | 7077.761 | 910.9403 | 1.49801 | 1,498.01 |
| CONTRA COSTA | 2007 | T7 Single | Aggregated | Aggregated | DSL | 872.16 | 43418.03 | 10064.61 | 8.21228 | 8,212.28 |
| CONTRA COSTA | 2007 | T7 single co | Aggregated | Aggregated | DSL | 470.9397813 | 34946.07 | 2129.1 | 7.2643 | 7,264.30 |
| CONTRA COSTA | 2007 | T7 SWCV | Aggregated | Aggregated | DSL | 203.2984225 | 8353.378 | 792.8638 | 3.76504 | 3,765.04 |
| CONTRA COSTA | 2007 | T7 SWCV | Aggregated | Aggregated | NG | 10.67157752 | 431.3842 | 41.61915 | 0.19163 | 191.63 |
| CONTRA COSTA | 2007 | T7 tractor | Aggregated | Aggregated | DSL | 935.0119926 | 138811 | 11874.65 | 23.07014 | 23,070.14 |
| CONTRA COSTA | 2007 | T7 tractor ( | Aggregated | Aggregated | DSL | 375.2226324 | 28827.43 | 1696.367 | 5.99117 | 5,991.17 |
| CONTRA COSTA | 2007 | T7 utility | Aggregated | Aggregated | DSL | 36.31 | 633.0538 | 417.565 | 0.12454 | 124.54 |
| CONTRA COSTA | 2007 | T7IS | Aggregated | Aggregated | GAS | 93.15946032 | 10282.72 | 1863.934 | 2.76075 | 2,760.75 |
| CONTRA COSTA | 2007 | UBUS | Aggregated | Aggregated | GAS | 2 | 155.4156 | 8 | 0.02174 | 21.74 |
| CONTRA COSTA | 2007 | UBUS | Aggregated | Aggregated | DSL | 255 | 28735.89 | 1020 | 5.60856 | 5,608.56 |
| CONTRA COSTA | 2007 | UBUS | Aggregated | Aggregated | NG | 1 | 56.51115 | 4 | 0.00958 | 9.58 |
| CONTRA COSTA | 2008 | All Other B | Aggregated | Aggregated | DSL | 124.78 | 6492.965 | 1048.152 | 0.82658 | 826.58 |
| CONTRA COSTA | 2008 | LDA | Aggregated | Aggregated | GAS | 338539.7695 | 11636198 | 1584680 | 467.25349 | 467,253.49 |
| CONTRA COSTA | 2008 | LDA | Aggregated | Aggregated | DSL | 1544.395824 | 31842.92 | 6254.072 | 0.99799 | 997.99 |
| CONTRA COSTA | 2008 | LDA | Aggregated | Aggregated | ELEC | 217.0871828 | 6359.348 | 1076.2 | 0 | - |
| CONTRA COSTA | 2008 | LDT1 | Aggregated | Aggregated | GAS | 43869.55907 | 1378336 | 196087.1 | 64.28511 | 64,285.11 |
| CONTRA COSTA | 2008 | LDT1 | Aggregated | Aggregated | DSL | 65.80989399 | 1400.519 | 256.6003 | 0.06255 | 62.55 |
| CONTRA COSTA | 2008 | LDT1 | Aggregated | Aggregated | ELEC | 8.546739479 | 201.6772 | 39.21633 | 0 | - |
| CONTRA COSTA | 2008 | LDT2 | Aggregated | Aggregated | GAS | 106251.3559 | 3951851 | 506271.9 | 210.80653 | 210,806.53 |
| CONTRA COSTA | 2008 | LDT2 | Aggregated | Aggregated | DSL | 4.273369739 | 157.4308 | 19.9754 | 0.00638 | 6.38 |
| CONTRA COSTA | 2008 | LHD1 | Aggregated | Aggregated | GAS | 12954.29303 | 481313.9 | 192999.7 | 59.5994 | 59,599.40 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| CONTRA COSTA | 2008 | LHD1 | Aggregated | Aggregated | DSL | 7357.033343 | 294194.2 | 92542.22 | 17.49384 | 17,493.84 |
| CONTRA COSTA | 2008 | LHD2 | Aggregated | Aggregated | GAS | 1247.823964 | 45835.81 | 18590.72 | 6.49221 | 6,492.21 |
| CONTRA COSTA | 2008 | LHD2 | Aggregated | Aggregated | DSL | 1888.829425 | 76813.72 | 23759.1 | 5.13373 | 5,133.73 |
| CONTRA COSTA | 2008 | MCY | Aggregated | Aggregated | GAS | 17186.63842 | 151957 | 34373.28 | 4.08702 | 4,087.02 |
| CONTRA COSTA | 2008 | MDV | Aggregated | Aggregated | GAS | 95913.21978 | 3582316 | 461928.9 | 216.44176 | 216,441.76 |
| CONTRA COSTA | 2008 | MDV | Aggregated | Aggregated | DSL | 105.1248956 | 2300.565 | 410.7996 | 0.12263 | 122.63 |
| CONTRA COSTA | 2008 | MH | Aggregated | Aggregated | GAS | 3395.619595 | 30022.21 | 339.6978 | 6.55271 | 6,552.71 |
| CONTRA COSTA | 2008 | MH | Aggregated | Aggregated | DSL | 640.150787 | 7557.968 | 64.01508 | 0.79654 | 796.54 |
| CONTRA COSTA | 2008 | Motor Coa | Aggregated | Aggregated | DSL | 26.69 | 2922.091 | 389.674 | 0.5209 | 520.9 |
| CONTRA COSTA | 2008 | OBUS | Aggregated | Aggregated | GAS | 319.6480565 | 20297.06 | 6395.518 | 4.43731 | 4,437.31 |
| CONTRA COSTA | 2008 | PTO | Aggregated | Aggregated | DSL | 0 | 8221.492 | 0 | 1.86089 | 1,860.89 |
| CONTRA COSTA | 2008 | SBUS | Aggregated | Aggregated | GAS | 160.6787022 | 7651.802 | 642.7148 | 0.89607 | 896.07 |
| CONTRA COSTA | 2008 | SBUS | Aggregated | Aggregated | DSL | 327 | 11508.86 | 3773.535 | 1.48508 | 1,485.08 |
| CONTRA COSTA | 2008 | T6 Ag | Aggregated | Aggregated | DSL | 12 | 217.983 | 52.8 | 0.02411 | 24.11 |
| CONTRA COSTA | 2008 | T6 CAIRP h | Aggregated | Aggregated | DSL | 14.62209124 | 2628.516 | 213.4825 | 0.2846 | 284.6 |
| CONTRA COSTA | 2008 | T6 CAIRP si | Aggregated | Aggregated | DSL | 8.264660263 | 416.2974 | 120.664 | 0.04554 | 45.54 |
| CONTRA COSTA | 2008 | T6 instate ( | Aggregated | Aggregated | DSL | 324.6026079 | 20548.92 | 1467.516 | 2.77865 | 2,778.65 |
| CONTRA COSTA | 2008 | T6 instate ( | Aggregated | Aggregated | DSL | 671.1676801 | 37603.61 | 3034.323 | 5.04843 | 5,048.43 |
| CONTRA COSTA | 2008 | T6 instate l | Aggregated | Aggregated | DSL | 828.6385414 | 79974.63 | 9562.374 | 9.76118 | 9,761.18 |
| CONTRA COSTA | 2008 | T6 instate s | Aggregated | Aggregated | DSL | 2838.99 | 108163.5 | 32761.55 | 13.13653 | 13,136.53 |
| CONTRA COSTA | 2008 | T6 OOS hea | Aggregated | Aggregated | DSL | 8.114952419 | 1436.358 | 118.4783 | 0.15565 | 155.65 |
| CONTRA COSTA | 2008 | T6 OOS sm | Aggregated | Aggregated | DSL | 4.182965165 | 206.4402 | 61.07129 | 0.02258 | 22.58 |
| CONTRA COSTA | 2008 | T6 Public | Aggregated | Aggregated | DSL | 398.41 | 6512.25 | 1208.51 | 0.96715 | 967.15 |
| CONTRA COSTA | 2008 | T6 utility | Aggregated | Aggregated | DSL | 53.46 | 930.1976 | 614.79 | 0.12326 | 123.26 |
| CONTRA COSTA | 2008 | T6TS | Aggregated | Aggregated | GAS | 993.9858014 | 40868.87 | 19887.67 | 9.1495 | 9,149.50 |
| CONTRA COSTA | 2008 | T7 Ag | Aggregated | Aggregated | DSL | 6 | 85.88272 | 26.4 | 0.01514 | 15.14 |
| CONTRA COSTA | 2008 | T7 CAIRP | Aggregated | Aggregated | DSL | 298.3079497 | 74282.11 | 4355.296 | 12.75133 | 12,751.33 |
| CONTRA COSTA | 2008 | T7 CAIRP c | Aggregated | Aggregated | DSL | 55.01683394 | 14760.47 | 248.729 | 3.00134 | 3,001.34 |
| CONTRA COSTA | 2008 | T7 NNOOS | Aggregated | Aggregated | DSL | 313.0039686 | 90568.7 | 4569.858 | 15.6326 | 15,632.60 |
| CONTRA COSTA | 2008 | T7 NOOS | Aggregated | Aggregated | DSL | 117.7944174 | 29181.61 | 1719.798 | 5.04238 | 5,042.38 |
| CONTRA COSTA | 2008 | T7 other p | Aggregated | Aggregated | DSL | 47.98336937 | 7352.452 | 364.6736 | 1.48119 | 1,481.19 |
| CONTRA COSTA | 2008 | T7 POAK | Aggregated | Aggregated | DSL | 228.3736118 | 36906.94 | 1735.639 | 7.48686 | 7,486.86 |
| CONTRA COSTA | 2008 | T7 Public | Aggregated | Aggregated | DSL | 322.28 | 7343.701 | 977.5827 | 1.55878 | 1,558.78 |
| CONTRA COSTA | 2008 | T7 Single | Aggregated | Aggregated | DSL | 894.84 | 41405.08 | 10326.33 | 7.77709 | 7,777.09 |
| CONTRA COSTA | 2008 | T7 single c | Aggregated | Aggregated | DSL | 512.5052842 | 36618.01 | 2317.016 | 7.58109 | 7,581.09 |
| CONTRA COSTA | 2008 | T7 SWCV | Aggregated | Aggregated | DSL | 211.6694135 | 8689.858 | 825.5107 | 3.89965 | 3,899.65 |
| CONTRA COSTA | 2008 | T7 SWCV | Aggregated | Aggregated | NG | 12.6205865 | 517.3185 | 49.22029 | 0.23301 | 233.01 |
| CONTRA COSTA | 2008 | T7 tractor | Aggregated | Aggregated | DSL | 1024.331993 | 128661.3 | 13009.02 | 21.33355 | 21,333.55 |
| CONTRA COSTA | 2008 | T7 tractor ( | Aggregated | Aggregated | DSL | 400.6666302 | 30206.64 | 1811.398 | 6.25252 | 6,252.52 |
| CONTRA COSTA | 2008 | T7 utility | Aggregated | Aggregated | DSL | 42.59 | 640.4072 | 489.785 | 0.12809 | 128.09 |
| CONTRA COSTA | 2008 | T7IS | Aggregated | Aggregated | GAS | 61.53652425 | 5064.44 | 1231.223 | 1.37908 | 1,379.08 |
| CONTRA COSTA | 2008 | UBUS | Aggregated | Aggregated | GAS | 2 | 132.0724 | 8 | 0.01848 | 18.48 |
| CONTRA COSTA | 2008 | UBUS | Aggregated | Aggregated | DSL | 260 | 29853.85 | 1040 | 5.82768 | 5,827.68 |
| CONTRA COSTA | 2009 | All Other B | Aggregated | Aggregated | DSL | 133.43 | 5672.071 | 1120.812 | 0.72705 | 727.05 |
| CONTRA COSTA | 2009 | LDA | Aggregated | Aggregated | GAS | 336925.2904 | 11556877 | 1569936 | 467.66435 | 467,664.35 |
| CONTRA COSTA | 2009 | LDA | Aggregated | Aggregated | DSL | 1633.281914 | 37542.71 | 6741.831 | 1.12234 | 1,122.34 |
| CONTRA COSTA | 2009 | LDA | Aggregated | Aggregated | ELEC | 234.1806617 | 6847.155 | 1155.27 | 0 | - |
| CONTRA COSTA | 2009 | LDT1 | Aggregated | Aggregated | GAS | 41732.01953 | 1320427 | 186093 | 61.98866 | 61,988.66 |
| CONTRA COSTA | 2009 | LDT1 | Aggregated | Aggregated | DSL | 64.10054609 | 1356.679 | 248.4633 | 0.06047 | 60.47 |
| CONTRA COSTA | 2009 | LDT1 | Aggregated | Aggregated | ELEC | 10.25608737 | 240.6599 | 46.76581 | 0 | - |
| CONTRA COSTA | 2009 | LDT2 | Aggregated | Aggregated | GAS | 106539.381 | 3945894 | 504592.7 | 211.38592 | 211,385.92 |
| CONTRA COSTA | 2009 | LDT2 | Aggregated | Aggregated | DSL | 6.837391583 | 241.9701 | 31.51996 | 0.00993 | 9.93 |
| CONTRA COSTA | 2009 | LHD1 | Aggregated | Aggregated | GAS | 12204.74398 | 440010 | 181832.5 | 55.1875 | 55,187.50 |
| CONTRA COSTA | 2009 | LHD1 | Aggregated | Aggregated | DSL | 7191.226598 | 278336.6 | 90456.58 | 16.55414 | 16,554.14 |
| CONTRA COSTA | 2009 | LHD2 | Aggregated | Aggregated | GAS | 1171.757983 | 42059.08 | 17457.45 | 6.03329 | 6,033.29 |
| CONTRA COSTA | 2009 | LHD2 | Aggregated | Aggregated | DSL | 1867.462576 | 73488.53 | 23490.33 | 4.91297 | 4,912.97 |
| CONTRA COSTA | 2009 | MCY | Aggregated | Aggregated | GAS | 16979.80732 | 147336.8 | 33959.61 | 4.00757 | 4,007.57 |
| CONTRA COSTA | 2009 | MDV | Aggregated | Aggregated | GAS | 94270.53645 | 3470362 | 450067.6 | 212.04979 | 212,049.79 |
| CONTRA COSTA | 2009 | MDV | Aggregated | Aggregated | DSL | 126.4917443 | 3838.72 | 543.6785 | 0.19016 | 190.16 |
| CONTRA COSTA | 2009 | MH | Aggregated | Aggregated | GAS | 3210.155348 | 27722.15 | 321.1439 | 6.12694 | 6,126.94 |
| CONTRA COSTA | 2009 | MH | Aggregated | Aggregated | DSL | 629.0400256 | 7207.063 | 62.904 | 0.75984 | 759.84 |
| CONTRA COSTA | 2009 | Motor Coa | Aggregated | Aggregated | DSL | 24.62 | 2675.173 | 359.452 | 0.47739 | 477.39 |
| CONTRA COSTA | 2009 | OBUS | Aggregated | Aggregated | GAS | 347.8522968 | 22046.72 | 6959.829 | 4.87921 | 4,879.21 |
| CONTRA COSTA | 2009 | PTO | Aggregated | Aggregated | DSL | 0 | 7660.809 | 0 | 1.73252 | 1,732.52 |
| CONTRA COSTA | 2009 | SBUS | Aggregated | Aggregated | GAS | 84.61272084 | 4087.834 | 338.4509 | 0.50187 | 501.87 |

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|---|---|---|---|---|---|---|---|---|---|---|
| CONTRA COSTA | 2009 | SBUS | Aggregated | Aggregated | DSL | 345 | 10684.22 | 3981.252 | 1.39215 | 1,392.15 |
| CONTRA COSTA | 2009 | T6 Ag | Aggregated | Aggregated | DSL | 12 | 218.6986 | 52.8 | 0.02425 | 24.25 |
| CONTRA COSTA | 2009 | T6 CAIRP h | Aggregated | Aggregated | DSL | 13.98634814 | 2548.074 | 204.2007 | 0.27608 | 276.08 |
| CONTRA COSTA | 2009 | T6 CAIRP si | Aggregated | Aggregated | DSL | 6.993174069 | 347.5531 | 102.1003 | 0.03805 | 38.05 |
| CONTRA COSTA | 2009 | T6 instate ( | Aggregated | Aggregated | DSL | 264.2029542 | 15663.07 | 1194.451 | 2.12253 | 2,122.53 |
| CONTRA COSTA | 2009 | T6 instate ( | Aggregated | Aggregated | DSL | 536.7358405 | 28662.72 | 2426.562 | 3.85552 | 3,855.52 |
| CONTRA COSTA | 2009 | T6 instate l | Aggregated | Aggregated | DSL | 799.3432142 | 75014.28 | 9224.31 | 9.15666 | 9,156.66 |
| CONTRA COSTA | 2009 | T6 instate s | Aggregated | Aggregated | DSL | 2797.86 | 101094.2 | 32286.92 | 12.2949 | 12,294.90 |
| CONTRA COSTA | 2009 | T6 OOS hea | Aggregated | Aggregated | DSL | 7.696655903 | 1372.562 | 112.3712 | 0.1488 | 148.8 |
| CONTRA COSTA | 2009 | T6 OOS sm | Aggregated | Aggregated | DSL | 3.848327951 | 194.0501 | 56.18559 | 0.02123 | 21.23 |
| CONTRA COSTA | 2009 | T6 Public | Aggregated | Aggregated | DSL | 403.49 | 6557.85 | 1223.92 | 0.97628 | 976.28 |
| CONTRA COSTA | 2009 | T6 utility | Aggregated | Aggregated | DSL | 51.05 | 938.6513 | 587.075 | 0.12457 | 124.57 |
| CONTRA COSTA | 2009 | T6TS | Aggregated | Aggregated | GAS | 804.248185 | 32817.52 | 16091.4 | 7.44225 | 7,442.25 |
| CONTRA COSTA | 2009 | T7 Ag | Aggregated | Aggregated | DSL | 6 | 86.16468 | 26.4 | 0.01526 | 15.26 |
| CONTRA COSTA | 2009 | T7 CAIRP | Aggregated | Aggregated | DSL | 281.0623774 | 68003.59 | 4103.511 | 11.70267 | 11,702.67 |
| CONTRA COSTA | 2009 | T7 CAIRP c | Aggregated | Aggregated | DSL | 42.03152994 | 11250.92 | 190.0229 | 2.28767 | 2,287.67 |
| CONTRA COSTA | 2009 | T7 NNOOS | Aggregated | Aggregated | DSL | 296.6560586 | 82915.93 | 4331.178 | 14.39414 | 14,394.14 |
| CONTRA COSTA | 2009 | T7 NOOS | Aggregated | Aggregated | DSL | 110.9815823 | 26714.07 | 1620.331 | 4.62984 | 4,629.84 |
| CONTRA COSTA | 2009 | T7 other p | Aggregated | Aggregated | DSL | 37.34040506 | 6386.927 | 283.7871 | 1.28733 | 1,287.33 |
| CONTRA COSTA | 2009 | T7 POAK | Aggregated | Aggregated | DSL | 209.1416209 | 33955.98 | 1589.476 | 6.90238 | 6,902.38 |
| CONTRA COSTA | 2009 | T7 Public | Aggregated | Aggregated | DSL | 346.3 | 7457.178 | 1050.443 | 1.59164 | 1,591.64 |
| CONTRA COSTA | 2009 | T7 Single | Aggregated | Aggregated | DSL | 860.19 | 38581.37 | 9926.473 | 7.24341 | 7,243.41 |
| CONTRA COSTA | 2009 | T7 single c | Aggregated | Aggregated | DSL | 412.1770707 | 27911.46 | 1863.437 | 5.78583 | 5,785.83 |
| CONTRA COSTA | 2009 | T7 SWCV | Aggregated | Aggregated | DSL | 211.7325237 | 8673.443 | 825.7568 | 3.88011 | 3,880.11 |
| CONTRA COSTA | 2009 | T7 SWCV | Aggregated | Aggregated | NG | 13.76747631 | 563.973 | 53.69316 | 0.25588 | 255.88 |
| CONTRA COSTA | 2009 | T7 tractor | Aggregated | Aggregated | DSL | 951.9319926 | 118519.4 | 12089.54 | 19.69021 | 19,690.21 |
| CONTRA COSTA | 2009 | T7 tractor ( | Aggregated | Aggregated | DSL | 316.4286409 | 23024.5 | 1430.562 | 4.76975 | 4,769.75 |
| CONTRA COSTA | 2009 | T7 utility | Aggregated | Aggregated | DSL | 38.9 | 646.4766 | 447.35 | 0.12864 | 128.64 |
| CONTRA COSTA | 2009 | T7IS | Aggregated | Aggregated | GAS | 61.53652425 | 4966.804 | 1231.223 | 1.36987 | 1,369.87 |
| CONTRA COSTA | 2009 | UBUS | Aggregated | Aggregated | GAS | 2 | 156.5776 | 8 | 0.02218 | 22.18 |
| CONTRA COSTA | 2009 | UBUS | Aggregated | Aggregated | DSL | 269 | 28049.97 | 1076 | 5.43101 | 5,431.01 |
| CONTRA COSTA | 2010 | All Other B | Aggregated | Aggregated | DSL | 137.62 | 5799.198 | 1156.008 | 0.74582 | 745.82 |
| CONTRA COSTA | 2010 | LDA | Aggregated | Aggregated | GAS | 335333.8875 | 11852617 | 1558205 | 475.17126 | 475,171.26 |
| CONTRA COSTA | 2010 | LDA | Aggregated | Aggregated | DSL | 1733.278766 | 45590.5 | 7304.54 | 1.29439 | 1,294.39 |
| CONTRA COSTA | 2010 | LDA | Aggregated | Aggregated | ELEC | 283.7517507 | 8661.09 | 1401.233 | 0 | - |
| CONTRA COSTA | 2010 | LDT1 | Aggregated | Aggregated | GAS | 41180.75483 | 1356246 | 183645.3 | 63.07682 | 63,076.82 |
| CONTRA COSTA | 2010 | LDT1 | Aggregated | Aggregated | DSL | 64.95522004 | 1356.716 | 246.7295 | 0.05992 | 59.92 |
| CONTRA COSTA | 2010 | LDT1 | Aggregated | Aggregated | ELEC | 13.67478317 | 367.9901 | 64.60677 | 0 | - |
| CONTRA COSTA | 2010 | LDT2 | Aggregated | Aggregated | GAS | 106842.7902 | 4062691 | 503582.9 | 215.03955 | 215,039.55 |
| CONTRA COSTA | 2010 | LDT2 | Aggregated | Aggregated | DSL | 5.982717635 | 184.8228 | 25.76216 | 0.00773 | 7.73 |
| CONTRA COSTA | 2010 | LHD1 | Aggregated | Aggregated | GAS | 11722.70787 | 420856.8 | 174650.9 | 52.77019 | 52,770.19 |
| CONTRA COSTA | 2010 | LHD1 | Aggregated | Aggregated | DSL | 7113.451268 | 276053.2 | 89478.27 | 16.41807 | 16,418.07 |
| CONTRA COSTA | 2010 | LHD2 | Aggregated | Aggregated | GAS | 1181.159396 | 42567.74 | 17597.52 | 6.10562 | 6,105.62 |
| CONTRA COSTA | 2010 | LHD2 | Aggregated | Aggregated | DSL | 1847.805075 | 72470.43 | 23243.06 | 4.84511 | 4,845.11 |
| CONTRA COSTA | 2010 | MCY | Aggregated | Aggregated | GAS | 16776.39492 | 146007.8 | 33552.79 | 3.96266 | 3,962.66 |
| CONTRA COSTA | 2010 | MDV | Aggregated | Aggregated | GAS | 93640.64175 | 3498438 | 443502.9 | 212.82911 | 212,829.11 |
| CONTRA COSTA | 2010 | MDV | Aggregated | Aggregated | DSL | 161.5333762 | 6020.642 | 739.989 | 0.28828 | 288.28 |
| CONTRA COSTA | 2010 | MH | Aggregated | Aggregated | GAS | 3042.639254 | 26596.48 | 304.3856 | 5.87403 | 5,874.03 |
| CONTRA COSTA | 2010 | MH | Aggregated | Aggregated | DSL | 611.0918727 | 6920.858 | 61.10919 | 0.73013 | 730.13 |
| CONTRA COSTA | 2010 | Motor Coa | Aggregated | Aggregated | DSL | 25.83 | 2692.255 | 377.118 | 0.48166 | 481.66 |
| CONTRA COSTA | 2010 | OBUS | Aggregated | Aggregated | GAS | 354.6896884 | 22676.56 | 7096.631 | 5.0171 | 5,017.10 |
| CONTRA COSTA | 2010 | PTO | Aggregated | Aggregated | DSL | 0 | 7130.699 | 0 | 1.61282 | 1,612.82 |
| CONTRA COSTA | 2010 | SBUS | Aggregated | Aggregated | GAS | 54.69913266 | 2752.865 | 218.7965 | 0.35165 | 351.65 |
| CONTRA COSTA | 2010 | SBUS | Aggregated | Aggregated | DSL | 357 | 10702.69 | 4119.731 | 1.40115 | 1,401.15 |
| CONTRA COSTA | 2010 | T6 Ag | Aggregated | Aggregated | DSL | 12 | 219.2548 | 52.8 | 0.02432 | 24.32 |
| CONTRA COSTA | 2010 | T6 CAIRP h | Aggregated | Aggregated | DSL | 14.62209124 | 2390.586 | 213.4825 | 0.25932 | 259.32 |
| CONTRA COSTA | 2010 | T6 CAIRP si | Aggregated | Aggregated | DSL | 8.264660263 | 381.7908 | 120.664 | 0.04187 | 41.87 |
| CONTRA COSTA | 2010 | T6 instate ( | Aggregated | Aggregated | DSL | 204.8815903 | 11699.83 | 926.2617 | 1.58671 | 1,586.71 |
| CONTRA COSTA | 2010 | T6 instate ( | Aggregated | Aggregated | DSL | 414.22669 | 21410.17 | 1872.703 | 2.88332 | 2,883.32 |
| CONTRA COSTA | 2010 | T6 instate l | Aggregated | Aggregated | DSL | 795.4311772 | 74828.98 | 9179.166 | 9.14604 | 9,146.04 |
| CONTRA COSTA | 2010 | T6 instate s | Aggregated | Aggregated | DSL | 2736.6 | 98867.69 | 31579.98 | 12.03622 | 12,036.22 |
| CONTRA COSTA | 2010 | T6 OOS hea | Aggregated | Aggregated | DSL | 8.282271026 | 1348.303 | 120.9212 | 0.14632 | 146.32 |
| CONTRA COSTA | 2010 | T6 OOS sm | Aggregated | Aggregated | DSL | 4.266624468 | 198.09 | 62.29272 | 0.02172 | 21.72 |
| CONTRA COSTA | 2010 | T6 Public | Aggregated | Aggregated | DSL | 435.58 | 6908.78 | 1321.259 | 1.03395 | 1,033.95 |
| CONTRA COSTA | 2010 | T6 utility | Aggregated | Aggregated | DSL | 46.48 | 947.6444 | 534.52 | 0.12572 | 125.72 |

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|---|---|---|---|---|---|---|---|---|---|---|
| CONTRA COSTA | 2010 | T6TS | Aggregated | Aggregated | GAS | 788.00938 | 33120.72 | 15766.49 | 7.49893 | 7,498.93 |
| CONTRA COSTA | 2010 | T7 Ag | Aggregated | Aggregated | DSL | 6 | 86.38381 | 26.4 | 0.01532 | 15.32 |
| CONTRA COSTA | 2010 | T7 CAIRP | Aggregated | Aggregated | DSL | 313.1435857 | 68456.35 | 4571.896 | 11.84135 | 11,841.35 |
| CONTRA COSTA | 2010 | T7 CAIRP c | Aggregated | Aggregated | DSL | 31.70034979 | 8404.092 | 143.316 | 1.70978 | 1,709.78 |
| CONTRA COSTA | 2010 | T7 NNOOS | Aggregated | Aggregated | DSL | 338.6333046 | 83465.55 | 4944.046 | 14.60484 | 14,604.84 |
| CONTRA COSTA | 2010 | T7 NOOS | Aggregated | Aggregated | DSL | 123.6565558 | 26893.11 | 1805.386 | 4.69102 | 4,691.02 |
| CONTRA COSTA | 2010 | T7 other p | Aggregated | Aggregated | DSL | 34.49944954 | 6446.603 | 262.1958 | 1.31908 | 1,319.08 |
| CONTRA COSTA | 2010 | T7 POAK | Aggregated | Aggregated | DSL | 238.2846364 | 38682.54 | 1810.963 | 7.99424 | 7,994.24 |
| CONTRA COSTA | 2010 | T7 Public | Aggregated | Aggregated | DSL | 352.46 | 7718.533 | 1069.129 | 1.64486 | 1,644.86 |
| CONTRA COSTA | 2010 | T7 Single | Aggregated | Aggregated | DSL | 803.64 | 35911.63 | 9273.894 | 6.7432 | 6,743.20 |
| CONTRA COSTA | 2010 | T7 single c | Aggregated | Aggregated | DSL | 317.7346672 | 20849.01 | 1436.466 | 4.32487 | 4,324.87 |
| CONTRA COSTA | 2010 | T7 SWCV | Aggregated | Aggregated | DSL | 213.6845705 | 8763.267 | 833.3698 | 3.90925 | 3,909.25 |
| CONTRA COSTA | 2010 | T7 SWCV | Aggregated | Aggregated | NG | 16.8854295 | 680.9644 | 65.85318 | 0.31103 | 311.03 |
| CONTRA COSTA | 2010 | T7 tractor | Aggregated | Aggregated | DSL | 1008.961993 | 118104.5 | 12813.82 | 19.59307 | 19,593.07 |
| CONTRA COSTA | 2010 | T7 tractor ( | Aggregated | Aggregated | DSL | 245.1221848 | 17198.59 | 1108.188 | 3.56452 | 3,564.52 |
| CONTRA COSTA | 2010 | T7 utility | Aggregated | Aggregated | DSL | 31.11 | 653.362 | 357.765 | 0.12942 | 129.42 |
| CONTRA COSTA | 2010 | T7IS | Aggregated | Aggregated | GAS | 58.11782846 | 4570.093 | 1162.822 | 1.2613 | 1,261.30 |
| CONTRA COSTA | 2010 | UBUS | Aggregated | Aggregated | GAS | 2 | 127.4826 | 8 | 0.01807 | 18.07 |
| CONTRA COSTA | 2010 | UBUS | Aggregated | Aggregated | DSL | 300 | 25043.94 | 1200 | 4.72909 | 4,729.09 |
| CONTRA COSTA | 2011 | All Other B | Aggregated | Aggregated | DSL | 141.18 | 6137.28 | 1185.912 | 0.78794 | 787.94 |
| CONTRA COSTA | 2011 | LDA | Aggregated | Aggregated | GAS | 333181.8185 | 11733247 | 1544039 | 466.92673 | 466,926.73 |
| CONTRA COSTA | 2011 | LDA | Aggregated | Aggregated | DSL | 1945.237905 | 58552.01 | 8479.474 | 1.58731 | 1,587.31 |
| CONTRA COSTA | 2011 | LDA | Aggregated | Aggregated | ELEC | 377.765885 | 11765.22 | 1873.204 | 0 | - |
| CONTRA COSTA | 2011 | LDT1 | Aggregated | Aggregated | GAS | 39050.05268 | 1272002 | 173139.4 | 58.93993 | 58,939.93 |
| CONTRA COSTA | 2011 | LDT1 | Aggregated | Aggregated | DSL | 54.69913266 | 1117.572 | 205.2029 | 0.04938 | 49.38 |
| CONTRA COSTA | 2011 | LDT1 | Aggregated | Aggregated | ELEC | 12.82010922 | 319.1406 | 58.75105 | 0 | - |
| CONTRA COSTA | 2011 | LDT2 | Aggregated | Aggregated | GAS | 109519.629 | 4154759 | 514566.1 | 216.44017 | 216,440.17 |
| CONTRA COSTA | 2011 | LDT2 | Aggregated | Aggregated | DSL | 9.401413427 | 270.4685 | 39.44116 | 0.01136 | 11.36 |
| CONTRA COSTA | 2011 | LHD1 | Aggregated | Aggregated | GAS | 11263.74796 | 393772 | 167813.1 | 49.37161 | 49,371.61 |
| CONTRA COSTA | 2011 | LHD1 | Aggregated | Aggregated | DSL | 6990.37822 | 265182.1 | 87930.16 | 15.77373 | 15,773.73 |
| CONTRA COSTA | 2011 | LHD2 | Aggregated | Aggregated | GAS | 1165.775265 | 41322.67 | 17368.31 | 5.92598 | 5,925.98 |
| CONTRA COSTA | 2011 | LHD2 | Aggregated | Aggregated | DSL | 1846.950401 | 72212.25 | 23232.31 | 4.82811 | 4,828.11 |
| CONTRA COSTA | 2011 | MCY | Aggregated | Aggregated | GAS | 16980.662 | 143225.3 | 33961.32 | 3.88778 | 3,887.78 |
| CONTRA COSTA | 2011 | MDV | Aggregated | Aggregated | GAS | 93079.12097 | 3419298 | 437576.5 | 206.94426 | 206,944.26 |
| CONTRA COSTA | 2011 | MDV | Aggregated | Aggregated | DSL | 281.1877289 | 11905.39 | 1353.993 | 0.54592 | 545.92 |
| CONTRA COSTA | 2011 | MH | Aggregated | Aggregated | GAS | 2874.268487 | 24809.92 | 287.5418 | 5.47459 | 5,474.59 |
| CONTRA COSTA | 2011 | MH | Aggregated | Aggregated | DSL | 610.2371988 | 6644.62 | 61.02372 | 0.70163 | 701.63 |
| CONTRA COSTA | 2011 | Motor Coa | Aggregated | Aggregated | DSL | 25.74 | 2738.017 | 375.804 | 0.48907 | 489.07 |
| CONTRA COSTA | 2011 | OBUS | Aggregated | Aggregated | GAS | 352.1256665 | 22031.91 | 7045.33 | 4.87365 | 4,873.65 |
| CONTRA COSTA | 2011 | PTO | Aggregated | Aggregated | DSL | 0 | 7353.606 | 0 | 1.66407 | 1,664.07 |
| CONTRA COSTA | 2011 | SBUS | Aggregated | Aggregated | GAS | 54.69913266 | 2770.935 | 218.7965 | 0.35331 | 353.31 |
| CONTRA COSTA | 2011 | SBUS | Aggregated | Aggregated | DSL | 364 | 10783.46 | 4200.51 | 1.41458 | 1,414.58 |
| CONTRA COSTA | 2011 | T6 Ag | Aggregated | Aggregated | DSL | 12 | 220.5167 | 52.8 | 0.02416 | 24.16 |
| CONTRA COSTA | 2011 | T6 CAIRP h | Aggregated | Aggregated | DSL | 14.62209124 | 2496.628 | 213.4825 | 0.26971 | 269.71 |
| CONTRA COSTA | 2011 | T6 CAIRP s | Aggregated | Aggregated | DSL | 7.628917166 | 367.0717 | 111.3822 | 0.04026 | 40.26 |
| CONTRA COSTA | 2011 | T6 instate ( | Aggregated | Aggregated | DSL | 273.8105393 | 15818.85 | 1237.887 | 2.14309 | 2,143.09 |
| CONTRA COSTA | 2011 | T6 instate ( | Aggregated | Aggregated | DSL | 560.3586166 | 28947.79 | 2533.36 | 3.89836 | 3,898.36 |
| CONTRA COSTA | 2011 | T6 instate l | Aggregated | Aggregated | DSL | 796.0600746 | 77464.28 | 9186.423 | 9.42992 | 9,429.92 |
| CONTRA COSTA | 2011 | T6 instate s | Aggregated | Aggregated | DSL | 2716.22 | 101947.5 | 31344.8 | 12.3959 | 12,395.90 |
| CONTRA COSTA | 2011 | T6 OOS he | Aggregated | Aggregated | DSL | 8.282271026 | 1387.708 | 120.9212 | 0.14999 | 149.99 |
| CONTRA COSTA | 2011 | T6 OOS sm | Aggregated | Aggregated | DSL | 4.266624468 | 205.8959 | 62.29272 | 0.02258 | 22.58 |
| CONTRA COSTA | 2011 | T6 Public | Aggregated | Aggregated | DSL | 445.58 | 7121.878 | 1351.593 | 1.06444 | 1,064.44 |
| CONTRA COSTA | 2011 | T6 utility | Aggregated | Aggregated | DSL | 52.88 | 961.8696 | 608.12 | 0.12804 | 128.04 |
| CONTRA COSTA | 2011 | T6TS | Aggregated | Aggregated | GAS | 748.6943783 | 31788.85 | 14979.88 | 7.18203 | 7,182.03 |
| CONTRA COSTA | 2011 | T7 Ag | Aggregated | Aggregated | DSL | 6 | 86.88099 | 26.4 | 0.01547 | 15.47 |
| CONTRA COSTA | 2011 | T7 CAIRP | Aggregated | Aggregated | DSL | 321.0513671 | 69700.1 | 4687.35 | 12.06514 | 12,065.14 |
| CONTRA COSTA | 2011 | T7 CAIRP c | Aggregated | Aggregated | DSL | 43.36276916 | 11362.82 | 196.0414 | 2.31478 | 2,314.78 |
| CONTRA COSTA | 2011 | T7 NNOOS | Aggregated | Aggregated | DSL | 351.4222978 | 84979.15 | 5130.766 | 14.86322 | 14,863.22 |
| CONTRA COSTA | 2011 | T7 NOOS | Aggregated | Aggregated | DSL | 126.7924112 | 27383.35 | 1851.169 | 4.7833 | 4,783.30 |
| CONTRA COSTA | 2011 | T7 other p | Aggregated | Aggregated | DSL | 38.2506558 | 6611.141 | 290.705 | 1.35039 | 1,350.39 |
| CONTRA COSTA | 2011 | T7 POAK | Aggregated | Aggregated | DSL | 239.534764 | 39110.3 | 1820.464 | 8.0687 | 8,068.70 |
| CONTRA COSTA | 2011 | T7 Public | Aggregated | Aggregated | DSL | 366.52 | 8005.579 | 1111.777 | 1.70431 | 1,704.31 |
| CONTRA COSTA | 2011 | T7 Single | Aggregated | Aggregated | DSL | 760.28 | 37034.23 | 8773.526 | 6.94233 | 6,942.33 |
| CONTRA COSTA | 2011 | T7 single c | Aggregated | Aggregated | DSL | 426.3714734 | 28189.06 | 1927.609 | 5.84749 | 5,847.49 |
| CONTRA COSTA | 2011 | T7 SWCV | Aggregated | Aggregated | DSL | 209.0076892 | 8582.138 | 815.13 | 3.80339 | 3,803.39 |

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|---|---|---|---|---|---|---|---|---|---|---|
| CONTRA COSTA | 2011 | T7 SWCV | Aggregated | Aggregated | NG | 25.48231079 | 1042.859 | 99.38101 | 0.48072 | 480.72 |
| CONTRA COSTA | 2011 | T7 tractor | Aggregated | Aggregated | DSL | 999.5219926 | 120238.5 | 12693.93 | 19.86036 | 19,860.36 |
| CONTRA COSTA | 2011 | T7 tractor ( | Aggregated | Aggregated | DSL | 326.2785003 | 23253.49 | 1475.092 | 4.81837 | 4,818.37 |
| CONTRA COSTA | 2011 | T7 utility | Aggregated | Aggregated | DSL | 33.21 | 661.8556 | 381.915 | 0.13145 | 131.45 |
| CONTRA COSTA | 2011 | T7IS | Aggregated | Aggregated | GAS | 63.24587214 | 4733.012 | 1265.423 | 1.30667 | 1,306.67 |
| CONTRA COSTA | 2011 | UBUS | Aggregated | Aggregated | GAS | 2 | 108.0809 | 8 | 0.01532 | 15.32 |
| CONTRA COSTA | 2011 | UBUS | Aggregated | Aggregated | DSL | 262 | 24723.55 | 1048 | 4.69775 | 4,697.75 |
| CONTRA COSTA | 2012 | All Other B | Aggregated | Aggregated | DSL | 136.69 | 5914.351 | 1148.196 | 0.75675 | 756.75 |
| CONTRA COSTA | 2012 | LDA | Aggregated | Aggregated | GAS | 338256.0177 | 11966299 | 1566103 | 469.53518 | 469,535.18 |
| CONTRA COSTA | 2012 | LDA | Aggregated | Aggregated | DSL | 2220.442917 | 71871.75 | 9850.549 | 1.86965 | 1,869.65 |
| CONTRA COSTA | 2012 | LDA | Aggregated | Aggregated | ELEC | 370.9284934 | 11702.44 | 1840.215 | 0 | - |
| CONTRA COSTA | 2012 | LDT1 | Aggregated | Aggregated | GAS | 38084.27112 | 1241433 | 168345.3 | 56.9718 | 56,971.80 |
| CONTRA COSTA | 2012 | LDT1 | Aggregated | Aggregated | DSL | 54.69913266 | 1140.446 | 205.154 | 0.05139 | 51.39 |
| CONTRA COSTA | 2012 | LDT1 | Aggregated | Aggregated | ELEC | 12.82010922 | 315.3484 | 58.60416 | 0 | - |
| CONTRA COSTA | 2012 | LDT2 | Aggregated | Aggregated | GAS | 112515.2612 | 4272072 | 527249.7 | 218.72665 | 218,726.65 |
| CONTRA COSTA | 2012 | LDT2 | Aggregated | Aggregated | DSL | 62.3911982 | 2897.685 | 310.0024 | 0.09929 | 99.29 |
| CONTRA COSTA | 2012 | LHD1 | Aggregated | Aggregated | GAS | 10850.08577 | 371913 | 161650.1 | 46.62161 | 46,621.61 |
| CONTRA COSTA | 2012 | LHD1 | Aggregated | Aggregated | DSL | 6897.218759 | 255387.6 | 86758.34 | 15.19344 | 15,193.44 |
| CONTRA COSTA | 2012 | LHD2 | Aggregated | Aggregated | GAS | 1159.792547 | 40918.31 | 17279.18 | 5.86604 | 5,866.04 |
| CONTRA COSTA | 2012 | LHD2 | Aggregated | Aggregated | DSL | 1934.127144 | 75073.13 | 24328.89 | 5.01975 | 5,019.75 |
| CONTRA COSTA | 2012 | MCY | Aggregated | Aggregated | GAS | 17165.27157 | 141570.2 | 34330.54 | 3.84061 | 3,840.61 |
| CONTRA COSTA | 2012 | MDV | Aggregated | Aggregated | GAS | 93744.0573 | 3409931 | 438074.3 | 204.71286 | 204,712.86 |
| CONTRA COSTA | 2012 | MDV | Aggregated | Aggregated | DSL | 399.9874076 | 17438.9 | 1949.803 | 0.7837 | 783.7 |
| CONTRA COSTA | 2012 | MH | Aggregated | Aggregated | GAS | 2804.185223 | 24150.77 | 280.5307 | 5.32142 | 5,321.42 |
| CONTRA COSTA | 2012 | MH | Aggregated | Aggregated | DSL | 623.911982 | 6634.543 | 62.3912 | 0.70089 | 700.89 |
| CONTRA COSTA | 2012 | Motor Coa | Aggregated | Aggregated | DSL | 27.43 | 2706.701 | 400.478 | 0.48583 | 485.83 |
| CONTRA COSTA | 2012 | OBUS | Aggregated | Aggregated | GAS | 329.9041439 | 20379.97 | 6600.722 | 4.50525 | 4,505.25 |
| CONTRA COSTA | 2012 | PTO | Aggregated | Aggregated | DSL | 0 | 7166.611 | 0 | 1.62403 | 1,624.03 |
| CONTRA COSTA | 2012 | SBUS | Aggregated | Aggregated | GAS | 48.71641503 | 2487.315 | 194.8657 | 0.31327 | 313.27 |
| CONTRA COSTA | 2012 | SBUS | Aggregated | Aggregated | DSL | 375.9999997 | 10688.31 | 4338.988 | 1.41386 | 1,413.86 |
| CONTRA COSTA | 2012 | T6 Ag | Aggregated | Aggregated | DSL | 12 | 219.4285 | 52.8 | 0.02408 | 24.08 |
| CONTRA COSTA | 2012 | T6 CAIRP h | Aggregated | Aggregated | DSL | 13.35060504 | 2332.836 | 194.9188 | 0.25145 | 251.45 |
| CONTRA COSTA | 2012 | T6 CAIRP si | Aggregated | Aggregated | DSL | 7.628917166 | 381.436 | 111.3822 | 0.04182 | 41.82 |
| CONTRA COSTA | 2012 | T6 instate ( | Aggregated | Aggregated | DSL | 298.2184161 | 17184.03 | 1348.234 | 2.32682 | 2,326.82 |
| CONTRA COSTA | 2012 | T6 instate ( | Aggregated | Aggregated | DSL | 614.2969391 | 31446.02 | 2777.213 | 4.23621 | 4,236.21 |
| CONTRA COSTA | 2012 | T6 instate l | Aggregated | Aggregated | DSL | 832.6137954 | 79026.11 | 9608.248 | 9.56644 | 9,566.44 |
| CONTRA COSTA | 2012 | T6 instate s | Aggregated | Aggregated | DSL | 2721.35 | 102282.1 | 31404 | 12.4147 | 12,414.70 |
| CONTRA COSTA | 2012 | T6 OOS hea | Aggregated | Aggregated | DSL | 7.696655903 | 1321.566 | 112.3712 | 0.14242 | 142.42 |
| CONTRA COSTA | 2012 | T6 OOS sm | Aggregated | Aggregated | DSL | 4.099305861 | 204.6304 | 59.84987 | 0.02244 | 22.44 |
| CONTRA COSTA | 2012 | T6 Public | Aggregated | Aggregated | DSL | 453.59 | 7182.004 | 1375.89 | 1.07374 | 1,073.74 |
| CONTRA COSTA | 2012 | T6 utility | Aggregated | Aggregated | DSL | 51.43 | 966.45 | 591.445 | 0.12754 | 127.54 |
| CONTRA COSTA | 2012 | T6TS | Aggregated | Aggregated | GAS | 741.8569868 | 31235.75 | 14843.07 | 7.05156 | 7,051.56 |
| CONTRA COSTA | 2012 | T7 Ag | Aggregated | Aggregated | DSL | 6 | 86.45223 | 26.4 | 0.01538 | 15.38 |
| CONTRA COSTA | 2012 | T7 CAIRP | Aggregated | Aggregated | DSL | 345.9255556 | 68853.71 | 5050.513 | 11.99298 | 11,992.98 |
| CONTRA COSTA | 2012 | T7 CAIRP c | Aggregated | Aggregated | DSL | 48.27305905 | 12343.44 | 218.2406 | 2.51992 | 2,519.92 |
| CONTRA COSTA | 2012 | T7 NNOOS | Aggregated | Aggregated | DSL | 379.9064697 | 83947.44 | 5546.634 | 14.72788 | 14,727.88 |
| CONTRA COSTA | 2012 | T7 NOOS | Aggregated | Aggregated | DSL | 136.6092911 | 27049.35 | 1994.496 | 4.76551 | 4,765.51 |
| CONTRA COSTA | 2012 | T7 other p | Aggregated | Aggregated | DSL | 48.2734329 | 6507.339 | 366.8781 | 1.33311 | 1,333.11 |
| CONTRA COSTA | 2012 | T7 POAK | Aggregated | Aggregated | DSL | 239.6547785 | 37454.53 | 1821.376 | 7.73101 | 7,731.01 |
| CONTRA COSTA | 2012 | T7 Public | Aggregated | Aggregated | DSL | 376.56 | 8126.596 | 1142.232 | 1.7284 | 1,728.40 |
| CONTRA COSTA | 2012 | T7 Single | Aggregated | Aggregated | DSL | 740.16 | 36092.48 | 8541.344 | 6.76768 | 6,767.68 |
| CONTRA COSTA | 2012 | T7 single c | Aggregated | Aggregated | DSL | 464.1343854 | 30621.81 | 2098.334 | 6.35836 | 6,358.36 |
| CONTRA COSTA | 2012 | T7 SWCV | Aggregated | Aggregated | DSL | 198.3597393 | 8076.055 | 773.603 | 3.61632 | 3,616.32 |
| CONTRA COSTA | 2012 | T7 SWCV | Aggregated | Aggregated | NG | 33.64026066 | 1367.751 | 131.197 | 0.63319 | 633.19 |
| CONTRA COSTA | 2012 | T7 tractor | Aggregated | Aggregated | DSL | 942.2019926 | 118401.8 | 11965.97 | 19.49232 | 19,492.32 |
| CONTRA COSTA | 2012 | T7 tractor ( | Aggregated | Aggregated | DSL | 356.3725975 | 25260.29 | 1611.147 | 5.23896 | 5,238.96 |
| CONTRA COSTA | 2012 | T7 utility | Aggregated | Aggregated | DSL | 33.08 | 665.6144 | 380.42 | 0.13118 | 131.18 |
| CONTRA COSTA | 2012 | T7IS | Aggregated | Aggregated | GAS | 55.55380661 | 3974.055 | 1111.521 | 1.09611 | 1,096.11 |
| CONTRA COSTA | 2012 | UBUS | Aggregated | Aggregated | GAS | 27 | 1737.049 | 108 | 0.24611 | 246.11 |
| CONTRA COSTA | 2012 | UBUS | Aggregated | Aggregated | DSL | 233 | 22407.97 | 932 | 4.50592 | 4,505.92 |
| CONTRA COSTA | 2013 | All Other B | Aggregated | Aggregated | DSL | 146.55 | 6651.115 | 1231.02 | 0.85175 | 851.75 |
| CONTRA COSTA | 2013 | LDA | Aggregated | Aggregated | GAS | 344965.2082 | 12284218 | 1596970 | 473.53716 | 473,537.16 |
| CONTRA COSTA | 2013 | LDA | Aggregated | Aggregated | DSL | 2512.741407 | 87586.66 | 11376.1 | 2.18249 | 2,182.49 |
| CONTRA COSTA | 2013 | LDA | Aggregated | Aggregated | ELEC | 811.0855765 | 27213.46 | 4101.862 | 0 | - |
| CONTRA COSTA | 2013 | LDT1 | Aggregated | Aggregated | GAS | 37915.90035 | 1241851 | 167401.7 | 56.19776 | 56,197.76 |

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|---|---|---|---|---|---|---|---|---|---|---|
| CONTRA COSTA | 2013 | LDT1 | Aggregated | Aggregated | DSL | 47.00706713 | 933.3993 | 173.1154 | 0.04184 | 41.84 |
| CONTRA COSTA | 2013 | LDT1 | Aggregated | Aggregated | ELEC | 40.16967555 | 1290.122 | 199.667 | 0 | - |
| CONTRA COSTA | 2013 | LDT2 | Aggregated | Aggregated | GAS | 117717.6615 | 4488050 | 551019 | 224.92924 | 224,929.24 |
| CONTRA COSTA | 2013 | LDT2 | Aggregated | Aggregated | DSL | 101.7061998 | 4794.515 | 508.3184 | 0.16088 | 160.88 |
| CONTRA COSTA | 2013 | LHD1 | Aggregated | Aggregated | GAS | 10768.89174 | 365218 | 160440.4 | 45.77004 | 45,770.04 |
| CONTRA COSTA | 2013 | LHD1 | Aggregated | Aggregated | DSL | 6949.35387 | 253321.8 | 87414.13 | 15.07206 | 15,072.06 |
| CONTRA COSTA | 2013 | LHD2 | Aggregated | Aggregated | GAS | 1200.816897 | 42064.22 | 17890.38 | 6.02956 | 6,029.56 |
| CONTRA COSTA | 2013 | LHD2 | Aggregated | Aggregated | DSL | 1989.680951 | 76890.49 | 25027.68 | 5.1415 | 5,141.50 |
| CONTRA COSTA | 2013 | MCY | Aggregated | Aggregated | GAS | 17589.18985 | 143171.3 | 35178.38 | 3.878 | 3,878.00 |
| CONTRA COSTA | 2013 | MDV | Aggregated | Aggregated | GAS | 93146.64021 | 3351078 | 432640.3 | 199.16397 | 199,163.97 |
| CONTRA COSTA | 2013 | MDV | Aggregated | Aggregated | DSL | 464.9426277 | 20530.65 | 2279.135 | 0.90817 | 908.17 |
| CONTRA COSTA | 2013 | MH | Aggregated | Aggregated | GAS | 2713.589785 | 23211.05 | 271.4675 | 5.11082 | 5,110.82 |
| CONTRA COSTA | 2013 | MH | Aggregated | Aggregated | DSL | 658.0989399 | 6859.993 | 65.80989 | 0.72546 | 725.46 |
| CONTRA COSTA | 2013 | Motor Coa | Aggregated | Aggregated | DSL | 26.35 | 2927.885 | 384.71 | 0.5213 | 521.3 |
| CONTRA COSTA | 2013 | OBUS | Aggregated | Aggregated | GAS | 348.7069707 | 21383.98 | 6976.929 | 4.72437 | 4,724.37 |
| CONTRA COSTA | 2013 | PTO | Aggregated | Aggregated | DSL | 0 | 7113.566 | 0 | 1.60388 | 1,603.88 |
| CONTRA COSTA | 2013 | SBUS | Aggregated | Aggregated | GAS | 27.34956633 | 1404.935 | 109.3983 | 0.16021 | 160.21 |
| CONTRA COSTA | 2013 | SBUS | Aggregated | Aggregated | DSL | 388.2299997 | 11629.45 | 4480.12 | 1.53299 | 1,532.99 |
| CONTRA COSTA | 2013 | T6 Ag | Aggregated | Aggregated | DSL | 11.31 | 225.0894 | 49.764 | 0.02463 | 24.63 |
| CONTRA COSTA | 2013 | T6 CAIRP h | Aggregated | Aggregated | DSL | 16.35643167 | 2621.682 | 238.8039 | 0.27492 | 274.92 |
| CONTRA COSTA | 2013 | T6 CAIRP si | Aggregated | Aggregated | DSL | 6.516647658 | 362.5311 | 95.14306 | 0.03969 | 39.69 |
| CONTRA COSTA | 2013 | T6 instate ( | Aggregated | Aggregated | DSL | 286.0522008 | 16049.69 | 1293.231 | 2.16139 | 2,161.39 |
| CONTRA COSTA | 2013 | T6 instate ( | Aggregated | Aggregated | DSL | 599.0472361 | 29370.22 | 2708.269 | 3.93213 | 3,932.13 |
| CONTRA COSTA | 2013 | T6 instate l | Aggregated | Aggregated | DSL | 719.26 | 69788.76 | 8300.161 | 8.24747 | 8,247.47 |
| CONTRA COSTA | 2013 | T6 instate s | Aggregated | Aggregated | DSL | 2849.67 | 120996.2 | 32884.8 | 14.61704 | 14,617.04 |
| CONTRA COSTA | 2013 | T6 OOS hea | Aggregated | Aggregated | DSL | 9.409161841 | 1506.841 | 137.3738 | 0.15803 | 158.03 |
| CONTRA COSTA | 2013 | T6 OOS sm | Aggregated | Aggregated | DSL | 3.769688206 | 209.2604 | 55.03745 | 0.02291 | 22.91 |
| CONTRA COSTA | 2013 | T6 Public | Aggregated | Aggregated | DSL | 480.64 | 7504.441 | 1457.941 | 1.13982 | 1,139.82 |
| CONTRA COSTA | 2013 | T6 utility | Aggregated | Aggregated | DSL | 57.09 | 1001.736 | 656.535 | 0.13124 | 131.24 |
| CONTRA COSTA | 2013 | T6TS | Aggregated | Aggregated | GAS | 760.6598136 | 32337.23 | 15219.28 | 7.28636 | 7,286.36 |
| CONTRA COSTA | 2013 | T7 Ag | Aggregated | Aggregated | DSL | 5.27 | 62.84969 | 23.188 | 0.01134 | 11.34 |
| CONTRA COSTA | 2013 | T7 CAIRP | Aggregated | Aggregated | DSL | 354.1637774 | 74492.05 | 5170.791 | 12.6843 | 12,684.30 |
| CONTRA COSTA | 2013 | T7 CAIRP c | Aggregated | Aggregated | DSL | 49.86301268 | 11528.63 | 225.4287 | 2.34902 | 2,349.02 |
| CONTRA COSTA | 2013 | T7 NNOOS | Aggregated | Aggregated | DSL | 383.7221341 | 90701.64 | 5602.343 | 15.50132 | 15,501.32 |
| CONTRA COSTA | 2013 | T7 NOOS | Aggregated | Aggregated | DSL | 139.1038024 | 29264.62 | 2030.916 | 5.04446 | 5,044.46 |
| CONTRA COSTA | 2013 | T7 other p | Aggregated | Aggregated | DSL | 49.58139898 | 7232.277 | 376.8186 | 1.49243 | 1,492.43 |
| CONTRA COSTA | 2013 | T7 POAK | Aggregated | Aggregated | DSL | 243.99 | 40054.78 | 1854.324 | 8.27 | 8,270.00 |
| CONTRA COSTA | 2013 | T7 Public | Aggregated | Aggregated | DSL | 406.48 | 8540.61 | 1232.989 | 1.85099 | 1,850.99 |
| CONTRA COSTA | 2013 | T7 Single | Aggregated | Aggregated | DSL | 672.72 | 35825.34 | 7763.096 | 6.65205 | 6,652.05 |
| CONTRA COSTA | 2013 | T7 single c | Aggregated | Aggregated | DSL | 449.4233055 | 28600.42 | 2031.825 | 5.95144 | 5,951.44 |
| CONTRA COSTA | 2013 | T7 SWCV | Aggregated | Aggregated | DSL | 277.2851089 | 11291.2 | 1081.412 | 5.01941 | 5,019.41 |
| CONTRA COSTA | 2013 | T7 SWCV | Aggregated | Aggregated | NG | 66.01489111 | 2688.161 | 257.4581 | 1.25324 | 1,253.24 |
| CONTRA COSTA | 2013 | T7 tractor | Aggregated | Aggregated | DSL | 1010.64 | 129154.5 | 12835.13 | 20.64023 | 20,640.23 |
| CONTRA COSTA | 2013 | T7 tractor ( | Aggregated | Aggregated | DSL | 344.0004366 | 23592.83 | 1555.213 | 4.89297 | 4,892.97 |
| CONTRA COSTA | 2013 | T7 utility | Aggregated | Aggregated | DSL | 36.81 | 690.0151 | 423.315 | 0.13414 | 134.14 |
| CONTRA COSTA | 2013 | T7IS | Aggregated | Aggregated | GAS | 48.71641503 | 3314.222 | 974.718 | 0.91614 | 916.14 |
| CONTRA COSTA | 2013 | UBUS | Aggregated | Aggregated | GAS | 24 | 2286.135 | 96 | 0.32372 | 323.72 |
| CONTRA COSTA | 2013 | UBUS | Aggregated | Aggregated | DSL | 239 | 22530.72 | 956 | 4.53187 | 4,531.87 |
| CONTRA COSTA | 2014 | All Other B | Aggregated | Aggregated | DSL | 67.16 | 3064.78 | 564.144 | 0.39223 | 392.23 |
| CONTRA COSTA | 2014 | LDA | Aggregated | Aggregated | GAS | 349130.0343 | 12605528 | 1617709 | 477.23076 | 477,230.76 |
| CONTRA COSTA | 2014 | LDA | Aggregated | Aggregated | DSL | 2828.970768 | 105049.9 | 13020.17 | 2.53352 | 2,533.52 |
| CONTRA COSTA | 2014 | LDA | Aggregated | Aggregated | ELEC | 1366.623643 | 48052.42 | 6997.492 | 0 | - |
| CONTRA COSTA | 2014 | LDT1 | Aggregated | Aggregated | GAS | 37458.64979 | 1252051 | 165978.9 | 55.64583 | 55,645.83 |
| CONTRA COSTA | 2014 | LDT1 | Aggregated | Aggregated | DSL | 44.44304529 | 858.1749 | 161.0812 | 0.03809 | 38.09 |
| CONTRA COSTA | 2014 | LDT1 | Aggregated | Aggregated | ELEC | 81.19402505 | 2800.536 | 412.5834 | 0 | - |
| CONTRA COSTA | 2014 | LDT2 | Aggregated | Aggregated | GAS | 122849.1239 | 4727731 | 574517.8 | 231.97989 | 231,979.89 |
| CONTRA COSTA | 2014 | LDT2 | Aggregated | Aggregated | DSL | 194.8656601 | 9562.878 | 985.3038 | 0.31234 | 312.34 |
| CONTRA COSTA | 2014 | LHD1 | Aggregated | Aggregated | GAS | 10728.72207 | 356119.1 | 159842 | 44.70769 | 44,707.69 |
| CONTRA COSTA | 2014 | LHD1 | Aggregated | Aggregated | DSL | 7060.461483 | 255951.2 | 88811.72 | 15.21171 | 15,211.71 |
| CONTRA COSTA | 2014 | LHD2 | Aggregated | Aggregated | GAS | 1216.201028 | 42981.75 | 18119.58 | 6.15249 | 6,152.49 |
| CONTRA COSTA | 2014 | LHD2 | Aggregated | Aggregated | DSL | 2098.224542 | 81443.61 | 26393.03 | 5.43613 | 5,436.13 |
| CONTRA COSTA | 2014 | MCY | Aggregated | Aggregated | GAS | 17896.01779 | 144212.9 | 35792.04 | 3.90002 | 3,900.02 |
| CONTRA COSTA | 2014 | MDV | Aggregated | Aggregated | GAS | 96849.94243 | 3491955 | 448119.4 | 204.72849 | 204,728.49 |
| CONTRA COSTA | 2014 | MDV | Aggregated | Aggregated | DSL | 645.2788307 | 29398.9 | 3195.298 | 1.27299 | 1,272.99 |
| CONTRA COSTA | 2014 | MH | Aggregated | Aggregated | GAS | 2637.523803 | 22736.23 | 263.8579 | 4.98766 | 4,987.66 |

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|---|---|---|---|---|---|---|---|---|---|---|
| CONTRA COSTA | 2014 | MH | Aggregated | Aggregated | DSL | 668.3550272 | 6885.111 | 66.8355 | 0.72622 | 726.22 |
| CONTRA COSTA | 2014 | Motor Coa | Aggregated | Aggregated | DSL | 27.51 | 2997.075 | 401.646 | 0.52778 | 527.78 |
| CONTRA COSTA | 2014 | OBUS | Aggregated | Aggregated | GAS | 320.5027305 | 18529.64 | 6412.619 | 4.09275 | 4,092.75 |
| CONTRA COSTA | 2014 | PTO | Aggregated | Aggregated | DSL | 0 | 7710.912 | 0 | 1.7115 | 1,711.50 |
| CONTRA COSTA | 2014 | SBUS | Aggregated | Aggregated | GAS | 26.49489238 | 1375.549 | 105.9796 | 0.15817 | 158.17 |
| CONTRA COSTA | 2014 | SBUS | Aggregated | Aggregated | DSL | 423.33 | 12872.53 | 4885.17 | 1.67267 | 1,672.67 |
| CONTRA COSTA | 2014 | T6 Ag | Aggregated | Aggregated | DSL | 12.31 | 256.6653 | 54.164 | 0.02804 | 28.04 |
| CONTRA COSTA | 2014 | T6 CAIRP h | Aggregated | Aggregated | DSL | 15.1103752 | 2684.775 | 220.6115 | 0.27696 | 276.96 |
| CONTRA COSTA | 2014 | T6 CAIRP si | Aggregated | Aggregated | DSL | 6.46578821 | 371.4395 | 94.40051 | 0.04031 | 40.31 |
| CONTRA COSTA | 2014 | T6 instate ( | Aggregated | Aggregated | DSL | 241.0618859 | 14367.78 | 1089.831 | 1.91713 | 1,917.13 |
| CONTRA COSTA | 2014 | T6 instate ( | Aggregated | Aggregated | DSL | 523.7819509 | 26292.4 | 2367.998 | 3.49796 | 3,497.96 |
| CONTRA COSTA | 2014 | T6 instate l | Aggregated | Aggregated | DSL | 685.47 | 69242.92 | 7910.229 | 8.10289 | 8,102.89 |
| CONTRA COSTA | 2014 | T6 instate s | Aggregated | Aggregated | DSL | 3014.63 | 128101.4 | 34788.41 | 15.36096 | 15,360.96 |
| CONTRA COSTA | 2014 | T6 OOS hea | Aggregated | Aggregated | DSL | 8.698894356 | 1542.813 | 127.0039 | 0.15913 | 159.13 |
| CONTRA COSTA | 2014 | T6 OOS sm | Aggregated | Aggregated | DSL | 3.733714706 | 214.2692 | 54.51223 | 0.02326 | 23.26 |
| CONTRA COSTA | 2014 | T6 Public | Aggregated | Aggregated | DSL | 503.67 | 7817.284 | 1527.799 | 1.18289 | 1,182.89 |
| CONTRA COSTA | 2014 | T6 utility | Aggregated | Aggregated | DSL | 55.95 | 1022.419 | 643.425 | 0.13069 | 130.69 |
| CONTRA COSTA | 2014 | T6TS | Aggregated | Aggregated | GAS | 743.5663347 | 32681.76 | 14877.28 | 7.32193 | 7,321.93 |
| CONTRA COSTA | 2014 | T7 Ag | Aggregated | Aggregated | DSL | 5.28 | 63.38503 | 23.232 | 0.01144 | 11.44 |
| CONTRA COSTA | 2014 | T7 CAIRP | Aggregated | Aggregated | DSL | 381.6587004 | 76289.78 | 5572.217 | 12.87303 | 12,873.03 |
| CONTRA COSTA | 2014 | T7 CAIRP c | Aggregated | Aggregated | DSL | 46.11873141 | 10320.5 | 208.501 | 2.06878 | 2,068.78 |
| CONTRA COSTA | 2014 | T7 NNOOS | Aggregated | Aggregated | DSL | 435.64045 | 92825.81 | 6360.351 | 15.54334 | 15,543.34 |
| CONTRA COSTA | 2014 | T7 NOOS | Aggregated | Aggregated | DSL | 149.8213082 | 29969.52 | 2187.391 | 5.13347 | 5,133.47 |
| CONTRA COSTA | 2014 | T7 other p | Aggregated | Aggregated | DSL | 51.36895046 | 7460.581 | 390.404 | 1.48711 | 1,487.11 |
| CONTRA COSTA | 2014 | T7 POAK | Aggregated | Aggregated | DSL | 333.97 | 41310.84 | 2538.172 | 8.39074 | 8,390.74 |
| CONTRA COSTA | 2014 | T7 Public | Aggregated | Aggregated | DSL | 416.48 | 8732.575 | 1263.323 | 1.88654 | 1,886.54 |
| CONTRA COSTA | 2014 | T7 Single | Aggregated | Aggregated | DSL | 721.08 | 38833.69 | 8321.163 | 7.04993 | 7,049.93 |
| CONTRA COSTA | 2014 | T7 single c | Aggregated | Aggregated | DSL | 397.7033058 | 25603.27 | 1798.001 | 5.24886 | 5,248.86 |
| CONTRA COSTA | 2014 | T7 SWCV | Aggregated | Aggregated | DSL | 253.071064 | 10327.57 | 986.9771 | 4.58889 | 4,588.89 |
| CONTRA COSTA | 2014 | T7 SWCV | Aggregated | Aggregated | NG | 65.35893598 | 2667.23 | 254.8999 | 1.23889 | 1,238.89 |
| CONTRA COSTA | 2014 | T7 tractor | Aggregated | Aggregated | DSL | 1000.91 | 132412.5 | 12711.56 | 20.78053 | 20,780.53 |
| CONTRA COSTA | 2014 | T7 tractor ( | Aggregated | Aggregated | DSL | 291.8410146 | 21120.44 | 1319.402 | 4.31706 | 4,317.06 |
| CONTRA COSTA | 2014 | T7 utility | Aggregated | Aggregated | DSL | 34.32 | 704.1046 | 394.68 | 0.13156 | 131.56 |
| CONTRA COSTA | 2014 | T7IS | Aggregated | Aggregated | GAS | 26.49489238 | 1612.703 | 530.1098 | 0.44718 | 447.18 |
| CONTRA COSTA | 2014 | UBUS | Aggregated | Aggregated | GAS | 24 | 2337.567 | 96 | 0.33099 | 330.99 |
| CONTRA COSTA | 2014 | UBUS | Aggregated | Aggregated | DSL | 237 | 21873.8 | 948 | 4.16516 | 4,165.16 |
| CONTRA COSTA | 2015 | All Other B | Aggregated | Aggregated | DSL | 74.55 | 3215.501 | 626.22 | 0.41265 | 412.65 |
| CONTRA COSTA | 2015 | LDA | Aggregated | Aggregated | GAS | 356587.9192 | 13306840 | 1655316 | 493.65114 | 493,651.14 |
| CONTRA COSTA | 2015 | LDA | Aggregated | Aggregated | DSL | 3239.214262 | 127818.2 | 15096.06 | 3.01172 | 3,011.72 |
| CONTRA COSTA | 2015 | LDA | Aggregated | Aggregated | ELEC | 2628.12239 | 94693.89 | 13442.63 | 0 | - |
| CONTRA COSTA | 2015 | LDT1 | Aggregated | Aggregated | GAS | 39503.88455 | 1399205 | 176620.5 | 60.40409 | 60,404.09 |
| CONTRA COSTA | 2015 | LDT1 | Aggregated | Aggregated | DSL | 44.44304529 | 847.4685 | 158.0454 | 0.03751 | 37.51 |
| CONTRA COSTA | 2015 | LDT1 | Aggregated | Aggregated | ELEC | 76.06598136 | 2593.308 | 381.9048 | 0 | - |
| CONTRA COSTA | 2015 | LDT2 | Aggregated | Aggregated | GAS | 126091.7569 | 4940888 | 587979.6 | 238.20118 | 238,201.18 |
| CONTRA COSTA | 2015 | LDT2 | Aggregated | Aggregated | DSL | 400.8420816 | 19915.82 | 2013.926 | 0.64177 | 641.77 |
| CONTRA COSTA | 2015 | LDT2 | Aggregated | Aggregated | ELEC | 23.93087054 | 796.1213 | 119.4027 | 0 | - |
| CONTRA COSTA | 2015 | LHD1 | Aggregated | Aggregated | GAS | 10580.0088 | 361656.6 | 157626.4 | 45.28995 | 45,289.95 |
| CONTRA COSTA | 2015 | LHD1 | Aggregated | Aggregated | DSL | 7290.368775 | 273579.3 | 91703.67 | 16.21148 | 16,211.48 |
| CONTRA COSTA | 2015 | LHD2 | Aggregated | Aggregated | GAS | 1199.107549 | 43870.75 | 17864.92 | 6.26299 | 6,262.99 |
| CONTRA COSTA | 2015 | LHD2 | Aggregated | Aggregated | DSL | 2275.142049 | 91472.2 | 28618.42 | 6.08367 | 6,083.67 |
| CONTRA COSTA | 2015 | MCY | Aggregated | Aggregated | GAS | 18665.22435 | 152135.9 | 37330.45 | 4.10259 | 4,102.59 |
| CONTRA COSTA | 2015 | MDV | Aggregated | Aggregated | GAS | 95952.53478 | 3528148 | 442588.2 | 203.91357 | 203,913.57 |
| CONTRA COSTA | 2015 | MDV | Aggregated | Aggregated | DSL | 1081.162544 | 50251.71 | 5357.354 | 2.15002 | 2,150.02 |
| CONTRA COSTA | 2015 | MDV | Aggregated | Aggregated | ELEC | 20.51217475 | 468.3765 | 91.2303 | 0 | - |
| CONTRA COSTA | 2015 | MH | Aggregated | Aggregated | GAS | 2507.613363 | 22159.74 | 250.8616 | 4.83892 | 4,838.92 |
| CONTRA COSTA | 2015 | MH | Aggregated | Aggregated | DSL | 708.5247028 | 7375.019 | 70.85247 | 0.77629 | 776.29 |
| CONTRA COSTA | 2015 | Motor Coa | Aggregated | Aggregated | DSL | 26.84 | 3056.048 | 391.864 | 0.5322 | 532.2 |
| CONTRA COSTA | 2015 | OBUS | Aggregated | Aggregated | GAS | 356.3990363 | 20310.13 | 7130.832 | 4.47997 | 4,479.97 |
| CONTRA COSTA | 2015 | PTO | Aggregated | Aggregated | DSL | 0 | 7748.471 | 0 | 1.69934 | 1,699.34 |
| CONTRA COSTA | 2015 | SBUS | Aggregated | Aggregated | GAS | 30.30572147 | 1614.676 | 121.2229 | 0.18063 | 180.63 |
| CONTRA COSTA | 2015 | SBUS | Aggregated | Aggregated | DSL | 414.71 | 13232.9 | 4785.696 | 1.69454 | 1,694.54 |
| CONTRA COSTA | 2015 | T6 Ag | Aggregated | Aggregated | DSL | 12.31 | 255.8489 | 54.164 | 0.02796 | 27.96 |
| CONTRA COSTA | 2015 | T6 CAIRP h | Aggregated | Aggregated | DSL | 15.85419463 | 2738.364 | 231.4712 | 0.27715 | 277.15 |
| CONTRA COSTA | 2015 | T6 CAIRP si | Aggregated | Aggregated | DSL | 7.068225023 | 379.075 | 103.1961 | 0.04071 | 40.71 |
| CONTRA COSTA | 2015 | T6 instate ( | Aggregated | Aggregated | DSL | 208.1641634 | 12313.75 | 941.1021 | 1.62567 | 1,625.67 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| CONTRA COSTA | 2015 | T6 instate ( | Aggregated | Aggregated | DSL | 476.6300197 | 22533.62 | 2154.826 | 2.97162 | 2,971.62 |
| CONTRA COSTA | 2015 | T6 instate l | Aggregated | Aggregated | DSL | 687.55 | 73341.88 | 7934.232 | 8.45767 | 8,457.67 |
| CONTRA COSTA | 2015 | T6 instate s | Aggregated | Aggregated | DSL | 3073.32 | 131702 | 35465.69 | 15.61359 | 15,613.59 |
| CONTRA COSTA | 2015 | T6 OOS hea | Aggregated | Aggregated | DSL | 9.128066582 | 1573.568 | 133.2698 | 0.15926 | 159.26 |
| CONTRA COSTA | 2015 | T6 OOS sm | Aggregated | Aggregated | DSL | 4.082574001 | 218.482 | 59.60558 | 0.02346 | 23.46 |
| CONTRA COSTA | 2015 | T6 Public | Aggregated | Aggregated | DSL | 527.77 | 7982.029 | 1600.902 | 1.20661 | 1,206.61 |
| CONTRA COSTA | 2015 | T6 utility | Aggregated | Aggregated | DSL | 60.32 | 1033.511 | 693.68 | 0.13082 | 130.82 |
| CONTRA COSTA | 2015 | T6TS | Aggregated | Aggregated | GAS | 726.4728557 | 33008.26 | 14535.27 | 7.35564 | 7,355.64 |
| CONTRA COSTA | 2015 | T7 Ag | Aggregated | Aggregated | DSL | 6.28 | 93.06797 | 27.632 | 0.01647 | 16.47 |
| CONTRA COSTA | 2015 | T7 CAIRP | Aggregated | Aggregated | DSL | 405.8663107 | 77795.29 | 5925.648 | 12.93469 | 12,934.69 |
| CONTRA COSTA | 2015 | T7 CAIRP c | Aggregated | Aggregated | DSL | 43.48959458 | 8845.077 | 196.6148 | 1.73746 | 1,737.46 |
| CONTRA COSTA | 2015 | T7 NNOOS | Aggregated | Aggregated | DSL | 473.97188 | 94686.64 | 6919.989 | 15.49795 | 15,497.95 |
| CONTRA COSTA | 2015 | T7 NOOS | Aggregated | Aggregated | DSL | 159.3492885 | 30559.53 | 2326.5 | 5.1707 | 5,170.70 |
| CONTRA COSTA | 2015 | T7 other p | Aggregated | Aggregated | DSL | 51.58529255 | 7681.382 | 392.0482 | 1.50829 | 1,508.29 |
| CONTRA COSTA | 2015 | T7 POAK | Aggregated | Aggregated | DSL | 376.68 | 39387.78 | 2862.768 | 7.96018 | 7,960.18 |
| CONTRA COSTA | 2015 | T7 Public | Aggregated | Aggregated | DSL | 426.53 | 8662.039 | 1293.808 | 1.86653 | 1,866.53 |
| CONTRA COSTA | 2015 | T7 Single | Aggregated | Aggregated | DSL | 715.13 | 39022.85 | 8252.501 | 6.97431 | 6,974.31 |
| CONTRA COSTA | 2015 | T7 single c | Aggregated | Aggregated | DSL | 361.5986719 | 21943.01 | 1634.774 | 4.43143 | 4,431.43 |
| CONTRA COSTA | 2015 | T7 SWCV | Aggregated | Aggregated | DSL | 224.4451721 | 9095.08 | 875.3362 | 4.02763 | 4,027.63 |
| CONTRA COSTA | 2015 | T7 SWCV | Aggregated | Aggregated | NG | 107.9548279 | 4350.961 | 421.0238 | 1.91756 | 1,917.56 |
| CONTRA COSTA | 2015 | T7 tractor | Aggregated | Aggregated | DSL | 1013.23 | 135173.6 | 12868.02 | 20.82034 | 20,820.34 |
| CONTRA COSTA | 2015 | T7 tractor ( | Aggregated | Aggregated | DSL | 262.7480776 | 18101.05 | 1187.874 | 3.65088 | 3,650.88 |
| CONTRA COSTA | 2015 | T7 utility | Aggregated | Aggregated | DSL | 36.41 | 712.1446 | 418.715 | 0.13167 | 131.67 |
| CONTRA COSTA | 2015 | T7IS | Aggregated | Aggregated | GAS | 11.11076132 | 475.3872 | 222.3041 | 0.13901 | 139.01 |
| CONTRA COSTA | 2015 | UBUS | Aggregated | Aggregated | GAS | 24 | 2343.588 | 96 | 0.33184 | 331.84 |
| CONTRA COSTA | 2015 | UBUS | Aggregated | Aggregated | DSL | 227 | 22462.34 | 908 | 4.21961 | 4,219.61 |
| CONTRA COSTA | 2016 | All Other B | Aggregated | Aggregated | DSL | 81.36 | 3684.116 | 683.424 | 0.46493 | 464.93 |
| CONTRA COSTA | 2016 | LDA | Aggregated | Aggregated | GAS | 361177.5183 | 13806729 | 1680017 | 501.61396 | 501,613.96 |
| CONTRA COSTA | 2016 | LDA | Aggregated | Aggregated | DSL | 3054.60469 | 120045.2 | 14161.14 | 2.81163 | 2,811.63 |
| CONTRA COSTA | 2016 | LDA | Aggregated | Aggregated | ELEC | 3593.903951 | 130265.5 | 18311.91 | 0 | - |
| CONTRA COSTA | 2016 | LDT1 | Aggregated | Aggregated | GAS | 40602.99524 | 1489167 | 182508.6 | 62.78729 | 62,787.29 |
| CONTRA COSTA | 2016 | LDT1 | Aggregated | Aggregated | DSL | 47.00706713 | 871.5853 | 164.2039 | 0.03839 | 38.39 |
| CONTRA COSTA | 2016 | LDT1 | Aggregated | Aggregated | ELEC | 66.66456794 | 2221.084 | 330.4185 | 0 | - |
| CONTRA COSTA | 2016 | LDT2 | Aggregated | Aggregated | GAS | 129803.6058 | 5180206 | 605209.5 | 243.69415 | 243,694.15 |
| CONTRA COSTA | 2016 | LDT2 | Aggregated | Aggregated | DSL | 446.1398008 | 22152.87 | 2230.415 | 0.70553 | 705.53 |
| CONTRA COSTA | 2016 | LDT2 | Aggregated | Aggregated | ELEC | 149.5679409 | 5571.558 | 770.3819 | 0 | - |
| CONTRA COSTA | 2016 | LHD1 | Aggregated | Aggregated | GAS | 11257.76524 | 412320.2 | 167723.9 | 51.27735 | 51,277.35 |
| CONTRA COSTA | 2016 | LHD1 | Aggregated | Aggregated | DSL | 7837.360102 | 308623.9 | 98584.13 | 18.14133 | 18,141.33 |
| CONTRA COSTA | 2016 | LHD2 | Aggregated | Aggregated | GAS | 1208.508962 | 44302.72 | 18004.98 | 6.31416 | 6,314.16 |
| CONTRA COSTA | 2016 | LHD2 | Aggregated | Aggregated | DSL | 2366.592162 | 95479.34 | 29768.75 | 6.32481 | 6,324.81 |
| CONTRA COSTA | 2016 | MCY | Aggregated | Aggregated | GAS | 18676.33511 | 154328.6 | 37352.67 | 4.14854 | 4,148.54 |
| CONTRA COSTA | 2016 | MDV | Aggregated | Aggregated | GAS | 99378.92264 | 3721311 | 458031 | 210.67068 | 210,670.68 |
| CONTRA COSTA | 2016 | MDV | Aggregated | Aggregated | DSL | 1258.934725 | 58770.95 | 6219.276 | 2.47849 | 2,478.49 |
| CONTRA COSTA | 2016 | MDV | Aggregated | Aggregated | ELEC | 20.51217475 | 456.5612 | 90.05516 | 0 | - |
| CONTRA COSTA | 2016 | MH | Aggregated | Aggregated | GAS | 2336.678574 | 20679.25 | 233.7613 | 4.50341 | 4,503.41 |
| CONTRA COSTA | 2016 | MH | Aggregated | Aggregated | DSL | 708.5247028 | 7336.39 | 70.85247 | 0.77108 | 771.08 |
| CONTRA COSTA | 2016 | Motor Coa | Aggregated | Aggregated | DSL | 27.34 | 3342.028 | 399.164 | 0.57121 | 571.21 |
| CONTRA COSTA | 2016 | OBUS | Aggregated | Aggregated | GAS | 330.7588178 | 18396.91 | 6617.822 | 4.05557 | 4,055.57 |
| CONTRA COSTA | 2016 | PTO | Aggregated | Aggregated | DSL | 0 | 9044.745 | 0 | 1.95434 | 1,954.34 |
| CONTRA COSTA | 2016 | SBUS | Aggregated | Aggregated | GAS | 13.98424278 | 757.6511 | 55.93697 | 0.09111 | 91.11 |
| CONTRA COSTA | 2016 | SBUS | Aggregated | Aggregated | DSL | 412.09 | 13319.62 | 4755.461 | 1.68149 | 1,681.49 |
| CONTRA COSTA | 2016 | T6 Ag | Aggregated | Aggregated | DSL | 9.28 | 99.85154 | 40.832 | 0.01126 | 11.26 |
| CONTRA COSTA | 2016 | T6 CAIRP h | Aggregated | Aggregated | DSL | 15.07223062 | 2995.26 | 220.0546 | 0.2987 | 298.7 |
| CONTRA COSTA | 2016 | T6 CAIRP s | Aggregated | Aggregated | DSL | 7.754827568 | 414.3055 | 113.2205 | 0.04364 | 43.64 |
| CONTRA COSTA | 2016 | T6 instate ( | Aggregated | Aggregated | DSL | 186.6884801 | 11950.91 | 844.0114 | 1.5623 | 1,562.30 |
| CONTRA COSTA | 2016 | T6 instate ( | Aggregated | Aggregated | DSL | 466.755445 | 21869.63 | 2110.183 | 2.85424 | 2,854.24 |
| CONTRA COSTA | 2016 | T6 instate l | Aggregated | Aggregated | DSL | 673.74 | 82827.09 | 7774.866 | 9.40745 | 9,407.45 |
| CONTRA COSTA | 2016 | T6 instate s | Aggregated | Aggregated | DSL | 3206.09 | 144591.5 | 36997.83 | 16.90117 | 16,901.17 |
| CONTRA COSTA | 2016 | T6 OOS hea | Aggregated | Aggregated | DSL | 8.667940414 | 1719.995 | 126.5519 | 0.17153 | 171.53 |
| CONTRA COSTA | 2016 | T6 OOS sm | Aggregated | Aggregated | DSL | 4.47409954 | 238.815 | 65.32185 | 0.02516 | 25.16 |
| CONTRA COSTA | 2016 | T6 Public | Aggregated | Aggregated | DSL | 543.8 | 8147.196 | 1649.527 | 1.2287 | 1,228.70 |
| CONTRA COSTA | 2016 | T6 utility | Aggregated | Aggregated | DSL | 63.2 | 1066.962 | 726.8 | 0.13279 | 132.79 |
| CONTRA COSTA | 2016 | T6TS | Aggregated | Aggregated | GAS | 736.7289431 | 34596.78 | 14740.47 | 7.65257 | 7,652.57 |
| CONTRA COSTA | 2016 | T7 Ag | Aggregated | Aggregated | DSL | 7.18 | 77.92981 | 31.592 | 0.01428 | 14.28 |
| CONTRA COSTA | 2016 | T7 CAIRP | Aggregated | Aggregated | DSL | 422.838415 | 85021.5 | 6173.441 | 13.82736 | 13,827.36 |

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|---|---|---|---|---|---|---|---|---|---|---|
| CONTRA COSTA | 2016 | T7 CAIRP c | Aggregated | Aggregated | DSL | 42.66372774 | 8584.44 | 192.8811 | 1.65187 | 1,651.87 |
| CONTRA COSTA | 2016 | T7 NNOOS | Aggregated | Aggregated | DSL | 497.9422315 | 103656 | 7269.957 | 16.45758 | 16,457.58 |
| CONTRA COSTA | 2016 | T7 NOOS | Aggregated | Aggregated | DSL | 166.092234 | 33400.32 | 2424.947 | 5.53016 | 5,530.16 |
| CONTRA COSTA | 2016 | T7 other pc | Aggregated | Aggregated | DSL | 51.80004314 | 8385.967 | 393.6803 | 1.62452 | 1,624.52 |
| CONTRA COSTA | 2016 | T7 POAK | Aggregated | Aggregated | DSL | 423.01 | 42852.83 | 3214.876 | 8.57994 | 8,579.94 |
| CONTRA COSTA | 2016 | T7 Public | Aggregated | Aggregated | DSL | 455.63 | 9206.957 | 1382.078 | 1.9594 | 1,959.40 |
| CONTRA COSTA | 2016 | T7 Single | Aggregated | Aggregated | DSL | 722.01 | 45551.14 | 8331.895 | 7.9429 | 7,942.90 |
| CONTRA COSTA | 2016 | T7 single c | Aggregated | Aggregated | DSL | 330.6149929 | 21296.42 | 1494.698 | 4.22369 | 4,223.69 |
| CONTRA COSTA | 2016 | T7 SWCV | Aggregated | Aggregated | DSL | 211.7119287 | 8632.102 | 825.6765 | 3.81026 | 3,810.26 |
| CONTRA COSTA | 2016 | T7 SWCV | Aggregated | Aggregated | NG | 147.5080713 | 5912.628 | 575.2815 | 2.54878 | 2,548.78 |
| CONTRA COSTA | 2016 | T7 tractor | Aggregated | Aggregated | DSL | 1040.31 | 147828.8 | 13211.94 | 22.38392 | 22,383.92 |
| CONTRA COSTA | 2016 | T7 tractor ( | Aggregated | Aggregated | DSL | 256.0169481 | 17567.67 | 1157.443 | 3.50628 | 3,506.28 |
| CONTRA COSTA | 2016 | T7 utility | Aggregated | Aggregated | DSL | 36.22 | 734.6852 | 416.53 | 0.13411 | 134.11 |
| CONTRA COSTA | 2016 | T7IS | Aggregated | Aggregated | GAS | 6.837391583 | 251.8693 | 136.8025 | 0.07374 | 73.74 |
| CONTRA COSTA | 2016 | UBUS | Aggregated | Aggregated | GAS | 24.24704529 | 2367.711 | 96.98818 | 0.33512 | 335.12 |
| CONTRA COSTA | 2016 | UBUS | Aggregated | Aggregated | DSL | 220.8941617 | 22003.01 | 883.5766 | 4.00018 | 4,000.18 |
| CONTRA COSTA | 2016 | UBUS | Aggregated | Aggregated | NG | 8.442474938 | 690.5504 | 33.7699 | 0.1817 | 181.7 |
| CONTRA COSTA | 2017 | All Other B | Aggregated | Aggregated | DSL | 83.4068628 | 4154.943 | 700.6176 | 0.49614 | 496.14 |
| CONTRA COSTA | 2017 | LDA | Aggregated | Aggregated | GAS | 366794.8011 | 13912496 | 1708865 | 494.65661 | 494,656.61 |
| CONTRA COSTA | 2017 | LDA | Aggregated | Aggregated | DSL | 3244.330377 | 126735.9 | 15086.05 | 2.90661 | 2,906.61 |
| CONTRA COSTA | 2017 | LDA | Aggregated | Aggregated | ELEC | 4382.56265 | 160722.7 | 22185.49 | 0 | - |
| CONTRA COSTA | 2017 | LDT1 | Aggregated | Aggregated | GAS | 40620.27016 | 1484524 | 183186.2 | 61.33408 | 61,334.08 |
| CONTRA COSTA | 2017 | LDT1 | Aggregated | Aggregated | DSL | 42.3448641 | 759.838 | 146.2376 | 0.03341 | 33.41 |
| CONTRA COSTA | 2017 | LDT1 | Aggregated | Aggregated | ELEC | 72.19942387 | 2440.006 | 355.8275 | 0 | - |
| CONTRA COSTA | 2017 | LDT2 | Aggregated | Aggregated | GAS | 130472.8123 | 5122488 | 607705.3 | 235.55576 | 235,555.76 |
| CONTRA COSTA | 2017 | LDT2 | Aggregated | Aggregated | DSL | 517.1705543 | 24958.1 | 2576.307 | 0.78154 | 781.54 |
| CONTRA COSTA | 2017 | LDT2 | Aggregated | Aggregated | ELEC | 268.4586599 | 9759.091 | 1378.403 | 0 | - |
| CONTRA COSTA | 2017 | LHD1 | Aggregated | Aggregated | GAS | 11145.60092 | 404005.6 | 166052.8 | 50.01677 | 50,016.77 |
| CONTRA COSTA | 2017 | LHD1 | Aggregated | Aggregated | DSL | 8012.558106 | 310952.4 | 100787.9 | 18.15067 | 18,150.67 |
| CONTRA COSTA | 2017 | LHD2 | Aggregated | Aggregated | GAS | 1203.139953 | 43549.34 | 17924.99 | 6.17771 | 6,177.71 |
| CONTRA COSTA | 2017 | LHD2 | Aggregated | Aggregated | DSL | 2442.153717 | 96885.79 | 30719.22 | 6.36902 | 6,369.02 |
| CONTRA COSTA | 2017 | MCY | Aggregated | Aggregated | GAS | 18823.41126 | 151982.8 | 37646.82 | 4.08421 | 4,084.21 |
| CONTRA COSTA | 2017 | MDV | Aggregated | Aggregated | GAS | 99122.69641 | 3639157 | 455604.9 | 202.45611 | 202,456.11 |
| CONTRA COSTA | 2017 | MDV | Aggregated | Aggregated | DSL | 1405.774019 | 63902.26 | 6922.822 | 2.64833 | 2,648.33 |
| CONTRA COSTA | 2017 | MDV | Aggregated | Aggregated | ELEC | 34.11789083 | 967.0173 | 160.7719 | 0 | - |
| CONTRA COSTA | 2017 | MH | Aggregated | Aggregated | GAS | 2260.040387 | 19850.48 | 226.0944 | 4.29562 | 4,295.62 |
| CONTRA COSTA | 2017 | MH | Aggregated | Aggregated | DSL | 719.580572 | 7217.508 | 71.95806 | 0.75559 | 755.59 |
| CONTRA COSTA | 2017 | Motor Coa | Aggregated | Aggregated | DSL | 27.65030942 | 3442.731 | 403.6945 | 0.58035 | 580.35 |
| CONTRA COSTA | 2017 | OBUS | Aggregated | Aggregated | GAS | 322.308504 | 17216.75 | 6448.749 | 3.77713 | 3,777.13 |
| CONTRA COSTA | 2017 | PTO | Aggregated | Aggregated | DSL | 0 | 9166.133 | 0 | 1.96382 | 1,963.82 |
| CONTRA COSTA | 2017 | SBUS | Aggregated | Aggregated | GAS | 18.10302271 | 967.2598 | 72.41209 | 0.10685 | 106.85 |
| CONTRA COSTA | 2017 | SBUS | Aggregated | Aggregated | DSL | 515.3101877 | 16773.29 | 5946.608 | 2.04667 | 2,046.67 |
| CONTRA COSTA | 2017 | T6 Ag | Aggregated | Aggregated | DSL | 9.263664461 | 98.49596 | 40.76012 | 0.0111 | 11.1 |
| CONTRA COSTA | 2017 | T6 CAIRP h | Aggregated | Aggregated | DSL | 15.34835631 | 3110.863 | 224.086 | 0.30345 | 303.45 |
| CONTRA COSTA | 2017 | T6 CAIRP s | Aggregated | Aggregated | DSL | 7.979117217 | 428.0619 | 116.4951 | 0.04421 | 44.21 |
| CONTRA COSTA | 2017 | T6 instate ( | Aggregated | Aggregated | DSL | 170.4376958 | 11155.31 | 770.5422 | 1.44253 | 1,442.53 |
| CONTRA COSTA | 2017 | T6 instate ( | Aggregated | Aggregated | DSL | 417.9138868 | 20413.72 | 1889.372 | 2.63776 | 2,637.76 |
| CONTRA COSTA | 2017 | T6 instate l | Aggregated | Aggregated | DSL | 665.0608602 | 83913.37 | 7674.71 | 9.32409 | 9,324.09 |
| CONTRA COSTA | 2017 | T6 instate s | Aggregated | Aggregated | DSL | 3064.371429 | 143373.1 | 35362.42 | 16.48785 | 16,487.85 |
| CONTRA COSTA | 2017 | T6 OOS he | Aggregated | Aggregated | DSL | 8.695765973 | 1770.705 | 126.9582 | 0.17291 | 172.91 |
| CONTRA COSTA | 2017 | T6 OOS sm | Aggregated | Aggregated | DSL | 4.619495247 | 247.2917 | 67.44463 | 0.02554 | 25.54 |
| CONTRA COSTA | 2017 | T6 Public | Aggregated | Aggregated | DSL | 574.3466766 | 8769.455 | 1742.185 | 1.27949 | 1,279.49 |
| CONTRA COSTA | 2017 | T6 utility | Aggregated | Aggregated | DSL | 64.13582491 | 1076.117 | 737.562 | 0.13131 | 131.31 |
| CONTRA COSTA | 2017 | T6TS | Aggregated | Aggregated | GAS | 724.6441154 | 35296.7 | 14498.68 | 7.7042 | 7,704.20 |
| CONTRA COSTA | 2017 | T7 Ag | Aggregated | Aggregated | DSL | 6.995101451 | 72.35823 | 30.77845 | 0.01328 | 13.28 |
| CONTRA COSTA | 2017 | T7 CAIRP | Aggregated | Aggregated | DSL | 436.0389409 | 87557.67 | 6366.169 | 13.97256 | 13,972.56 |
| CONTRA COSTA | 2017 | T7 CAIRP c | Aggregated | Aggregated | DSL | 39.84127435 | 8012.954 | 180.1209 | 1.51046 | 1,510.46 |
| CONTRA COSTA | 2017 | T7 NNOOS | Aggregated | Aggregated | DSL | 511.5711654 | 106748.3 | 7468.939 | 16.58887 | 16,588.87 |
| CONTRA COSTA | 2017 | T7 NOOS | Aggregated | Aggregated | DSL | 171.1736948 | 34397.56 | 2499.136 | 5.59728 | 5,597.28 |
| CONTRA COSTA | 2017 | T7 other pc | Aggregated | Aggregated | DSL | 53.34405746 | 8734.39 | 405.4148 | 1.66119 | 1,661.19 |
| CONTRA COSTA | 2017 | T7 POAK | Aggregated | Aggregated | DSL | 434.7528724 | 45244.62 | 3304.122 | 8.9248 | 8,924.80 |
| CONTRA COSTA | 2017 | T7 Public | Aggregated | Aggregated | DSL | 460.1179322 | 9265.945 | 1395.691 | 1.90179 | 1,901.79 |
| CONTRA COSTA | 2017 | T7 Single | Aggregated | Aggregated | DSL | 710.1781879 | 46162.48 | 8195.358 | 7.95275 | 7,952.75 |
| CONTRA COSTA | 2017 | T7 single c | Aggregated | Aggregated | DSL | 296.6018739 | 19878.67 | 1340.926 | 3.89323 | 3,893.23 |
| CONTRA COSTA | 2017 | T7 SWCV | Aggregated | Aggregated | DSL | 204.4209155 | 8352.307 | 797.2416 | 3.68088 | 3,680.88 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| CONTRA COSTA | 2017 | T7 SWCV | Aggregated | Aggregated | NG | 171.6220457 | 6984.002 | 669.326 | 2.97945 | 2,979.45 |
| CONTRA COSTA | 2017 | T7 tractor | Aggregated | Aggregated | DSL | 1064.577557 | 152996.2 | 13520.13 | 22.7365 | 22,736.50 |
| CONTRA COSTA | 2017 | T7 tractor ( | Aggregated | Aggregated | DSL | 234.8612872 | 16398.15 | 1061.799 | 3.24006 | 3,240.06 |
| CONTRA COSTA | 2017 | T7 utility | Aggregated | Aggregated | DSL | 36.53144607 | 741.1807 | 420.1116 | 0.13463 | 134.63 |
| CONTRA COSTA | 2017 | T7IS | Aggregated | Aggregated | GAS | 4.962971263 | 239.9344 | 99.29913 | 0.0662 | 66.2 |
| CONTRA COSTA | 2017 | UBUS | Aggregated | Aggregated | GAS | 24.49409057 | 2391.835 | 97.97636 | 0.33833 | 338.33 |
| CONTRA COSTA | 2017 | UBUS | Aggregated | Aggregated | DSL | 201.5504785 | 20294.9 | 806.2019 | 3.39289 | 3,392.89 |
| CONTRA COSTA | 2017 | UBUS | Aggregated | Aggregated | NG | 30.12279482 | 2629.877 | 120.4912 | 0.62746 | 627.46 |
| CONTRA COSTA | 2018 | All Other B | Aggregated | Aggregated | DSL | 85.55299851 | 4472.363 | 718.6452 | 0.52232 | 522.32 |
| CONTRA COSTA | 2018 | LDA | Aggregated | Aggregated | GAS | 373599.9393 | 14150673 | 1743466 | 491.50474 | 491,504.74 |
| CONTRA COSTA | 2018 | LDA | Aggregated | Aggregated | DSL | 3466.62088 | 135364.3 | 16164.14 | 3.03539 | 3,035.39 |
| CONTRA COSTA | 2018 | LDA | Aggregated | Aggregated | ELEC | 5130.704603 | 191433.5 | 25810.42 | 0 | - |
| CONTRA COSTA | 2018 | LDT1 | Aggregated | Aggregated | GAS | 40764.00147 | 1493490 | 184452.7 | 60.36795 | 60,367.95 |
| CONTRA COSTA | 2018 | LDT1 | Aggregated | Aggregated | DSL | 38.28203925 | 671.6343 | 130.8223 | 0.02941 | 29.41 |
| CONTRA COSTA | 2018 | LDT1 | Aggregated | Aggregated | ELEC | 77.82431622 | 2684.342 | 381.5659 | 0 | - |
| CONTRA COSTA | 2018 | LDT2 | Aggregated | Aggregated | GAS | 131298.2958 | 5106869 | 611037 | 228.97343 | 228,973.43 |
| CONTRA COSTA | 2018 | LDT2 | Aggregated | Aggregated | DSL | 592.7127103 | 27997.2 | 2941.655 | 0.85974 | 859.74 |
| CONTRA COSTA | 2018 | LDT2 | Aggregated | Aggregated | ELEC | 387.6481047 | 13777.73 | 1981.48 | 0 | - |
| CONTRA COSTA | 2018 | LHD1 | Aggregated | Aggregated | GAS | 10929.50074 | 392199.7 | 162833.3 | 48.24565 | 48,245.65 |
| CONTRA COSTA | 2018 | LHD1 | Aggregated | Aggregated | DSL | 8110.816726 | 310766.5 | 102023.9 | 17.94129 | 17,941.29 |
| CONTRA COSTA | 2018 | LHD2 | Aggregated | Aggregated | GAS | 1212.103559 | 43921.41 | 18058.54 | 6.17602 | 6,176.02 |
| CONTRA COSTA | 2018 | LHD2 | Aggregated | Aggregated | DSL | 2529.091825 | 99411.88 | 31812.79 | 6.44981 | 6,449.81 |
| CONTRA COSTA | 2018 | MCY | Aggregated | Aggregated | GAS | 18992.38886 | 151110.2 | 37984.78 | 4.05773 | 4,057.73 |
| CONTRA COSTA | 2018 | MDV | Aggregated | Aggregated | GAS | 98792.38028 | 3583353 | 453039.9 | 195.36493 | 195,364.93 |
| CONTRA COSTA | 2018 | MDV | Aggregated | Aggregated | DSL | 1557.264492 | 69374.39 | 7642.738 | 2.81852 | 2,818.52 |
| CONTRA COSTA | 2018 | MDV | Aggregated | Aggregated | ELEC | 50.22478233 | 1547.538 | 243.743 | 0 | - |
| CONTRA COSTA | 2018 | MH | Aggregated | Aggregated | GAS | 2184.111644 | 19231.11 | 218.4985 | 4.13334 | 4,133.34 |
| CONTRA COSTA | 2018 | MH | Aggregated | Aggregated | DSL | 731.6151015 | 7177.841 | 73.16151 | 0.74811 | 748.11 |
| CONTRA COSTA | 2018 | Motor Coa | Aggregated | Aggregated | DSL | 28.28401703 | 3547.321 | 412.9466 | 0.59028 | 590.28 |
| CONTRA COSTA | 2018 | OBUS | Aggregated | Aggregated | GAS | 315.7443103 | 16455.91 | 6317.412 | 3.58661 | 3,586.61 |
| CONTRA COSTA | 2018 | PTO | Aggregated | Aggregated | DSL | 0 | 9301.153 | 0 | 1.9793 | 1,979.30 |
| CONTRA COSTA | 2018 | SBUS | Aggregated | Aggregated | GAS | 24.76787186 | 1312.424 | 99.07149 | 0.1421 | 142.1 |
| CONTRA COSTA | 2018 | SBUS | Aggregated | Aggregated | DSL | 561.9158558 | 18520.88 | 6484.431 | 2.22311 | 2,223.11 |
| CONTRA COSTA | 2018 | T6 Ag | Aggregated | Aggregated | DSL | 9.2324075 | 96.52313 | 40.62259 | 0.01089 | 10.89 |
| CONTRA COSTA | 2018 | T6 CAIRP h | Aggregated | Aggregated | DSL | 15.9854985 | 3239.198 | 233.3883 | 0.31006 | 310.06 |
| CONTRA COSTA | 2018 | T6 CAIRP si | Aggregated | Aggregated | DSL | 8.267647233 | 442.7101 | 120.7076 | 0.04487 | 44.87 |
| CONTRA COSTA | 2018 | T6 instate ( | Aggregated | Aggregated | DSL | 154.5345145 | 10261.89 | 698.6445 | 1.31429 | 1,314.29 |
| CONTRA COSTA | 2018 | T6 instate ( | Aggregated | Aggregated | DSL | 378.0743126 | 18778.81 | 1709.259 | 2.4034 | 2,403.40 |
| CONTRA COSTA | 2018 | T6 instate l | Aggregated | Aggregated | DSL | 664.576173 | 84426.4 | 7669.117 | 9.2313 | 9,231.30 |
| CONTRA COSTA | 2018 | T6 instate s | Aggregated | Aggregated | DSL | 3038.519233 | 141959.7 | 35064.09 | 16.14886 | 16,148.86 |
| CONTRA COSTA | 2018 | T6 OOS hea | Aggregated | Aggregated | DSL | 9.006405496 | 1823.262 | 131.4935 | 0.17483 | 174.83 |
| CONTRA COSTA | 2018 | T6 OOS sm | Aggregated | Aggregated | DSL | 4.807241369 | 256.6192 | 70.18572 | 0.02601 | 26.01 |
| CONTRA COSTA | 2018 | T6 Public | Aggregated | Aggregated | DSL | 589.7286925 | 9114.535 | 1788.844 | 1.30465 | 1,304.65 |
| CONTRA COSTA | 2018 | T6 utility | Aggregated | Aggregated | DSL | 64.81893317 | 1085.068 | 745.4177 | 0.12994 | 129.94 |
| CONTRA COSTA | 2018 | T6TS | Aggregated | Aggregated | GAS | 725.4496218 | 36771.31 | 14514.8 | 7.92337 | 7,923.37 |
| CONTRA COSTA | 2018 | T7 Ag | Aggregated | Aggregated | DSL | 6.877656341 | 67.63957 | 30.26169 | 0.01247 | 12.47 |
| CONTRA COSTA | 2018 | T7 CAIRP | Aggregated | Aggregated | DSL | 462.0671784 | 90201.88 | 6746.181 | 14.16079 | 14,160.79 |
| CONTRA COSTA | 2018 | T7 CAIRP c | Aggregated | Aggregated | DSL | 37.56551737 | 7371.206 | 169.8322 | 1.35931 | 1,359.31 |
| CONTRA COSTA | 2018 | T7 NNOOS | Aggregated | Aggregated | DSL | 532.6592717 | 109972.3 | 7776.825 | 16.79793 | 16,797.93 |
| CONTRA COSTA | 2018 | T7 NOOS | Aggregated | Aggregated | DSL | 181.8125004 | 35437.2 | 2654.463 | 5.68092 | 5,680.92 |
| CONTRA COSTA | 2018 | T7 other p | Aggregated | Aggregated | DSL | 55.30281454 | 8979.258 | 420.3014 | 1.69205 | 1,692.05 |
| CONTRA COSTA | 2018 | T7 POAK | Aggregated | Aggregated | DSL | 446.5722933 | 47643.62 | 3393.949 | 9.33239 | 9,332.39 |
| CONTRA COSTA | 2018 | T7 Public | Aggregated | Aggregated | DSL | 458.5203733 | 9296.203 | 1390.845 | 1.88705 | 1,887.05 |
| CONTRA COSTA | 2018 | T7 Single | Aggregated | Aggregated | DSL | 707.78874 | 46842.47 | 8167.784 | 7.99538 | 7,995.38 |
| CONTRA COSTA | 2018 | T7 single c | Aggregated | Aggregated | DSL | 267.3380778 | 18286.61 | 1208.625 | 3.54768 | 3,547.68 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| CONTRA COSTA | 2018 | T7 SWCV | Aggregated | Aggregated | DSL | 197.7041541 | 8077.871 | 771.0462 | 3.55603 | 3,556.03 |
| CONTRA COSTA | 2018 | T7 SWCV | Aggregated | Aggregated | NG | 181.0195758 | 7388.862 | 705.9763 | 3.14061 | 3,140.61 |
| CONTRA COSTA | 2018 | T7 tractor | Aggregated | Aggregated | DSL | 1110.429375 | 158343.9 | 14102.45 | 23.18579 | 23,185.79 |
| CONTRA COSTA | 2018 | T7 tractor ( | Aggregated | Aggregated | DSL | 215.4804692 | 15084.84 | 974.1788 | 2.95061 | 2,950.61 |
| CONTRA COSTA | 2018 | T7 utility | Aggregated | Aggregated | DSL | 36.81728326 | 747.6193 | 423.3988 | 0.13513 | 135.13 |
| CONTRA COSTA | 2018 | T7IS | Aggregated | Aggregated | GAS | 3.98911206 | 242.4244 | 79.81415 | 0.06399 | 63.99 |
| CONTRA COSTA | 2018 | UBUS | Aggregated | Aggregated | GAS | 24.74113586 | 2415.959 | 98.96454 | 0.3414 | 341.4 |
| CONTRA COSTA | 2018 | UBUS | Aggregated | Aggregated | DSL | 202.3513419 | 20376.56 | 809.4054 | 3.39217 | 3,392.17 |
| CONTRA COSTA | 2018 | UBUS | Aggregated | Aggregated | NG | 31.65856805 | 2779.434 | 126.6343 | 0.66575 | 665.75 |
| CONTRA COSTA | 2019 | All Other B | Aggregated | Aggregated | DSL | 89.11760678 | 4862.503 | 748.5879 | 0.5596 | 559.6 |
| CONTRA COSTA | 2019 | LDA | Aggregated | Aggregated | GAS | 381170.8605 | 14392068 | 1781566 | 487.77381 | 487,773.81 |
| CONTRA COSTA | 2019 | LDA | Aggregated | Aggregated | DSL | 3696.441888 | 143641.3 | 17265.86 | 3.14813 | 3,148.13 |
| CONTRA COSTA | 2019 | LDA | Aggregated | Aggregated | ELEC | 5857.551777 | 221867.3 | 29292.26 | 0 | - |
| CONTRA COSTA | 2019 | LDT1 | Aggregated | Aggregated | GAS | 41051.20685 | 1504231 | 186320.7 | 59.42755 | 59,427.55 |
| CONTRA COSTA | 2019 | LDT1 | Aggregated | Aggregated | DSL | 34.7119524 | 597.2925 | 117.4936 | 0.02599 | 25.99 |
| CONTRA COSTA | 2019 | LDT1 | Aggregated | Aggregated | ELEC | 93.83734624 | 3376.935 | 461.1449 | 0 | - |
| CONTRA COSTA | 2019 | LDT2 | Aggregated | Aggregated | GAS | 132221.2108 | 5092681 | 614998.2 | 222.13236 | 222,132.36 |
| CONTRA COSTA | 2019 | LDT2 | Aggregated | Aggregated | DSL | 666.3081168 | 30857.16 | 3300.276 | 0.92699 | 926.99 |
| CONTRA COSTA | 2019 | LDT2 | Aggregated | Aggregated | ELEC | 510.3661542 | 17689.52 | 2595.996 | 0 | - |
| CONTRA COSTA | 2019 | LHD1 | Aggregated | Aggregated | GAS | 10733.68695 | 381392.3 | 159915.9 | 46.59752 | 46,597.52 |
| CONTRA COSTA | 2019 | LHD1 | Aggregated | Aggregated | DSL | 8211.239355 | 310830 | 103287.1 | 17.74423 | 17,744.23 |
| CONTRA COSTA | 2019 | LHD2 | Aggregated | Aggregated | GAS | 1221.923066 | 44207.19 | 18204.83 | 6.16081 | 6,160.81 |
| CONTRA COSTA | 2019 | LHD2 | Aggregated | Aggregated | DSL | 2616.782328 | 101721.7 | 32915.83 | 6.51595 | 6,515.95 |
| CONTRA COSTA | 2019 | MCY | Aggregated | Aggregated | GAS | 19176.39432 | 150408.4 | 38352.79 | 4.03622 | 4,036.22 |
| CONTRA COSTA | 2019 | MDV | Aggregated | Aggregated | GAS | 98478.85262 | 3530617 | 450824.8 | 188.14549 | 188,145.49 |
| CONTRA COSTA | 2019 | MDV | Aggregated | Aggregated | DSL | 1709.049073 | 74502.75 | 8357.336 | 2.9613 | 2,961.30 |
| CONTRA COSTA | 2019 | MDV | Aggregated | Aggregated | ELEC | 94.83239198 | 3149.281 | 473.8702 | 0 | - |
| CONTRA COSTA | 2019 | MH | Aggregated | Aggregated | GAS | 2122.454997 | 18727.8 | 212.3304 | 3.99957 | 3,999.57 |
| CONTRA COSTA | 2019 | MH | Aggregated | Aggregated | DSL | 743.7133458 | 7147.685 | 74.37133 | 0.74172 | 741.72 |
| CONTRA COSTA | 2019 | Motor Coa | Aggregated | Aggregated | DSL | 28.8551684 | 3642.716 | 421.2855 | 0.59865 | 598.65 |
| CONTRA COSTA | 2019 | OBUS | Aggregated | Aggregated | GAS | 310.7189303 | 15789.3 | 6216.864 | 3.41887 | 3,418.87 |
| CONTRA COSTA | 2019 | PTO | Aggregated | Aggregated | DSL | 0 | 9401.304 | 0 | 1.98599 | 1,985.99 |
| CONTRA COSTA | 2019 | SBUS | Aggregated | Aggregated | GAS | 31.34723441 | 1645.005 | 125.3889 | 0.17581 | 175.81 |
| CONTRA COSTA | 2019 | SBUS | Aggregated | Aggregated | DSL | 620.7515918 | 20427.45 | 7163.387 | 2.41823 | 2,418.23 |
| CONTRA COSTA | 2019 | T6 Ag | Aggregated | Aggregated | DSL | 9.264656379 | 94.0433 | 40.76449 | 0.01063 | 10.63 |
| CONTRA COSTA | 2019 | T6 CAIRP h | Aggregated | Aggregated | DSL | 16.64269689 | 3360.957 | 242.9834 | 0.31607 | 316.07 |
| CONTRA COSTA | 2019 | T6 CAIRP si | Aggregated | Aggregated | DSL | 8.555842519 | 456.258 | 124.9153 | 0.04548 | 45.48 |
| CONTRA COSTA | 2019 | T6 instate ( | Aggregated | Aggregated | DSL | 137.8591931 | 9270.661 | 623.2561 | 1.17827 | 1,178.27 |
| CONTRA COSTA | 2019 | T6 instate ( | Aggregated | Aggregated | DSL | 336.4634576 | 16964.9 | 1521.138 | 2.15122 | 2,151.22 |
| CONTRA COSTA | 2019 | T6 instate l | Aggregated | Aggregated | DSL | 669.7097492 | 84930.54 | 7728.358 | 9.15039 | 9,150.39 |
| CONTRA COSTA | 2019 | T6 instate s | Aggregated | Aggregated | DSL | 3007.132346 | 139849.4 | 34701.89 | 15.73823 | 15,738.23 |
| CONTRA COSTA | 2019 | T6 OOS hea | Aggregated | Aggregated | DSL | 9.311912913 | 1871.14 | 135.9539 | 0.17635 | 176.35 |
| CONTRA COSTA | 2019 | T6 OOS sm | Aggregated | Aggregated | DSL | 5.00172086 | 265.3542 | 73.02512 | 0.02645 | 26.45 |
| CONTRA COSTA | 2019 | T6 Public | Aggregated | Aggregated | DSL | 606.3588709 | 9441.387 | 1839.289 | 1.3291 | 1,329.10 |
| CONTRA COSTA | 2019 | T6 utility | Aggregated | Aggregated | DSL | 65.46833656 | 1093.963 | 752.8859 | 0.1287 | 128.7 |
| CONTRA COSTA | 2019 | T6TS | Aggregated | Aggregated | GAS | 734.4478661 | 38445 | 14694.83 | 8.19244 | 8,192.44 |
| CONTRA COSTA | 2019 | T7 Ag | Aggregated | Aggregated | DSL | 6.800515661 | 63.83698 | 29.92227 | 0.01182 | 11.82 |
| CONTRA COSTA | 2019 | T7 CAIRP | Aggregated | Aggregated | DSL | 493.1500955 | 92617.87 | 7199.991 | 14.29271 | 14,292.71 |
| CONTRA COSTA | 2019 | T7 CAIRP c | Aggregated | Aggregated | DSL | 35.0981757 | 6659.196 | 158.6775 | 1.20021 | 1,200.21 |
| CONTRA COSTA | 2019 | T7 NNOOS | Aggregated | Aggregated | DSL | 553.4225804 | 112918.2 | 8079.97 | 16.97382 | 16,973.82 |
| CONTRA COSTA | 2019 | T7 NOOS | Aggregated | Aggregated | DSL | 194.2472006 | 36386.99 | 2836.009 | 5.742 | 5,742.00 |
| CONTRA COSTA | 2019 | T7 other p | Aggregated | Aggregated | DSL | 57.93293474 | 9371.891 | 440.2903 | 1.75936 | 1,759.36 |
| CONTRA COSTA | 2019 | T7 POAK | Aggregated | Aggregated | DSL | 458.1643468 | 50044.56 | 3482.049 | 9.7781 | 9,778.10 |
| CONTRA COSTA | 2019 | T7 Public | Aggregated | Aggregated | DSL | 459.5911718 | 9313.823 | 1394.093 | 1.87142 | 1,871.42 |
| CONTRA COSTA | 2019 | T7 Single | Aggregated | Aggregated | DSL | 706.7264644 | 47346.85 | 8155.525 | 8.00379 | 8,003.79 |
| CONTRA COSTA | 2019 | T7 single c | Aggregated | Aggregated | DSL | 237.5736783 | 16520.24 | 1074.061 | 3.17593 | 3,175.93 |
| CONTRA COSTA | 2019 | T7 SWCV | Aggregated | Aggregated | DSL | 190.0580129 | 7765.462 | 741.2263 | 3.41543 | 3,415.43 |
| CONTRA COSTA | 2019 | T7 SWCV | Aggregated | Aggregated | NG | 189.8103368 | 7741.815 | 740.2603 | 3.27949 | 3,279.49 |
| CONTRA COSTA | 2019 | T7 tractor | Aggregated | Aggregated | DSL | 1161.193464 | 163321.5 | 14747.16 | 23.5535 | 23,553.50 |
| CONTRA COSTA | 2019 | T7 tractor ( | Aggregated | Aggregated | DSL | 194.4285672 | 13627.74 | 879.004 | 2.63855 | 2,638.55 |
| CONTRA COSTA | 2019 | T7 utility | Aggregated | Aggregated | DSL | 37.15196806 | 754.032 | 427.2476 | 0.1354 | 135.4 |
| CONTRA COSTA | 2019 | T7IS | Aggregated | Aggregated | GAS | 3.114653369 | 247.9254 | 62.31798 | 0.06286 | 62.86 |
| CONTRA COSTA | 2019 | UBUS | Aggregated | Aggregated | GAS | 24.98818114 | 2440.083 | 99.95272 | 0.34448 | 344.48 |
| CONTRA COSTA | 2019 | UBUS | Aggregated | Aggregated | DSL | 204.0155431 | 20541.24 | 816.0622 | 3.41571 | 3,415.71 |
| CONTRA COSTA | 2019 | UBUS | Aggregated | Aggregated | NG | 32.33100356 | 2845.973 | 129.324 | 0.68203 | 682.03 |

EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: Sub-Area
Region: Contra Costa (SF)
Calendar Year: 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

| Region | Calendar Y | Vehicle Category | Model Yea | Speed | Fuel | Population | VMT | Trips | Fuel Consumption |
|---|---|---|---|---|---|---|---|---|---|
| Contra Costa (SF) | 2021 | LDA | Aggregatec | Aggregatec | GAS | 398035.7588 | 14954127.48 | 1864797.776 | 481.157217 |
| Contra Costa (SF) | 2021 | LDA | Aggregatec | Aggregatec | DSL | 4153.121389 | 159664.2225 | 19439.81029 | 3.337399231 |
| Contra Costa (SF) | 2021 | LDA | Aggregatec | Aggregatec | ELEC | 7684.966922 | 303129.0295 | 38108.11874 | 0 |
| Contra Costa (SF) | 2021 | LDT1 | Aggregatec | Aggregatec | GAS | 41861.74667 | 1533931.472 | 190904.8032 | 57.75155752 |
| Contra Costa (SF) | 2021 | LDT1 | Aggregatec | Aggregatec | DSL | 27.96022764 | 476.6147462 | 93.64237192 | 0.020324521 |
| Contra Costa (SF) | 2021 | LDT1 | Aggregatec | Aggregatec | ELEC | 188.8745996 | 7675.08075 | 943.9045482 | 0 |
| Contra Costa (SF) | 2021 | LDT2 | Aggregatec | Aggregatec | GAS | 134409.8891 | 5101508.377 | 624615.9312 | 209.3148531 |
| Contra Costa (SF) | 2021 | LDT2 | Aggregatec | Aggregatec | DSL | 818.8391716 | 36305.10133 | 4018.717406 | 1.039852519 |
| Contra Costa (SF) | 2021 | LDT2 | Aggregatec | Aggregatec | ELEC | 872.7310637 | 29191.83747 | 4410.282733 | 0 |
| Contra Costa (SF) | 2021 | MCY | Aggregatec | Aggregatec | GAS | 19602.9938 | 150431.844 | 39205.9876 | 4.031201087 |
| Contra Costa (SF) | 2021 | MH | Aggregatec | Aggregatec | GAS | 2004.023618 | 17937.69549 | 200.4825227 | 3.758456656 |
| Contra Costa (SF) | 2021 | MH | Aggregatec | Aggregatec | DSL | 766.011716 | 7144.101476 | 76.6011716 | 0.731695755 |
| Contra Costa (SF) | 2021 | OBUS | Aggregatec | Aggregatec | GAS | 301.7953236 | 14810.36602 | 6038.320834 | 3.145487839 |
| Contra Costa (SF) | 2021 | OBUS | Aggregatec | Aggregatec | DSL | 124.5245472 | 9360.043981 | 1226.407399 | 1.219852103 |
| Contra Costa (SF) | 2021 | SBUS | Aggregatec | Aggregatec | GAS | 45.5459064 | 2353.339751 | 182.1836256 | 0.244566538 |
| Contra Costa (SF) | 2021 | SBUS | Aggregatec | Aggregatec | DSL | 750.0212904 | 24677.61545 | 8655.141704 | 2.830630058 |
| Contra Costa (SF) | 2021 | UBUS | Aggregatec | Aggregatec | GAS | 25.24670683 | 2465.327773 | 100.9868273 | 0.346848037 |
| Contra Costa (SF) | 2021 | UBUS | Aggregatec | Aggregatec | DSL | 205.757081 | 20713.56623 | 823.0283242 | 3.440341797 |
| Contra Costa (SF) | 2021 | UBUS | Aggregatec | Aggregatec | NG | 33.03468773 | 2915.604761 | 132.1387509 | 0.699061533 |
| Contra Costa (SF) | 2022 | LDA | Aggregatec | Aggregatec | GAS | 406764.181 | 15187755.46 | 1907272.355 | 475.680484 |
| Contra Costa (SF) | 2022 | LDA | Aggregatec | Aggregatec | DSL | 4374.911146 | 166665.1213 | 20493.85548 | 3.399411894 |
| Contra Costa (SF) | 2022 | LDA | Aggregatec | Aggregatec | ELEC | 8857.598006 | 356474.9937 | 43802.60844 | 0 |
| Contra Costa (SF) | 2022 | LDT1 | Aggregatec | Aggregatec | GAS | 42354.89435 | 1545907.262 | 193520.2617 | 56.7587904 |
| Contra Costa (SF) | 2022 | LDT1 | Aggregatec | Aggregatec | DSL | 25.51218915 | 433.7834982 | 84.9741003 | 0.018236137 |
| Contra Costa (SF) | 2022 | LDT1 | Aggregatec | Aggregatec | ELEC | 262.5987132 | 11089.74979 | 1316.934092 | 0 |
| Contra Costa (SF) | 2022 | LDT2 | Aggregatec | Aggregatec | GAS | 135599.98 | 5098411.432 | 629871.5849 | 202.5640795 |
| Contra Costa (SF) | 2022 | LDT2 | Aggregatec | Aggregatec | DSL | 892.3610186 | 38629.11799 | 4359.56018 | 1.078935253 |
| Contra Costa (SF) | 2022 | LDT2 | Aggregatec | Aggregatec | ELEC | 1145.740394 | 37758.12931 | 5777.460883 | 0 |
| Contra Costa (SF) | 2022 | MCY | Aggregatec | Aggregatec | GAS | 19837.72071 | 150512.3942 | 39675.44142 | 4.031435304 |
| Contra Costa (SF) | 2022 | MH | Aggregatec | Aggregatec | GAS | 1948.595184 | 17585.49033 | 194.9374622 | 3.637206977 |
| Contra Costa (SF) | 2022 | MH | Aggregatec | Aggregatec | DSL | 776.7414603 | 7150.477766 | 77.67414603 | 0.725199258 |
| Contra Costa (SF) | 2022 | OBUS | Aggregatec | Aggregatec | GAS | 298.6907421 | 14432.05228 | 5976.204368 | 3.021925151 |
| Contra Costa (SF) | 2022 | OBUS | Aggregatec | Aggregatec | DSL | 126.1251452 | 9776.483524 | 1236.542051 | 1.232260915 |
| Contra Costa (SF) | 2022 | SBUS | Aggregatec | Aggregatec | GAS | 53.04307493 | 2717.813622 | 212.1722997 | 0.278503555 |
| Contra Costa (SF) | 2022 | SBUS | Aggregatec | Aggregatec | DSL | 818.6905554 | 26936.24086 | 9447.575502 | 3.036449422 |
| Contra Costa (SF) | 2022 | UBUS | Aggregatec | Aggregatec | GAS | 25.25818723 | 2466.448828 | 101.0327489 | 0.30017441 |
| Contra Costa (SF) | 2022 | UBUS | Aggregatec | Aggregatec | DSL | 204.3955217 | 20593.00636 | 817.5820867 | 3.412238693 |
| Contra Costa (SF) | 2022 | UBUS | Aggregatec | Aggregatec | NG | 34.50483256 | 3046.909498 | 138.0193303 | 0.721808208 |
| Contra Costa (SF) | 2023 | LDA | Aggregatec | Aggregatec | GAS | 415473.5477 | 15421746.18 | 1949194.746 | 469.7434191 |
| Contra Costa (SF) | 2023 | LDA | Aggregatec | Aggregatec | DSL | 4583.453774 | 173065.8983 | 21477.78071 | 3.441231002 |
| Contra Costa (SF) | 2023 | LDA | Aggregatec | Aggregatec | ELEC | 10231.12447 | 421213.1392 | 50489.41531 | 0 |
| Contra Costa (SF) | 2023 | LDT1 | Aggregatec | Aggregatec | GAS | 42903.22771 | 1560070.346 | 196335.4688 | 55.80139915 |
| Contra Costa (SF) | 2023 | LDT1 | Aggregatec | Aggregatec | DSL | 23.39798969 | 398.9985164 | 77.6304591 | 0.016483418 |
| Contra Costa (SF) | 2023 | LDT1 | Aggregatec | Aggregatec | ELEC | 347.957326 | 15147.12 | 1746.204752 | 0 |
| Contra Costa (SF) | 2023 | LDT2 | Aggregatec | Aggregatec | GAS | 136800.1042 | 5101359.876 | 635180.2944 | 196.0617569 |
| Contra Costa (SF) | 2023 | LDT2 | Aggregatec | Aggregatec | DSL | 961.6320956 | 40776.24302 | 4679.641094 | 1.109590453 |
| Contra Costa (SF) | 2023 | LDT2 | Aggregatec | Aggregatec | ELEC | 1459.286767 | 47318.11724 | 7339.788873 | 0 |
| Contra Costa (SF) | 2023 | MCY | Aggregatec | Aggregatec | GAS | 20059.40041 | 150633.3251 | 40118.80081 | 4.032727418 |
| Contra Costa (SF) | 2023 | MH | Aggregatec | Aggregatec | GAS | 1897.63768 | 17272.42036 | 189.8396735 | 3.528471445 |
| Contra Costa (SF) | 2023 | MH | Aggregatec | Aggregatec | DSL | 786.6124736 | 7158.014809 | 78.66124736 | 0.719189642 |
| Contra Costa (SF) | 2023 | OBUS | Aggregatec | Aggregatec | GAS | 296.0803992 | 14116.53105 | 5923.976627 | 2.915717305 |
| Contra Costa (SF) | 2023 | OBUS | Aggregatec | Aggregatec | DSL | 128.4527592 | 10172.08601 | 1251.29199 | 1.248250433 |
| Contra Costa (SF) | 2023 | SBUS | Aggregatec | Aggregatec | GAS | 60.62213418 | 3079.941213 | 242.4885367 | 0.312242439 |
| Contra Costa (SF) | 2023 | SBUS | Aggregatec | Aggregatec | DSL | 888.6542454 | 29222.84434 | 10254.94678 | 3.243075951 |
| Contra Costa (SF) | 2023 | UBUS | Aggregatec | Aggregatec | GAS | 25.26966764 | 2467.569884 | 101.0786705 | 0.300312384 |
| Contra Costa (SF) | 2023 | UBUS | Aggregatec | Aggregatec | DSL | 202.1706246 | 20363.46565 | 808.6824985 | 3.347914921 |
| Contra Costa (SF) | 2023 | UBUS | Aggregatec | Aggregatec | NG | 36.83831511 | 3287.195067 | 147.3532605 | 0.771835073 |
| Contra Costa (SF) | 2024 | LDA | Aggregatec | Aggregatec | GAS | 424002.7001 | 15638010.16 | 1989774.116 | 462.9054734 |
| Contra Costa (SF) | 2024 | LDA | Aggregatec | Aggregatec | DSL | 4766.182846 | 178809.3011 | 22364.40675 | 3.462298249 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Contra Costa (SF) | 2024 | LDA | Aggregatec | Aggregatec | ELEC | 11794.61148 | 496944.4134 | 58106.03304 | 0 |
| Contra Costa (SF) | 2024 | LDT1 | Aggregatec | Aggregatec | GAS | 43486.31325 | 1574810.822 | 199275.3513 | 54.82710178 |
| Contra Costa (SF) | 2024 | LDT1 | Aggregatec | Aggregatec | DSL | 21.54058422 | 370.3409183 | 71.30525084 | 0.014988569 |
| Contra Costa (SF) | 2024 | LDT1 | Aggregatec | Aggregatec | ELEC | 443.8519891 | 19811.38034 | 2225.725035 | 0 |
| Contra Costa (SF) | 2024 | LDT2 | Aggregatec | Aggregatec | GAS | 138047.4795 | 5107761.37 | 640696.2842 | 189.7404491 |
| Contra Costa (SF) | 2024 | LDT2 | Aggregatec | Aggregatec | DSL | 1027.930472 | 42718.23482 | 4981.522411 | 1.131568761 |
| Contra Costa (SF) | 2024 | LDT2 | Aggregatec | Aggregatec | ELEC | 1809.347086 | 57715.70024 | 9075.285315 | 0 |
| Contra Costa (SF) | 2024 | MCY | Aggregatec | Aggregatec | GAS | 20272.9721 | 150835.274 | 40545.9442 | 4.036357781 |
| Contra Costa (SF) | 2024 | MH | Aggregatec | Aggregatec | GAS | 1848.854357 | 16982.60472 | 184.9593899 | 3.409749877 |
| Contra Costa (SF) | 2024 | MH | Aggregatec | Aggregatec | DSL | 796.0782406 | 7171.648501 | 79.60782406 | 0.711608539 |
| Contra Costa (SF) | 2024 | OBUS | Aggregatec | Aggregatec | GAS | 293.3339262 | 13840.13978 | 5869.025196 | 2.807456993 |
| Contra Costa (SF) | 2024 | OBUS | Aggregatec | Aggregatec | DSL | 134.6255369 | 10562.0349 | 1308.402339 | 1.278009258 |
| Contra Costa (SF) | 2024 | SBUS | Aggregatec | Aggregatec | GAS | 68.27378457 | 3441.196123 | 273.0951383 | 0.34318331 |
| Contra Costa (SF) | 2024 | SBUS | Aggregatec | Aggregatec | DSL | 960.261868 | 31547.4635 | 11081.28882 | 3.439132547 |
| Contra Costa (SF) | 2024 | UBUS | Aggregatec | Aggregatec | GAS | 25.28114804 | 2468.690939 | 101.1245922 | 0.300432202 |
| Contra Costa (SF) | 2024 | UBUS | Aggregatec | Aggregatec | DSL | 188.434558 | 19045.96896 | 753.7382321 | 2.882599841 |
| Contra Costa (SF) | 2024 | UBUS | Aggregatec | Aggregatec | NG | 50.68296718 | 4615.436619 | 202.7318687 | 1.123875123 |
| Contra Costa (SF) | 2025 | LDA | Aggregatec | Aggregatec | GAS | 432512.5195 | 15837466.96 | 2029629.204 | 455.2096533 |
| Contra Costa (SF) | 2025 | LDA | Aggregatec | Aggregatec | DSL | 4947.44779 | 184047.8509 | 23222.968 | 3.466946982 |
| Contra Costa (SF) | 2025 | LDA | Aggregatec | Aggregatec | ELEC | 13543.75031 | 583841.7818 | 66626.02173 | 0 |
| Contra Costa (SF) | 2025 | LDT1 | Aggregatec | Aggregatec | GAS | 44086.16313 | 1588789.645 | 202229.5107 | 53.7866355 |
| Contra Costa (SF) | 2025 | LDT1 | Aggregatec | Aggregatec | DSL | 19.97034247 | 347.5813181 | 66.06051022 | 0.013742697 |
| Contra Costa (SF) | 2025 | LDT1 | Aggregatec | Aggregatec | ELEC | 550.4955203 | 25100.21586 | 2755.767996 | 0 |
| Contra Costa (SF) | 2025 | LDT2 | Aggregatec | Aggregatec | GAS | 139344.1402 | 5115968.344 | 646402.6971 | 183.5231075 |
| Contra Costa (SF) | 2025 | LDT2 | Aggregatec | Aggregatec | DSL | 1090.095124 | 44454.44844 | 5262.725049 | 1.144810551 |
| Contra Costa (SF) | 2025 | LDT2 | Aggregatec | Aggregatec | ELEC | 2196.137725 | 68893.08114 | 10982.9832 | 0 |
| Contra Costa (SF) | 2025 | MCY | Aggregatec | Aggregatec | GAS | 20505.07958 | 151148.2508 | 41010.15916 | 4.043612369 |
| Contra Costa (SF) | 2025 | MH | Aggregatec | Aggregatec | GAS | 1806.236529 | 16734.07002 | 180.6959024 | 3.30323568 |
| Contra Costa (SF) | 2025 | MH | Aggregatec | Aggregatec | DSL | 804.112051 | 7181.851911 | 80.4112051 | 0.703545307 |
| Contra Costa (SF) | 2025 | OBUS | Aggregatec | Aggregatec | GAS | 291.1142192 | 13622.33536 | 5824.613298 | 2.711720671 |
| Contra Costa (SF) | 2025 | OBUS | Aggregatec | Aggregatec | DSL | 143.507147 | 10907.71625 | 1394.828242 | 1.287935316 |
| Contra Costa (SF) | 2025 | SBUS | Aggregatec | Aggregatec | GAS | 76.01703625 | 3801.811855 | 304.068145 | 0.374137168 |
| Contra Costa (SF) | 2025 | SBUS | Aggregatec | Aggregatec | DSL | 1033.49851 | 33909.17301 | 11926.42952 | 3.634095078 |
| Contra Costa (SF) | 2025 | UBUS | Aggregatec | Aggregatec | GAS | 25.29262844 | 2469.811994 | 101.1705138 | 0.300548493 |
| Contra Costa (SF) | 2025 | UBUS | Aggregatec | Aggregatec | DSL | 188.5118949 | 19053.62168 | 754.0475795 | 2.883693649 |
| Contra Costa (SF) | 2025 | UBUS | Aggregatec | Aggregatec | NG | 50.71421582 | 4618.528767 | 202.8568633 | 1.124631664 |
| Contra Costa (SF) | 2026 | LDA | Aggregatec | Aggregatec | GAS | 441023.1583 | 15994117.4 | 2069234.374 | 447.1886152 |
| Contra Costa (SF) | 2026 | LDA | Aggregatec | Aggregatec | DSL | 5098.095371 | 188213.9361 | 23971.18608 | 3.454034591 |
| Contra Costa (SF) | 2026 | LDA | Aggregatec | Aggregatec | ELEC | 15313.27268 | 650141.1768 | 75183.82349 | 0 |
| Contra Costa (SF) | 2026 | LDT1 | Aggregatec | Aggregatec | GAS | 44725.58037 | 1599916.34 | 205329.0621 | 52.7644207 |
| Contra Costa (SF) | 2026 | LDT1 | Aggregatec | Aggregatec | DSL | 17.15804135 | 315.7341221 | 57.84344243 | 0.012123796 |
| Contra Costa (SF) | 2026 | LDT1 | Aggregatec | Aggregatec | ELEC | 657.8876266 | 29439.52754 | 3284.333918 | 0 |
| Contra Costa (SF) | 2026 | LDT2 | Aggregatec | Aggregatec | GAS | 140753.9346 | 5118298.647 | 652637.8484 | 177.6364194 |
| Contra Costa (SF) | 2026 | LDT2 | Aggregatec | Aggregatec | DSL | 1149.077777 | 45901.82811 | 5526.265795 | 1.151581131 |
| Contra Costa (SF) | 2026 | LDT2 | Aggregatec | Aggregatec | ELEC | 2584.595969 | 79634.65597 | 12880.6449 | 0 |
| Contra Costa (SF) | 2026 | MCY | Aggregatec | Aggregatec | GAS | 20729.324 | 151606.5252 | 41458.648 | 4.054622756 |
| Contra Costa (SF) | 2026 | MH | Aggregatec | Aggregatec | GAS | 1766.375428 | 16516.07487 | 176.7081978 | 3.207676054 |
| Contra Costa (SF) | 2026 | MH | Aggregatec | Aggregatec | DSL | 811.2581642 | 7193.754896 | 81.12581642 | 0.696120053 |
| Contra Costa (SF) | 2026 | OBUS | Aggregatec | Aggregatec | GAS | 289.1174582 | 13466.51192 | 5784.662103 | 2.633060893 |
| Contra Costa (SF) | 2026 | OBUS | Aggregatec | Aggregatec | DSL | 151.743776 | 11264.78897 | 1473.520653 | 1.300281149 |
| Contra Costa (SF) | 2026 | SBUS | Aggregatec | Aggregatec | GAS | 83.85381714 | 4163.244376 | 335.4152685 | 0.405169553 |
| Contra Costa (SF) | 2026 | SBUS | Aggregatec | Aggregatec | DSL | 1109.426868 | 36363.10246 | 12802.63225 | 3.835788585 |
| Contra Costa (SF) | 2026 | UBUS | Aggregatec | Aggregatec | GAS | 25.30410885 | 2470.93305 | 101.2164354 | 0.300666004 |
| Contra Costa (SF) | 2026 | UBUS | Aggregatec | Aggregatec | DSL | 188.3014525 | 19051.9467 | 753.2058099 | 2.882625877 |
| Contra Costa (SF) | 2026 | UBUS | Aggregatec | Aggregatec | NG | 51.03324371 | 4630.948603 | 204.1329748 | 1.12786088 |
| Contra Costa (SF) | 2027 | LDA | Aggregatec | Aggregatec | GAS | 449509.9994 | 16178316.19 | 2108363.9 | 440.8303104 |
| Contra Costa (SF) | 2027 | LDA | Aggregatec | Aggregatec | DSL | 5234.401712 | 192336.4858 | 24657.55665 | 3.444894404 |
| Contra Costa (SF) | 2027 | LDA | Aggregatec | Aggregatec | ELEC | 17049.81066 | 714160.2143 | 83514.2032 | 0 |
| Contra Costa (SF) | 2027 | LDT1 | Aggregatec | Aggregatec | GAS | 45381.32672 | 1614309.137 | 208458.5664 | 51.94118957 |
| Contra Costa (SF) | 2027 | LDT1 | Aggregatec | Aggregatec | DSL | 12.48470437 | 270.115486 | 45.06116416 | 0.009924483 |
| Contra Costa (SF) | 2027 | LDT1 | Aggregatec | Aggregatec | ELEC | 764.7279756 | 33631.44044 | 3804.707976 | 0 |
| Contra Costa (SF) | 2027 | LDT2 | Aggregatec | Aggregatec | GAS | 142222.9265 | 5134233.447 | 659123.0752 | 172.671308 |
| Contra Costa (SF) | 2027 | LDT2 | Aggregatec | Aggregatec | DSL | 1202.506182 | 47267.49911 | 5765.287851 | 1.156932401 |
| Contra Costa (SF) | 2027 | LDT2 | Aggregatec | Aggregatec | ELEC | 2970.685036 | 89825.43936 | 14747.48736 | 0 |
| Contra Costa (SF) | 2027 | MCY | Aggregatec | Aggregatec | GAS | 20956.81153 | 152152.9839 | 41913.62306 | 4.068054173 |
| Contra Costa (SF) | 2027 | MH | Aggregatec | Aggregatec | GAS | 1730.789277 | 16331.3466 | 173.1481592 | 3.114938805 |
| Contra Costa (SF) | 2027 | MH | Aggregatec | Aggregatec | DSL | 817.4925366 | 7205.010974 | 81.74925366 | 0.687983685 |
| Contra Costa (SF) | 2027 | OBUS | Aggregatec | Aggregatec | GAS | 288.0182369 | 13351.22651 | 5762.668883 | 2.561012989 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Contra Costa (SF) | 2027 | OBUS | Aggregatec | Aggregatec | DSL | 160.3587139 | 11638.17678 | 1555.962614 | 1.313321686 |
| Contra Costa (SF) | 2027 | SBUS | Aggregatec | Aggregatec | GAS | 91.75638737 | 4524.122263 | 367.0255495 | 0.43493023 |
| Contra Costa (SF) | 2027 | SBUS | Aggregatec | Aggregatec | DSL | 1188.627874 | 38909.50074 | 13716.60086 | 4.036704641 |
| Contra Costa (SF) | 2027 | UBUS | Aggregatec | Aggregatec | GAS | 25.31558925 | 2472.054105 | 101.262357 | 0.300082157 |
| Contra Costa (SF) | 2027 | UBUS | Aggregatec | Aggregatec | DSL | 187.8032308 | 18957.48588 | 751.2129233 | 2.860056085 |
| Contra Costa (SF) | 2027 | UBUS | Aggregatec | Aggregatec | NG | 51.64005083 | 4736.154294 | 206.5602033 | 1.155686674 |
| Contra Costa (SF) | 2028 | LDA | Aggregatec | Aggregatec | GAS | 458036.6295 | 16357989.45 | 2147480.967 | 435.329476 |
| Contra Costa (SF) | 2028 | LDA | Aggregatec | Aggregatec | DSL | 5356.282153 | 196118.795 | 25290.68524 | 3.43496451 |
| Contra Costa (SF) | 2028 | LDA | Aggregatec | Aggregatec | ELEC | 18750.62904 | 774292.2632 | 91606.87366 | 0 |
| Contra Costa (SF) | 2028 | LDT1 | Aggregatec | Aggregatec | GAS | 46071.41538 | 1629202.583 | 211715.079 | 51.23187567 |
| Contra Costa (SF) | 2028 | LDT1 | Aggregatec | Aggregatec | DSL | 10.97861131 | 255.8787409 | 40.90543346 | 0.009102993 |
| Contra Costa (SF) | 2028 | LDT1 | Aggregatec | Aggregatec | ELEC | 870.8361093 | 37606.15014 | 4316.410222 | 0 |
| Contra Costa (SF) | 2028 | LDT2 | Aggregatec | Aggregatec | GAS | 143796.9401 | 5154151.169 | 666094.8533 | 168.30438 |
| Contra Costa (SF) | 2028 | LDT2 | Aggregatec | Aggregatec | DSL | 1253.291011 | 48496.52023 | 5989.409684 | 1.160191915 |
| Contra Costa (SF) | 2028 | LDT2 | Aggregatec | Aggregatec | ELEC | 3353.0251 | 99471.39591 | 16578.72607 | 0 |
| Contra Costa (SF) | 2028 | MCY | Aggregatec | Aggregatec | GAS | 21196.90652 | 152779.4404 | 42393.81303 | 4.083962791 |
| Contra Costa (SF) | 2028 | MH | Aggregatec | Aggregatec | GAS | 1700.497392 | 16177.02407 | 170.1177591 | 3.032972198 |
| Contra Costa (SF) | 2028 | MH | Aggregatec | Aggregatec | DSL | 822.9967951 | 7214.065693 | 82.29967951 | 0.679888994 |
| Contra Costa (SF) | 2028 | OBUS | Aggregatec | Aggregatec | GAS | 287.0573588 | 13279.08151 | 5743.443635 | 2.500270363 |
| Contra Costa (SF) | 2028 | OBUS | Aggregatec | Aggregatec | DSL | 167.1527154 | 11922.21359 | 1621.126872 | 1.321007798 |
| Contra Costa (SF) | 2028 | SBUS | Aggregatec | Aggregatec | GAS | 99.74786731 | 4885.020215 | 398.9914692 | 0.464700812 |
| Contra Costa (SF) | 2028 | SBUS | Aggregatec | Aggregatec | DSL | 1271.692754 | 41568.92941 | 14675.15807 | 4.243268385 |
| Contra Costa (SF) | 2028 | UBUS | Aggregatec | Aggregatec | GAS | 25.32706965 | 2473.175161 | 101.3082786 | 0.299569393 |
| Contra Costa (SF) | 2028 | UBUS | Aggregatec | Aggregatec | DSL | 177.8082943 | 17638.65075 | 711.2331774 | 2.553752092 |
| Contra Costa (SF) | 2028 | UBUS | Aggregatec | Aggregatec | NG | 61.74357281 | 6065.734281 | 246.9742912 | 1.508081529 |

# Appendix C

# Table 1

## Plant Species Observed on the Vineyards at Deer Creek Project Site

### Angiosperms - Dicots

#### Asteraceae

| | |
|---|---|
| **Carduus pycnocephalus subsp. pycnocephalus* | Italian thistle |
| **Centaurea melitensis* | Tocalote |
| **Centaurea solstitialis* | Yellow starthistle |
| **Dittrichia graveolens* | Stinkwort |
| *Erigeron canadensis* | Horseweed |
| *Grindelia camporum* | Great Valley gumplant |
| *Holocarpha sp.* | Tarweed |
| **Lactuca serriola* | Prickly lettuce |
| **Silybum marianum* | Milk thistle |
| *Xanthium strumarium* | Cocklebur |

#### Brassicaceae

| | |
|---|---|
| **Brassica nigra* | Black mustard |
| **Hirschfeldia incana* | Short-podded mustard |
| **Lepidium latifolium* | Broadleaf pepperweed |
| **Raphanus raphanistrum* | Jointed charlock |
| **Sinapis arvensis* | Wild mustard |

#### Caryophyllaceae

| | |
|---|---|
| **Spergula arvensis* | Stickwort |
| **Stellaria media* | Common chickweed |

#### Chenopodiaceae

| | |
|---|---|
| **Salsola tragus* | Russian-thistle |

#### Cucurbitaceae

| | |
|---|---|
| *Marah fabaceus* | Wild cucumber |

#### Fabaceae

| | |
|---|---|
| *Lupinus bicolor* | Bicolored lupine |
| *Lupinus sp.* | Lupine |
| **Medicago polymorpha* | California burclover |
| **Trifolium hirtum* | Rose clover |
| **Vicia sativa* | Common vetch |

#### Fagaceae

| | |
|---|---|
| *Quercus douglasii* | Blue oak |
| *Quercus lobata* | Valley oak |

#### Frankeniaceae

| | |
|---|---|
| *Frankenia salina* | Alkali heath |

#### Geraniaceae

| | |
|---|---|
| **Erodium botrys* | Broad-leaf filaree |
| **Erodium moschatum* | White-stem filaree |
| **Geranium dissectum* | Cut-leaf geranium |

#### Lamiaceae

| | |
|---|---|
| *Trichostema lanceolatum* | Vinegar weed |

* Indicates a non-native species

## Table 1

## Plant Species Observed on the Vineyards at Deer Creek Project Site

| | |
|---|---|
| **Malvaceae** | |
| **Malva nicaeensis* | Bull mallow |
| **Malva parviflora* | Cheeseweed |
| *Malvella leprosa* | Alkali mallow |
| **Montiaceae** | |
| *Calandrinia menziesii* | Red maids |
| *Claytonia parviflora* | Miner's lettuce |
| **Polygonaceae** | |
| **Polygonum aviculare* | Common knotweed |
| **Rumex acetosella* | Sheep sorrel |
| **Rumex crispus* | Curly dock |
| **Rosaceae** | |
| **Prunus dulcis* | Almond tree |
| **Rubiaceae** | |
| *Galium aparine* | Goose grass |
| **Solanaceae** | |
| *Datura wrightii* | Thornapple |
| **Urticaceae** | |
| **Urtica urens* | Dwarf nettle |
| **Viscaceae** | |
| *Phoradendron sp.* | Mistletoe |
| **Angiosperms -Monocots** | |
| **Poaceae** | |
| **Avena barbata* | Slender wild oat |
| **Bromus diandrus* | Ripgut grass |
| **Bromus hordeaceus* | Soft chess |
| *Distichlis spicata* | Saltgrass |
| *Elymus triticoides* | Creeping wildrye |
| **Festuca perennis* | perennial ryegrass |
| **Hordeum murinum* | Wall barley |
| **Polypogon monspeliensis* | Annual beard grass |
| **Triticum aestivum* | Wheat |
| **Themidaceae** | |
| *Dichelostemma capitatum subsp. capitatum* | Blue dicks |

* Indicates a non-native species

# Table 2
## Wildlife Species Observed on the Vineyards at Deer Creek Project Site

| | |
|---|---|
| **Amphibians** | |
| Sierran treefrog | *Pseudacris sierra* |
| **Reptiles** | |
| Western fence lizard | *Sceloporus occidentalis* |
| **Birds** | |
| Northern flicker | *Colaptes auratus* |
| Turkey vulture | *Cathartes aura* |
| Canada goose | *Branta canadensis* |
| White-tailed kite | *Elanus leucurus* |
| Cooper's hawk | *Accipiter cooperii* |
| Red-shouldered hawk | *Buteo lineatus* |
| Swainson's hawk | *Buteo swainsoni* |
| Red-tailed hawk | *Buteo jamaicensis* |
| Ferruginous hawk | *Buteo regalis* |
| Golden eagle | *Aquila chrysaetos* |
| American kestrel | *Falco sparverius* |
| Killdeer | *Charadrius vociferus* |
| Rock pigeon | *Columba livia* |
| Mourning dove | *Zenaida macroura* |
| Black phoebe | *Sayornis nigricans* |
| Say's phoebe | *Sayornis saya* |
| Loggerhead shrike | *Lanius ludovicianus* |
| California scrub jay | *Aphelocoma californica* |
| American crow | *Corvus brachyrhynchos* |
| Common raven | *Corvus corax* |
| Oak titmouse | *Baeolophus inornatus* |
| Ruby-crowned kinglet | *Regulus calendula* |
| Western bluebird | *Sialia mexicana* |
| American robin | *Turdus migratorius* |
| European starling | *Sturnus vulgaris* |
| American pipit | *Anthus rubescens* |
| Yellow-rumped warbler | *Setophaga coronata* |
| Savannah sparrow | *Passerculus sandwichensis* |
| Lincoln's sparrow | *Melospiza lincolnii* |
| White-crowned sparrow | *Zonotrichia leucophrys* |
| Golden-crowned sparrow | *Zonotrichia atricapilla* |
| Red-winged blackbird | *Agelaius phoeniceus* |
| Western meadowlark | *Sturnella neglecta* |
| Brewer's blackbird | *Euphagus cyanocephalus* |
| House finch | *Haemorhous mexicanus* |
| Lesser goldfinch | *Spinus psaltria* |
| **Mammals** | |
| American badger (tracks) | *Taxidea taxus* |
| Fox squirrel | *Sciurus niger* |

## Table 2
## Wildlife Species Observed on the Vineyards at Deer Creek Project Site

| | |
|---|---|
| California ground squirrel | *Otospermophilus beecheyi* |
| Botta's pocket gopher | *Thomomys bottae* |
| California meadow vole | *Microtus californicus* |
| Coyote | *Canis latrans* |
| Raccoon | *Procyon lotor* |

# Table 3

## Special-Status Plant Species Known to Occur Within 3 Miles of the Vineyards at Deer Creek Project Site

| Family<br>Taxon<br>Common Name | Status* | Flowering Period | Habitat | Area Locations | Probability on Project Site |
|---|---|---|---|---|---|
| **Asteraceae** | | | | | |
| *Blepharizonia plumosa*<br>Big tarplant | Fed: -<br>State: -<br>CNPS: Rank 1B.1 | July-October | Valley and foothill grassland. | Record for this species located on the project site (Occurrence No. 33). | Present. Detected along Deer Valley Road south of Empire Mine Road in 2013. |
| *Helianthella castanea*<br>Diablo helianthella | Fed: -<br>State: -<br>CNPS: Rank 1B.2 | March-June | Broadleafed upland forest; chaparral; cismontane woodland; coastal scrub; riparian woodland; valley and foothill grassland. | Record for this species located 1.3 miles southwest of the project site (Occurrence No. 71). | Low. Appropriately timed surveys will be conducted. |
| *Madia radiata*<br>Showy golden madia | Fed: -<br>State: -<br>CNPS: Rank 1B.1 | March-May | Cismontane woodland; valley and foothill grassland. | Record for this species located 0.8-mile north of the project site (Occurrence No. 25). | Low. Appropriately timed surveys will be conducted. |
| **Boraginaceae** | | | | | |
| *Amsinckia grandiflora*<br>Large-flowered fiddleneck | Fed: FE<br>State: CE<br>CNPS: Rank 1B.1 | April-May | Cismontane woodland, Valley and foothill grassland | Record for this species located 2.5 miles west of the project site (Occurrence No. 2). | None. Project site not within known occupied range of this species. |
| **Chenopodiaceae** | | | | | |
| *Atriplex depressa*<br>Brittlescale | Fed: -<br>State: -<br>CNPS: Rank 1B.2 | May-October | Chenopod scrub; playas; valley and foothill grassland; [alkaline or clay]. | Record for this species located on the project site (Occurrence No. 68 and 74). | Present. Detected within seasonal wetland habitat during surveys conducted in 2005 and 2006. |
| *Extriplex joaquinana*<br>San Joaquin spearscale | Fed: -<br>State: -<br>CNPS: Rank 1B.2 | April-October | Chenopod scrub; meadows; valley and foothill grassland; [alkaline]. | Record for this species located on the project site (Occurrence No. 15, 16, and 104). | Present. Detected within seasonal wetland habitat during surveys conducted in 2006. |

# Table 3

## Special-Status Plant Species Known to Occur Within 3 Miles of the Vineyards at Deer Creek Project Site

| Family<br>Taxon<br>Common Name | Status* | Flowering Period | Habitat | Area Locations | Probability on Project Site |
|---|---|---|---|---|---|
| **Ericaceae** | | | | | |
| *Arctostaphylos auriculata*<br>Mount Diablo manzanita | Fed: -<br>State: -<br>CNPS: Rank 1B.3 | January-March | Chaparral (sandstone). | Record for this species located 2.1 miles west of the project site (Occurrence No. 18). | None. No suitable habitat present on the project site. |
| **Linaceae** | | | | | |
| *Hesperolinon breweri*<br>Brewer's western flax | Fed: -<br>State: -<br>CNPS: Rank 1B.2 | May-July | Chaparral; cismontane woodland; valley and foothill grassland; [mostly serpentinite]. | Record for this species located 0.5-mile northwest of the project site (Occurrence No. 32). | Low. Appropriately timed surveys will be conducted. |
| **Onagraceae** | | | | | |
| *Oenothera deltoides howellii*<br>Antioch dunes evening-primrose | Fed: FE<br>State: CE<br>CNPS: Rank 1B.1 | March-September | Interior dunes. | Record for this species located 3.0 miles northeast of the project site (Occurrence No. 12). | None. No suitable habitat present on the project site. |
| **Polemoniaceae** | | | | | |
| *Navarretia nigelliformis radians*<br>Shining navarretia | Fed: -<br>State: -<br>CNPS: Rank 1B.2 | May-June | Cismontane woodland; valley and foothill grassland; slightly mesic depressions. | Record for this species located 1.5 miles northwest of the project site (Occurrence No. 81). | Low. Appropriately timed surveys will be conducted. |
| **Polygonaceae** | | | | | |
| *Eriogonum truncatum*<br>Mount Diablo buckwheat | Fed: -<br>State: -<br>CNPS: Rank 1B.1 | April-September | Chaparral; coastal scrub; valley and foothill grassland; [sandy]. | Record for this species located 2.5 miles south of the project site (Occurrence No. 3). | None. Known from single extant occurrence in Mount Diablo State Park. |

# Table 3

## Special-Status Plant Species Known to Occur Within 3 Miles of the Vineyards at Deer Creek Project Site

| Family<br>Taxon<br>Common Name | Status* | Flowering Period | Habitat | Area Locations | Probability on Project Site |
|---|---|---|---|---|---|

***Status**

Federal:
FE - Federal Endangered
FT - Federal Threatened
FPE - Federal Proposed Endangered
FPT - Federal Proposed Threatened
FC - Federal Candidate

State:
CE - California Endangered
CT - California Threatened
CR - California Rare
CC - California Candidate
CSC - California Species of Special Concern

CNPS:
Rank 1A - Presumed extinct in California
Rank 1B - Plants rare, threatened, or endangered in California and elsewhere
Rank 1B.1 - Seriously endangered in California (over 80% occurrences threatened/ high degree and immediacy of threat)
Rank 1B.2 - Fairly endangered in California (20-80% occurrences threatened)
Rank 1B.3 - Not very endangered in California (<20% of occurrences threatened or no current threats known)

CNPS Continued:
Rank 2 - Plants rare, threatened, or endangered in California, but more common elsewhere
Rank 2A - Extirpated in California, common elsewhere
Rank 2B.1 - Seriously endangered in California, but more common elsewhere
Rank 2B.2 - Fairly endangered in California, but more common elsewhere
Rank 2B.3 - Not very endangered in California, but more common elsewhere
Rank 3 - Plants about which we need more information (Review List)
Rank 3.1 - Plants about which we need more information (Review List) Seriously endangered in California
Rank 3.2 - Plants about which we need more information (Review List) Fairly endangered in California
Rank 4 - Plants of limited distribution - a watch list

# Table 4

## Special-Status Wildlife Species Known to Occur Within 3 Miles of the Vineyards at Deer Creek Project Site

| Species | *Status | Habitat | Closest Locations | Probability on Project Site |
|---|---|---|---|---|
| **Invertebrates** | | | | |
| Vernal pool fairy shrimp<br>*Branchinecta lynchi* | Fed: FT<br>State: -<br>Other: | Endemic to the grasslands of the Central Valley, central coast mountains, and south coast mountains. Inhabit static rain-filled/vernal pools, small, clear water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression | 2003 record for this species located 0.3-mile northwest of the project site (Occurrence No. 354). | Low. Site has been intensively farmed since 1930s. See text. |
| Vernal pool tadpole shrimp<br>*Lepidurus packardi* | Fed: FE<br>State: -<br>Other: | Inhabits large vernal pools with turbid and/or silty water. Mud substrate typical. | Record for this species located on east side of Empire Mine Road, 1.3 miles northwest of the project site (Occurrence No. 177). Record dates to 2003 when 20 adults were observed within a remote claypan vernal pool. | None. No suitable vernal pools onsite. |
| **Amphibians** | | | | |
| California tiger salamander<br>*Ambystoma californiense* | Fed: FT<br>State: CT<br>Other: | Found in grassland habitats of the valleys and foothills. Requires burrows for aestivation and standing water until late spring (May) for larvae to metamorphose. | 2005-2006 records for this species located on the project site (Occurrence No. 678, 854, 855, 856). | Present. Numerous eggs, larvae, and adults observed onsite during multiple surveys between 1996 and 2006. See text. |
| California red-legged frog<br>*Rana draytonii* | Fed: FT<br>State: CSC<br>Other: | Occurs in lowlands and foothills in deeper pools and streams, usually with emergent wetland vegetation. Requires 11-20 weeks of permanent water for larval development. | 2002 and 2005 records for this species located on the project site (Occurrence No. 612 and 933). | Present. Six adults observed in unnamed ephemeral drainage to Sand Creek in northwest corner of project site in 2005. See text. |
| **Reptiles** | | | | |
| Western pond turtle **<br>*Emys marmorata* | Fed: -<br>State: CSC<br>Other: | Inhabits ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Needs suitable basking sites and upland habitat for egg laying. Occurs in the Central Valley and Contra Costa County. | 2016 record for this species located 2.4 miles southwest of the project site (Occurrence No. 109). | None. Deer Creek does not provide suitable pools. |

## Table 4

## Special-Status Wildlife Species Known to Occur Within 3 Miles of the Vineyards at Deer Creek Project Site

| Species | *Status | Habitat | Closest Locations | Probability on Project Site |
|---|---|---|---|---|
| Northern California legless lizard<br>*Anniella pulchra* | Fed: -<br>State: CSC<br>Other: | Occurs from the southern edge of the San Joaquin River in northern Contra Costa County south to Ventura County. Inhabit sandy soil/dune area with bush lupine and moch heather as dominant plants. Moist soil is essential. | 2002 record for this species located southeast of Black Diamond Mines Regional Preserve, approximatey 1.4 miles west of the project site (Occurrence No. 6). | None. No suitable habitat occurs on the project site. |
| Alameda striped racer (=whipsnake)<br>*Coluber (=Masticophis) lateralis euryxant* | Fed: FT<br>State: CT<br>Other: | Coastal scrub and chaparral habitats of Contra Costa and Alameda Counties. Prefers south-facing slopes with a mosaic of shrubs, trees, and grassland. | 2003 record for this species located 2.5 miles west of the project site (Occurrence No. 68). | None. The project site is isolated from all known occurences in the region of the project site by significant barriers to dispersal. No scrub habitat on or adjacent to the project site. |
| **Birds** | | | | |
| White-tailed kite<br>*Elanus leucurus* | Fed:<br>State:<br>Other: FP | Found in lower foothills and valley margins with scattered oaks and along river bottomlands or marshes adjacent to oak woodlands. Nests in trees with dense tops. | 2005 record for this species located 2.5 miles north of the project site (Occurrence No. 87). | Low to moderate. Suitable nesting and foraging habitat occurs on the project site. Preconstruction surveys will be conducted. See Impacts and Mitigation section. |
| Swainson's hawk<br>*Buteo swainsoni* | Fed: -<br>State: CT<br>Other: | Migratory and resident raptor that breeds in open areas with scattered trees. Prefers riparian and sparse oak woodland habitats for nesting. Requires nearby grasslands, grain fields, or alfalfa for foraging. | 2007 record for this species located 0.4-mile northeast of the project site (Occurrence No. 1681). | Low. Observed foraging onsite during January 2019 surveys. Limited nesting habitat in northwestern corner of project site. Preconstruction surveys will be conducted. See Impacts and Mitigation section. |
| Western burrowing owl<br>*Athene cunicularia hypugaea* | Fed: --<br>State: CSC<br>Other: | Found in open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel. | 2003 record for this species located 0.1-mile west of the project site (Occurrence No. 631). | Present. Dead individual likely predated by raptor detected during 2019 surveys. Preconstruction surveys will be conducted. See Impacts and Mitigation section. |
| Tricolored blackbird<br>*Agelaius tricolor* | Fed: -<br>State: CT<br>Other: CSC | Colonial nester in dense cattails, tules, brambles or other dense vegetation. Requires open water, dense vegetation, and open grassy areas for foraging. | 2015 record for this species located 0.3-mile west of the project site (Occurrence No. 838). | None. No nesting habitat present on the project site. |

## Table 4

## Special-Status Wildlife Species Known to Occur Within 3 Miles of the Vineyards at Deer Creek Project Site

| Species | *Status | Habitat | Closest Locations | Probability on Project Site |
|---|---|---|---|---|
| **Mammals** | | | | |
| San Joaquin kit fox<br>*Vulpes macrotis mutica* | Fed: FE<br>State: CT<br>Other: | Inhabits open grasslands with scattered shrubs. Needs loose-textured sand soils for burrowing. | 1975 record for this species located 2.2 miles south of the project site (Occurrence No. 936). | Low. Possible migration corridor. Preconstruction surveys will be conducted. See Impacts and Mitigation section. |
| American badger<br>*Taxidea taxus* | Fed: -<br>State: CSC<br>Other: | Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Need sufficient food, friable soils & open, uncultivated ground. Prey on burrowing rodents. Dig burrows. | 2006 record for this species located on the project site (Occurrence No. 399). | Present. Tracks detected onsite during 2019 surveys. Known CNDDB record onsite. |

***Status**

| Federal: | State: |
|---|---|
| FE - Federal Endangered | CE - California Endangered |
| FT - Federal Threatened | CT - California Threatened |
| FPE - Federal Proposed Endangered | CR - California Rare |
| FPT - Federal Proposed Threatened | CC - California Candidate |
| FC - Federal Candidate | CSC - California Species of Special Concern |
| FPD - Federally Proposed for delisting | FP - Fully Protected |
| | WL - Watch List. Not protected pursuant to CEQA |

**The USFWS hopes to finish a 12-month finding for western pond turtle in 2021 but until formally listed, it is not afforded the protections of FESA.

**STEWART'S TREE SERVICE, INC.**
**P.O. BOX 63**
**ANTIOCH, CA 94509**
**OFFICE (925) 252-0442 FAX (925) 219-8513**

10/22/18

Blackhawk Services Company
3820 Blackhawk Road
PO Box 807
Danville, CA 94526
Attn: Lisa Borba

| | |
|---|---|
| Re: | Tree Survey |
| Location: | Ranch at Deer Valley, Antioch |
| Inspection date: | 10/18/18 |

Dear Lisa,

The intent of this inspection and this report is primarily to establish the trees' identification, and a brief description of the trees' condition, at the time of inspection. Only the trees located within the project boundary will be identified.

These tree have been measured at approximately 4 ½' above grade. These trees have been numbered 1 –109.

The diameters of these trees are approximate.

Please do not hesitate to call if I can be of further assistance in this matter.

Respectfully,

Patrick Stewart
Vice President
I.S.A. Certified Arborist W.C. #3322-A

PS/ps

**P.O. BOX 63**
**ANTIOCH, CA 94509**
**OFFICE (925) 252-0442 FAX (925) 219-8513**

# TREE SURVEY

PREPARED FOR
BLACKHAWK SERVICES COMPANY
3820 BLACKHAWK ROAD
PO BOX 807
DANVILLE, CA 94526

LOCATION
RANCH ON DEER VALLEY ROAD
ANTIOCH CA

BY

PATRICK STEWART
I.S.A. CERTIFIED ARBORIST
W.C. #3322-A

October 22/2018

**DEFENITIONS**

| | |
|---|---|
| GOOD - | Tree with good health and structural stability that has the potential for longevity at the site. |
| FAIR - | Tree with fair health and/or structural defects that can be abated with treatment; tree will require more intense management and monitoring and may have shorter life span than those in "good" category. |
| POOR - | Tree in poor health or with significant defects that cannot be mitigated; tree is expected to continue to decline regardless of treatment. |

MT= Multi-Trunk - A tree which has more than one main trunk or stem.

*Measurement is acquired by adding up the diameter of all said trunks/stems.

These trees are measured at approximately 4 ½' above grade.

| Tree ID# | Tree Species | Tree Diameter | Notes: Condition * See Next Page |
|---|---|---|---|
| #1 | Tamarisk (Tamarix) | 30" | Fair |
| #2 | Blue Oak *(Quercus Douglasii)* | 42" | Poor |
| #3 | Blue Oak *(Quercus Douglasii)* | 28" | Good |
| #4 | Blue Oak *(Quercus Douglasii)* | 20" | Dead |
| #5 | Blue Oak *(Quercus Douglasii)* | 42" MT | Fair |
| #6 | Blue Oak *(Quercus Douglasii)* | 35" | Good |
| #7 | No Tree | | |
| #8 | Blue Oak *(Quercus Douglasii)* | 34" | Poor |
| #9 | Blue Oak *(Quercus Douglasii)* | 32" | Good |
| #10 | Blue Oak *(Quercus Douglasii)* | 43" | Good |
| #11 | Blue Oak *(Quercus Douglasii)* | 34" | Fair |

These trees are measured at approximately 4 ½' above grade.

| **Tree ID#** | **Tree Species** | **Tree Diameter** | **Notes:** Condition * See Next Page |
|---|---|---|---|
| #12 | Blue Oak *(Quercus Douglasii)* | 38" | Fair |
| #13 | No Tree | | |
| #14 | Blue Oak *(Quercus Douglasii)* | 28" | Good |
| #15 | Blue Oak *(Quercus Douglasii)* | A: 20"<br>B: 59" MT | A: Fair<br>B: Good |
| #16 | Blue Oak *(Quercus Douglasii)* | 28" | Fair |
| #17 | Blue Oak *(Quercus Douglasii)* | 35" | Poor |
| #18 | Blue Oak *(Quercus Douglasii)* | 28" | Dead |
| #19 | Blue Oak *(Quercus Douglasii)* | A:38"<br>B: 40" | A: Good<br>B: Good |
| #20 | Blue Oak *(Quercus Douglasii)* | 36" | Good |
| #21 | Blue Oak *(Quercus Douglasii)* | 32" | Good |
| #22 | Blue Oak *(Quercus Douglasii)* | 27" | Fair |

These trees are measured at approximately 4 ½' above grade.

| **Tree ID#** | **Tree Species** | **Tree Diameter** | **Notes:** Condition * See Next Page |
|---|---|---|---|
| #23 | Blue Oak *(Quercus Douglasii)* | 23" | Good |
| #24 | Blue Oak *(Quercus Douglasii)* | 32" | Fair |
| #25 | Blue Oak *(Quercus Douglasii)* | 25" | Good |
| #26 | Blue Oak *(Quercus Douglasii)* | 23" | Good |
| #27 | Blue Oak *(Quercus Douglasii)* | 19" | Good |
| #28 | Blue Oak *(Quercus Douglasii)* | 27" | Good |
| #29 | Blue Oak *(Quercus Douglasii)* | 26" | Good |
| #30 | Blue Oak *(Quercus Douglasii)* | 25" | Good |
| #31 | Blue Oak *(Quercus Douglasii)* | A: 27"<br>B: 15" | A: Fair<br>B: Dead |
| #32 | Blue Oak *(Quercus Douglasii)* | 18" | Poor |
| #33 | Blue Oak *(Quercus Douglasii)* | 30" | Fair |

:

These trees are measured at approximately 4 ½' above grade.

| **Tree ID#** | **Tree Species** | **Tree Diameter** | **Notes:** Condition * See Next Page |
|---|---|---|---|
| #34 | Blue Oak *(Quercus Douglasii)* | 32" | Fair |
| #35 | Blue Oak *(Quercus Douglasii)* | 22" | Fair |
| #36 | Blue Oak *(Quercus Douglasii)* | 27" | Good |
| #37 | Blue Oak *(Quercus Douglasii)* | 21" | Good |
| #38 | Blue Oak *(Quercus Douglasii)* | 32" | Fair |
| #39 | Blue Oak *(Quercus Douglasii)* | 14" | Fair |
| #40 | Blue Oak *(Quercus Douglasii)* | 25" | Poor |
| #41 | Blue Oak *(Quercus Douglasii)* | 32" | Good |
| #42 | Blue Oak *(Quercus Douglasii)* | 25" | Good |
| #43 | Blue Oak *(Quercus Douglasii)* | 38" MT | Poor |
| #44 | Blue Oak *(Quercus Douglasii)* | 32" | Dead |

These trees are measured at approximately 4 ½' above grade.

| **Tree ID#** | **Tree Species** | **Tree Diameter** | **Notes:** Condition * See Next Page |
|---|---|---|---|
| #45 | Blue Oak *(Quercus Douglasii)* | 23" | Good |
| #46 | Blue Oak *(Quercus Douglasii)* | 23" | Fair |
| #47 | Blue Oak *(Quercus Douglasii)* | 32" | Fair |
| #48 | Blue Oak *(Quercus Douglasii)* | 31" | Good |
| #49 | Blue Oak *(Quercus Douglasii)* | 32" | Good |
| #50 | Blue Oak *(Quercus Douglasii)* | 28" | Good |
| #51 | Blue Oak *(Quercus Douglasii)* | 35" | Fair |
| #52 | Blue Oak *(Quercus Douglasii)* | 16" | Good |
| #53 | Blue Oak *(Quercus Douglasii)* | 28" | Good |
| #54 | Blue Oak *(Quercus Douglasii)* | 27" | Good |
| #55 | Blue Oak *(Quercus Douglasii)* | 29" | Good |

These trees are measured at approximately 4 ½' above grade.

| **Tree ID#** | **Tree Species** | **Tree Diameter** | **Notes:** Condition * See Next Page |
|---|---|---|---|
| #56 | Blue Oak *(Quercus Douglasii)* | 36" | Good |
| #57 | Blue Oak *(Quercus Douglasii)* | 48" | Fair |
| #58 | Blue Oak *(Quercus Douglasii)* | 31" | Poor |
| #59 | Blue Oak *(Quercus Douglasii)* | 34" | Good |
| #60 | Blue Oak *(Quercus Douglasii)* | 24" | Good |
| #61 | Blue Oak *(Quercus Douglasii)* | 34" | Poor |
| #62 | Blue Oak *(Quercus Douglasii)* | 26" | Good |
| #63 | Blue Oak *(Quercus Douglasii)* | 30" | Good |
| #64 | Blue Oak *(Quercus Douglasii)* | 23" | Good |
| #65 | Blue Oak *(Quercus Douglasii)* | 26" | Good |
| #66 | Blue Oak *(Quercus Douglasii)* | 28" | Dead |

These trees are measured at approximately 4 ½' above grade.

| **Tree ID#** | **Tree Species** | **Tree Diameter** | **Notes:** Condition * See Next Page |
|---|---|---|---|
| #67 | Blue Oak *(Quercus Douglasii)* | 27" | Good |
| #68 | Blue Oak *(Quercus Douglasii)* | 17" | Good |
| #69 | Blue Oak *(Quercus Douglasii)* | 15.5" | Good |
| #70 | Blue Oak *(Quercus Douglasii)* | 39" | Fair |
| #71 | Blue Oak *(Quercus Douglasii)* | 26" | Good |
| #72 | Blue Oak *(Quercus Douglasii)* | 28" | Fair |
| #73 | Blue Oak *(Quercus Douglasii)* | 36" | Poor |
| #74 | Blue Oak *(Quercus Douglasii)* | 36" | Good |
| #75 | Blue Oak *(Quercus Douglasii)* | 27" | Good |
| #76 | Blue Oak *(Quercus Douglasii)* | 25.5" | Good |
| #77 | Blue Oak *(Quercus Douglasii)* | 35.5" | Good |

These trees are measured at approximately 4 ½' above grade.

| **Tree ID#** | **Tree Species** | **Tree Diameter** | **Notes:** Condition * See Next Page |
|---|---|---|---|
| #78 | Blue Oak *(Quercus Douglasii)* | 35" | Poor |
| #79 | Blue Oak *(Quercus Douglasii)* | 27" | Good |
| #80 | Blue Oak *(Quercus Douglasii)* | A: 35"<br>B: 18 | A: Good<br>B: Good |
| #81 | Blue Oak *(Quercus Douglasii)* | 29" | Good |
| #82 | Blue Oak *(Quercus Douglasii)* | 20" | Poor<br>Bee Hive |
| #83 | Blue Oak *(Quercus Douglasii)* | 28.5" | Fair |
| #84 | Blue Oak *(Quercus Douglasii)* | 28" | Poor |
| #85 | Blue Oak *(Quercus Douglasii)* | 29.5" | Good |
| #86 | Blue Oak *(Quercus Douglasii)* | 37.5" | Good |
| #87 | Blue Oak *(Quercus Douglasii)* | 19.5" | Good |
| #88 | Blue Oak *(Quercus Douglasii)* | 22" | Good |

These trees are measured at approximately 4 ½' above grade.

| **Tree ID#** | **Tree Species** | **Tree Diameter** | **Notes:** Condition * See Next Page |
|---|---|---|---|
| #89 | Blue Oak *(Quercus Douglasii)* | 35" MT | Good |
| #90 | Blue Oak *(Quercus Douglasii)* | 28" | Good |
| #91 | Blue Oak *(Quercus Douglasii)* | 27" | Good |
| #92 | Blue Oak *(Quercus Douglasii)* | 30" | Fair |
| #93 | Blue Oak *(Quercus Douglasii)* | 36" | Poor |
| #94 | Blue Oak *(Quercus Douglasii)* | 24" | Good |
| #95 | Blue Oak *(Quercus Douglasii)* | 29" | Fair |
| #96 | Blue Oak *(Quercus Douglasii)* | 29" | Poor |
| #97 | Blue Oak *(Quercus Douglasii)* | 36" | Fair |
| #98 | Blue Oak *(Quercus Douglasii)* | 32" | Good |
| #99 | Blue Oak *(Quercus Douglasii)* | 37" | Good |

These trees are measured at approximately 4 ½' above grade.

| **Tree ID#** | **Tree Species** | **Tree Diameter** | **Notes:** Condition * See Next Page |
|---|---|---|---|
| #100 | Blue Oak *(Quercus Douglasii)* | 31" | Poor |
| #101 | Blue Oak *(Quercus Douglasii)* | 32" | Fair |
| #102 | Blue Oak *(Quercus Douglasii)* | 26" | Good |
| #103 | Blue Oak *(Quercus Douglasii)* | 25" | Fair |
| #104 | Blue Oak *(Quercus Douglasii)* | 24" | Good |
| #105 | Blue Oak *(Quercus Douglasii)* | 42" | Good |
| #106 | Blue Oak *(Quercus Douglasii)* | A: 25"<br>B: 23" | A: Good<br>B: Good |
| #107 | Valley Oak *(Quercus Lobata)* | 31" | Good |
| #108 | Shrubs | | |
| #109 | Valley Oak (*Quercas Lobata)* | 28" | Good |
| #110 | Willow (Salix) | 64" MT | Good |

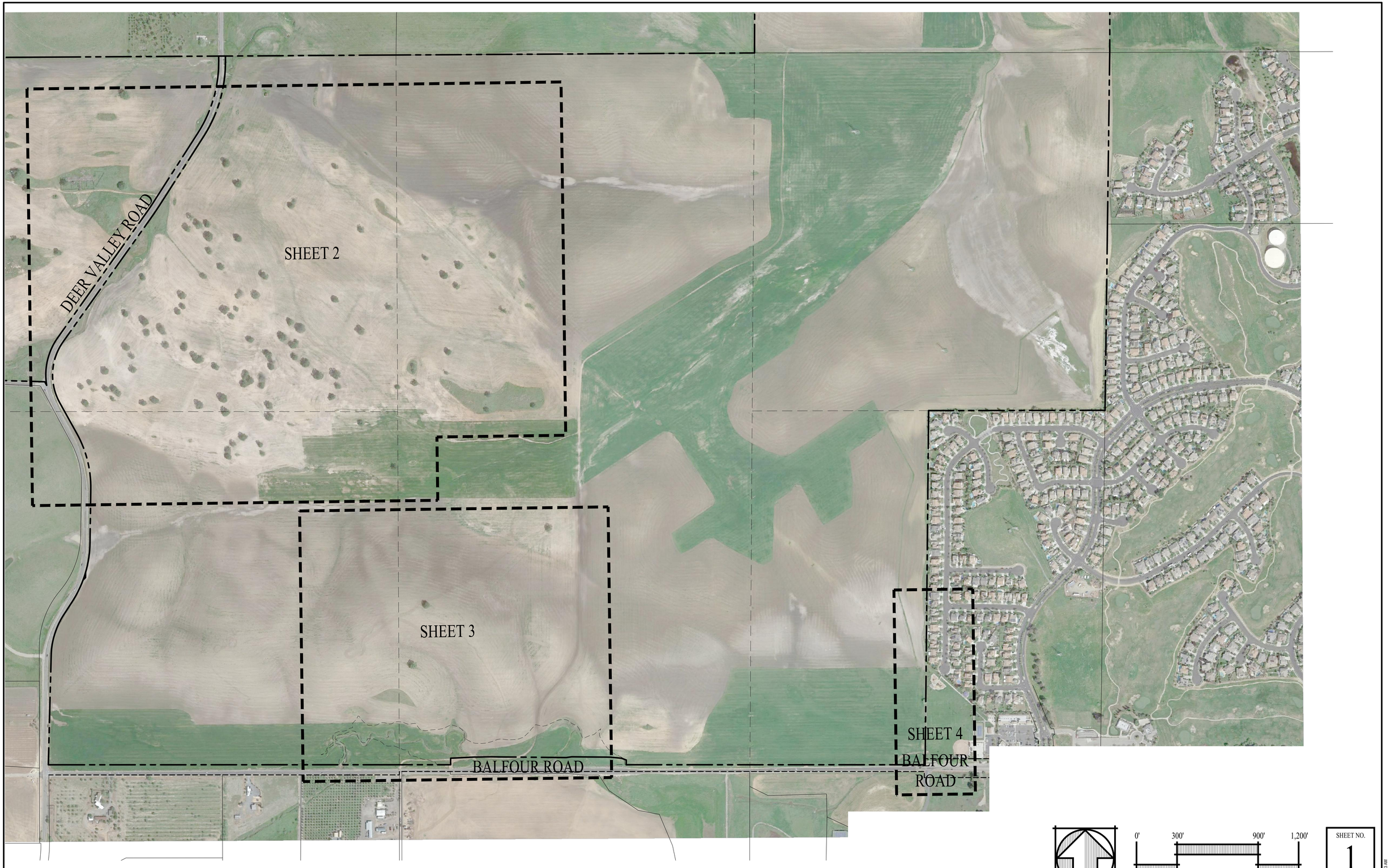
I certify that all the statements of fact in this report are true, complete and correct to the best of my knowledge and belief, and that they are made in good faith.

Respectfully,



Stewart's Tree Service, Inc.
Patrick Stewart

ISA Certified Arborist #WC-3322-A




0' 300' 900' 1,200'

SCALE: 1" = 300'

SHEET NO.
1
OF 4 SHEETS

10/30/2018 11:53 AM

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DEER VALLEY ROAD

## LEGEND

| | |
|---|---|
| 3 | EXISTING TREE IN "GOOD" CONDITION |
| 12 | EXISTING TREE IN "FAIR" CONDITION |
| 18 | EXISTING TREE IN "POOR" CONDITION |

NOTE:

EXISTING TREE NUMBERING AND RESPECTIVE TREE CONDITION ARE PER REPORT BY STEWART'S TREE SERVICE, INC. TITLED "TREE SURVEY: RANCH AT DEER VALLEY".

0' 300' 900' 1,200'

SCALE: 1" = 300'

SHEET NO. 2 OF 4 SHEETS

10/29/2018 11:53 AM

F:\974\974-70\ACAD\EXHIBITS\XB-015_TREE LOCATIONS_AERIAL EXHIBIT.DWG




# LEGEND

63 EXISTING TREE IN "GOOD" CONDITION

NOTE:

EXISTING TREE NUMBERING AND RESPECTIVE TREE CONDITION ARE PER REPORT BY STEWART'S TREE SERVICE, INC. TITLED "TREE SURVEY: RANCH AT DEER VALLEY".

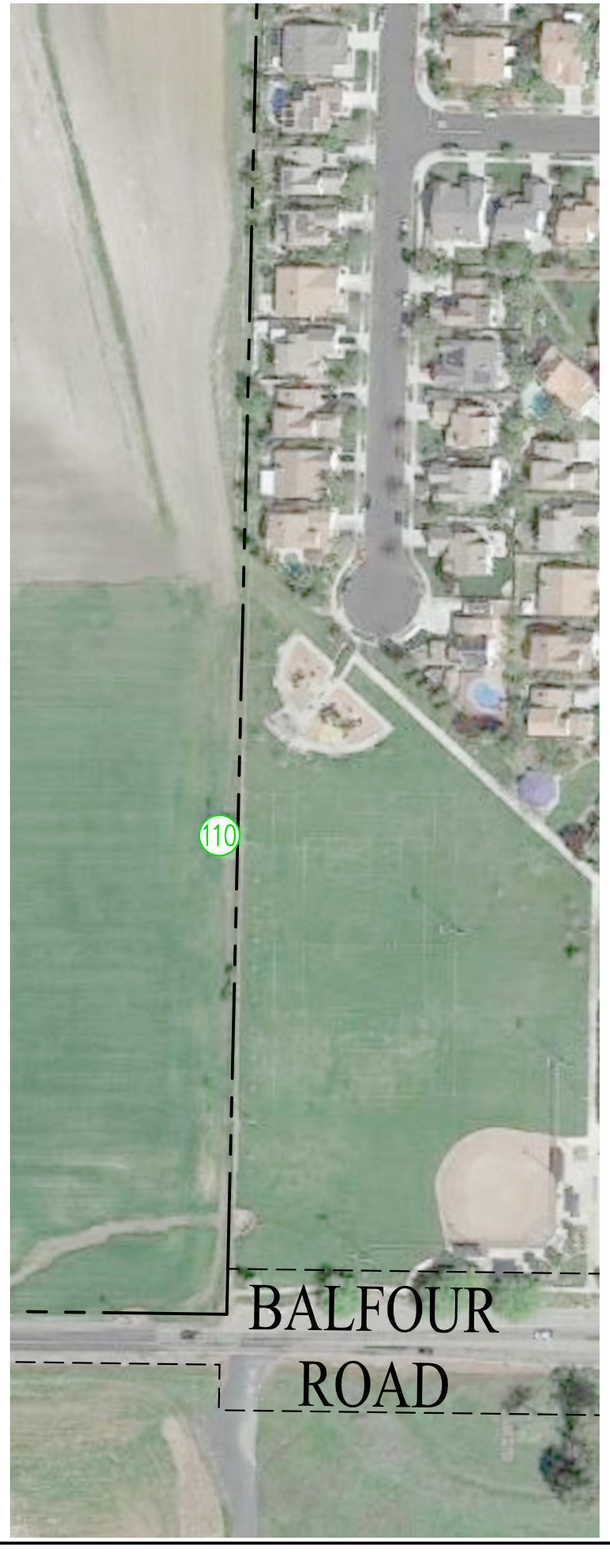
0' 200' 600' 800'

SCALE: 1" = 200'

SHEET NO.
3
OF 4 SHEETS

10/30/2018 11:53 AM

F:\974\974-70\ACAD\EXHIBITS\XB-015_TREE LOCATIONS_AERIAL EXHIBIT.DWG




# LEGEND

110 EXISTING TREE IN "GOOD" CONDITION

NOTE:

EXISTING TREE NUMBERING AND RESPECTIVE TREE CONDITION ARE PER REPORT BY STEWART'S TREE SERVICE, INC. TITLED "TREE SURVEY: RANCH AT DEER VALLEY".

0' 200' 600' 800'

SCALE: 1" = 200'

SHEET NO.
4
OF 4 SHEETS

10/30/2018 11:53 AM

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# Appendix D

Project No.
**04894.002.000**

January 23, 2019

Ms. Lisa Borba
GBN Partners LLC
3820 Blackhawk Drive
Danville, CA 94506

Subject: Ginochio Property
Balfour Road and Deer Valley Road
Contra Costa County, California

## PRELIMINARY GEOTECHNICAL SUMMARY

Reference: ENGEO, Preliminary Geotechnical Exploration, Vineyards South, Brentwood, California; July 11, 2002; Project No. 4894.5.001.01.

Dear Ms. Borba:

As requested and authorized by you, we have completed a preliminary geotechnical summary of the Ginochio property in Contra Costa County, California. The purpose of this study is to describe the site conditions and development constraints from a geotechnical perspective.

## SCOPE OF WORK

Our scope of services for this preliminary geotechnical summary included:

- Discussion of expected physical properties of the typical soils in the project area.
- Identification of potential geotechnical constraints such as shallow groundwater, faulting, expansive soils, compressible soils, lateral spreading, inundation and liquefiable soils, as necessary.
- Review of existing geotechnical documents.
- Preliminary discussion for the treatment of geotechnical constraints.
- Preliminary recommendations for suitable foundation types for development.
- Preliminary pavement recommendations.
- Conclusions regarding the suitability of the site for development and recommendations for further design-level study.

## SITE LOCATION AND PROPOSED DEVELOPMENT

The subject property consists of approximately 820 acres of undeveloped agricultural land located north of Balfour Road and east of Deer Valley Road in Contra Costa County, California, as shown on Figures 1 and 2. Based on a review of available historic photos, the majority of the site appears to have been used for agricultural purposes since 1933. Land uses of adjoining properties include the Shadow Lakes residential development to the east, dryland farming to the north, Deer Valley Road to the west, and Balfour Road to the south.

Based on a preliminary site development plan dated October 26, 2018, it is our understanding that the site will be developed for residential use. We expect that the proposed structures will be one and two stories in height and that the development will include various supporting infrastructure.

## SITE CONDITIONS

The property consists of various hills and valleys and ranges in elevation from approximately 191 feet above sea level to 385 above sea level. A shallow seasonal creek channel crosses the southeastern corner of the site and a natural drainage area crosses the site from west to east.

The property is currently undeveloped except for one active gas well in the northeastern portion of the property. Historically, the property has been used for dry land farming, cattle grazing, and oil production on the eastern portion of the property, which has since been abandoned. A pipeline easement extends through the eastern portion of the Property and contains a 24-inch Crimson pipeline, an 18-inch Kinder Morgan pipeline, and a 26-inch abandoned PG&E natural gas pipeline. A transmission line also trends through the eastern portion of the Property. Along with the onsite active gas production well, the Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR) website and map database identified seven plugged and abandoned wells onsite.

It is our understanding that portions of the site were previously mined. The approximate locations of the previous known mines are shown on Figures 3 and 4.

## REGIONAL GEOLOGY AND SEISMIC SETTING

The site is located in the Coast Ranges geomorphic province on the eastern side of the Diablo Range. The regional geology in this area has been mapped by Dibblee (2006), as shown on Figure 3, respectively. The geology of the low-lying areas consists of alluvial deposits from the Quaternary Period. The upland areas are underlain by sandstone and shale of Tertiary age. Review of the Dibblee Geologic Map (2006) found that the Property is underlain by surficial sediments, the Kreyenhagen formation, Domengine sandstone, and the Meganos formation; specifically, the following:

- Qa – alluvial pebble gravel, sand and clay of valley areas
- Tkm – Markley Sandstone Member, light gray to tan, semi friable, bedded, fine to medium grained, arkosic
- Tkn – Nortonville Shale Member, clay shale or claystone, gray micaceous, bedded, argillaceous
- Tds – sandstone, light gray to tan, medium grained, semi friable, arkosic
- Tmge – greenish-gray to light gray, biotite-rich siltstone and silty mudstone

Figure 4 shows preliminary locations of landslides and other surficial deposits previously mapped by ENGEO in the above-referenced report.

No active faults are mapped across the project site by the California Division of Mines and Geology (CDMG). The Antioch Fault is mapped across the central portion of the site as shown on Figure 4; however, the CDMG (1991) has determined that this fault is not Holocene active and

recommended that the fault not be zoned for special studies. Seismic sources near the Brentwood area include the Greenville fault, approximately 5 miles west; the Great Valley fault, approximately 7 miles northwest; the Concord fault, approximately 10 miles west; and the Calaveras fault, approximately 15 miles southwest.

## PREVIOUS FIELD EXPLORATIONS

In October and November 2001, ENGEO conducted a field exploration that included drilling three solid-flight auger borings and excavating 16 test pits throughout the site.

The borings were drilled to depths ranging between 21½ and 28 feet below the existing ground surface and the test pits were excavated at the site on October 31 and November 1, 2001, using a 4-wheel-drive rubber-tired backhoe with a 24-inch-wide bucket. An ENGEO Geologist logged the borings and test pits in the field during the exploration; the logs are presented in Appendix A.

### Subsurface Conditions

#### Artificial Fill

Existing known fills at the site include backfill over existing pipelines, mine tailings, grading for well exploration pads and detention basins. Some of these are shown on Figure 4. In general, the existing fills have been derived from onsite soils and bedrock materials; however, since the fills are not known to have been engineered, they may contain unsuitable debris. From a geotechnical standpoint, if the existing fill materials are cleared of any significant organics, debris and/or any deleterious matter, the materials can be reused as engineered fill.

#### Residual Soil

Residual natural soils, derived by in-place weathering of the underlying parent bedrock, were encountered in some of the test pits excavated in the hillside portions of the site. The residual soils consisted of silty sand in the hillside areas of the site underlain by sandstone bedrock and brown silty clays in the other hillside areas of the site. The residual soil cover encountered in the test pits ranges from about 1 to 6 feet thick over bedrock. The site residual soils encountered in the test pits generally have low to moderate plasticity.

#### Colluvial Deposits

Colluvium (Qc) was mapped by ENGEO along the base of slopes and within hollows or ravines during the 2001 field exploration. Colluvial deposits are typically deposited as a result of soil creep and are moderately compressible and weak. These deposits consist of dark brown clayey sands and silty clays with lesser amounts of sand and gravel and are noteworthy because of their susceptibility to landsliding on slopes. The typical thickness of these deposits varies from about 2 to 15 feet. In general, colluvial deposits in the site vicinity have low to high plasticity characteristics and may be considered highly to very highly expansive when subjected to fluctuations in moisture content.

#### Alluvial Deposits

Pleistocene to Holocene-age alluvium “Qal” has been mapped in the main drainages and on the gently sloping plains of the site (Figure 3). Alluvial deposits typically consist of unconsolidated sand, silt, gravel and clay with varying amounts of weathered bedrock fragments. The site

alluvium is derived from weathering of the adjacent hillside areas. The soil encountered in the borings consists of silty to sandy clay in the upper 5 feet interbedded with layers of clayey to silty sand and sandy to clayey silt at depth. With the exception of the cultivated soil at the surface, the clayey soils are typically stiff to hard, and the sandy deposits are typically medium dense in consistency.

Plasticity Index (PI) values of 21 and 35 were obtained from two near-surface soil samples collected at the site. This is an indication that the native soil materials are expected to have a medium to high plasticity and a moderate to high expansion potential.

#### Landslide Deposits

Areas of potential landslide deposits “Qls” were mapped by Nilsen (1975) as shown in Figure 4 and preliminarily identified by ENGEO at the site during the 2001 exploration. The landslides mapped in the southern portion of the site adjacent to the creek consist of shallow earthflows and slumpflow-type failures apparently caused by creek erosion at the toe of slope. The landslides mapped in other portions of the site appear to be related to dip slope type failures.

#### Bedrock

Bedrock at the site consists of Tertiary age formations as described by Dibblee (2006) that include the Markley Sandstone (Tkm), Nortonville Shale (Tkn), Domengine Sandstone (Tds) and Meganos Clay Shale (Tmge). Dibblee describes the Markley Sandstone Member as tan, arkosic sandstone, with minor shale; the Nortonville Shale Member as micaceous clay shale; the Domegine Sandstone as tan, arkosic sandstone; and the Meganos Clay Shale as a clay shale. The bedrock is mapped as trending to the northwest and dipping to the northeast. Where bedrock was encountered in Test Pits 1-3, 7-11, 16, 18-25, 27-28, it ranged in depth between 1 and 11 feet below the ground surface. The claystone and siltstone bedrock was weak to strong, crushed to closely fractured and moderately weathered. The sandstone bedrock was fine to medium grained, friable, massive and moderately to deeply weathered.

### Groundwater Levels

During the 2001 exploration, groundwater was encountered in Borings B-1 through B-5 between 6½ and 13 feet below ground surface. Fluctuations in groundwater levels occur seasonally and over a period of years because of variations in precipitation, temperature, irrigation and other factors.

## CONCLUSIONS AND RECOMMENDATIONS

Based on our review of the site conditions, aerial images and our experience on nearby projects, it is our opinion that your proposed residential development is feasible for the subject site. A summary of the expected geologic constraints as well as some preliminary recommendations are summarized below.

### Geologic Hazards and Discussions

The major geotechnical hazards at the site are discussed below. The risks associated with these hazards should be addressed with site-specific geotechnical explorations during the project design development.

## Liquefaction

Soil liquefaction results from loss of strength during cyclic loading, such as imposed by earthquakes. Soils most susceptible to liquefaction are clean, loose, saturated, uniformly graded, fine-grained sands. In general, blow counts for saturated sands were high. However, a thin layer in Boring B-1 could be susceptible to liquefaction during strong ground shaking. Mitigating this condition can typically be performed by founding the proposed residences on post-tensioned concrete mat foundations. However, a liquefaction analysis and mitigation recommendations should be provided in a design-level geotechnical report.

## Landslides

The identified potential landslide areas shown on Figure 4 have a relatively high likelihood of experiencing future instability unless suitable mitigation measures are carried out. Appropriate measures to mitigate potential landslide hazards are dependent on factors such as the relationship of the landslide to the proposed development and to environmental factors such as visibility. Landslides located outside the area of planned development that do not have the potential to adversely impact the proposed development may be left in place provided that the visual impacts of possible landslide movement are acceptable. Landslides located within the limits of grading or adversely affecting the proposed development may be mitigated during grading by removal and replacement, setbacks, debris benches, or other stabilizing methods.

## Expansive Soil

The expansive nature of the native soil and claystone bedrock is of significant geotechnical concern in this region. The clayey soil and claystone materials at the subject area are considered moderately to highly expansive. Expansive soils shrink and swell as a result of moisture changes, which can cause heaving and cracking of slabs-on-grade, pavements, and structures founded on shallow foundations. Building damage due to moisture changes in expansive soils can be reduced by appropriate grading practices and using post-tensioned concrete mat foundations or similarly stiffened foundation systems that are designed to resist the deflections associated with soil expansion. Specific recommendations to mitigate expansive soils will be provided in a design-level geotechnical report.

## Compressible Soil

Excessive total and differential settlement at the site may result from: (1) consolidation of the compressible colluvial deposits in swale areas where fills will be placed; and (2) settlement of foundation elements supported directly over these compressible colluvial deposits. To reduce settlement resulting from these deposits, it is recommended that these deposits be over-excavated to expose stiff in-place materials and grades restored with properly compacted engineered fill material. It is anticipated that these deposits may be reused as fill material.

## Coal Mining

The subject site is located in an area of historic coal mining. During ENGEO's 2001 field exploration and geologic mapping, one open and one mostly backfilled mine opening were observed at the site. At that time, the site owner stated that the mine openings were only test tunnels at the site. Upon review of readily available historic literature regarding the mining operations in the site vicinity, no information was located regarding the site mines. Additional exploration should be conducted in the known and suspected mine areas to determine the depth

and extent of the mine workings. These studies may include test pits or geophysical surveys to determine the nature of the mine workings at the site. Mining openings and underground workings can be mitigated by removal and recompaction of the overlying materials or by filling the mine excavations with grout.

### Abandoned Oil and Gas Wells

A number of abandoned oil and gas wells were shown on the DOGGR website. Areas impacted by the well-drilling activities can be mitigated by removal and replacement of the affected material, capping the well drilling area with a sufficient thickness of fill material, and/or avoidance of the area. During future site exploration, we recommend that the locations of the abandoned oil and gas wells be determined. The well and surrounding area should be evaluated for potential geotechnical impacts, such as loose backfill material.

## Foundations

Due to the anticipated highly expansive surface soils, we expect that the proposed residential structures will be founded on stiffened foundations such as post-tensioned concrete mat foundations. We expect that the foundations will be approximately 10 inches thick.

## Pavement

Based on our experience in the area, we expect that much of the near-surface clayey soils will have an R-value of approximately 5. Using estimated traffic indices for various pavement loading requirements, we developed the following recommended preliminary pavement sections using Procedure 608 of the Caltrans Highway Design Manual (including the asphalt factor of safety).

**TABLE 1: Preliminary Asphalt Concrete Pavement Sections**

| TRAFFIC INDEX | SECTION | |
|---|---|---|
| | HOT MIX ASPHALT (INCHES) | CLASS 2 AGGREGATE BASE (INCHES) |
| 5 | 4 | 8 |
| 6 | 4 | 12 |
| 7 | 4 | 16 |
| 8 | 5 | 18 |
| 9 | 5.5 | 21 |
| 11 | 7 | 26 |

# DESIGN-LEVEL GEOTECHNICAL REPORT

Prior to final project design, we recommend ENGEO be retained to perform a design-level geotechnical exploration at the site. We anticipate that a design-level exploration will include some combination of soil borings, cone penetration tests, test pits and geophysical surveys within the development area with associated laboratory testing. This information will be used to provide data for preparation of specific recommendations regarding grading, foundations, and drainage for the proposed construction. The additional explorations will also allow for a detailed evaluation of the landslides, existing mines, as well as expansion and liquefaction potentials of the site soils. The report will also need to provide techniques and procedures to be implemented during design and construction to mitigate the potential geotechnical hazards.

## CLOSING

The comments provided in this letter are professional opinions developed in accordance with current standards of geotechnical engineering practice; no warranty is expressed or implied. If you have any questions or comments regarding this letter, please call and we will be glad to discuss them with you.

Sincerely,

ENGEO Incorporated

Ana Lua

Steve Harris, GE




al/sh/jf

Attachments: Figures 1 through 5
Appendix A – Exploration Logs and Laboratory Results

## FIGURES

**Figure 1: Vicinity Map**
**Figure 2: Site Plan**
**Figure 3: Regional Geologic Map**
**Figure 4: Regional Geologic and Landslide Map**
**Figure 5: Regional Faulting and Seismicity Map**

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BASEMAP SOURCE: ESRI MAPPING SERVICE

ENGEO Expect Excellence

# VICINITY MAP

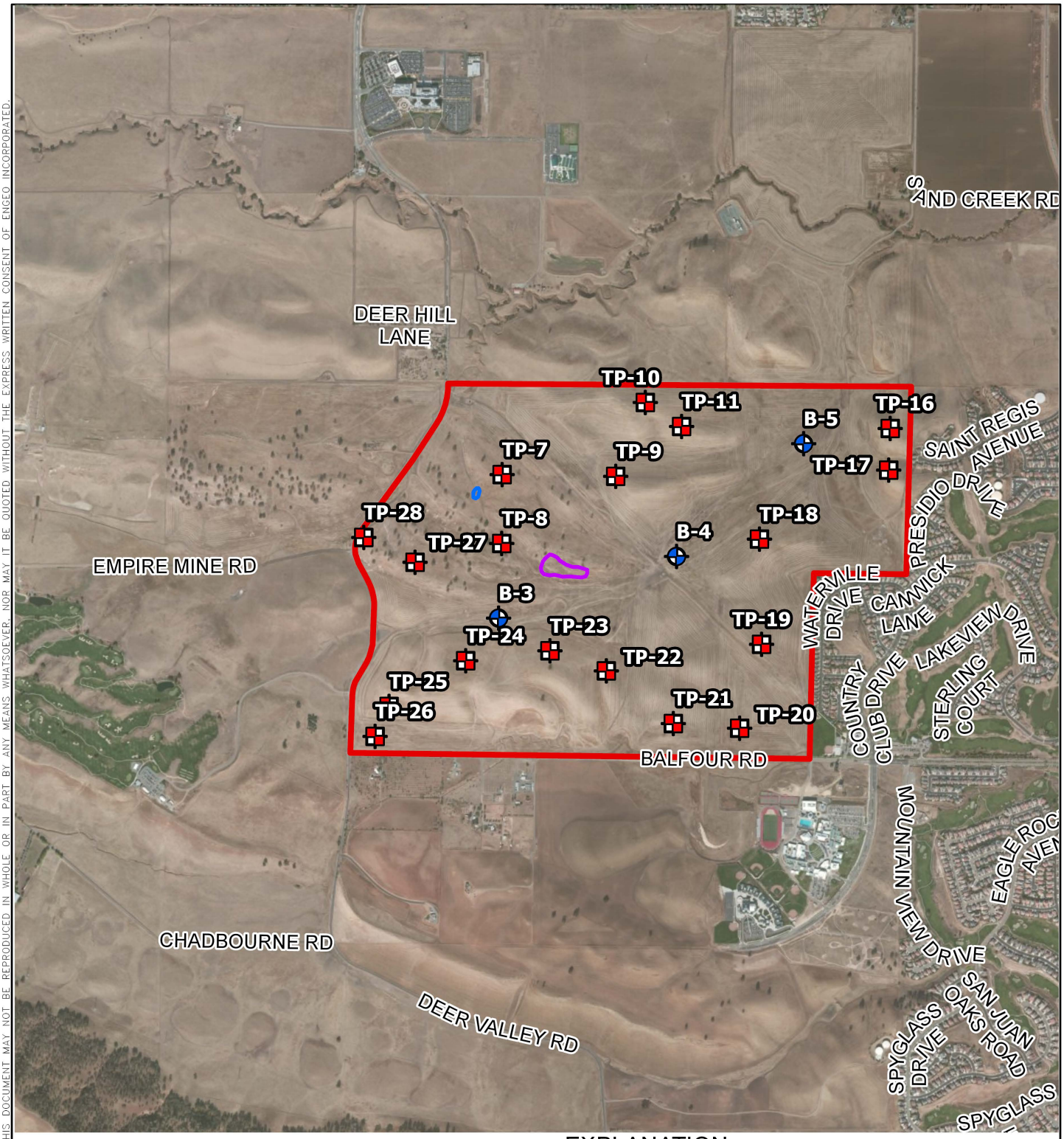
GINOCHIO PROPERTY

CONTRA COSTA COUNTY, CALIFORNIA

| | | |
|---|---|---|
| PROJECT NO. : 04894.002.000 | | FIGURE NO. 1 |
| SCALE: AS SHOWN | | |
| DRAWN BY: QRL | CHECKED BY: SDH | |

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USER: QLIANG

ORIGINAL FIGURE PRINTED IN COLOR




## EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

- PROJECT SITE
- MINE OPENING - MOSTLY BACKFILLED
- POSSIBLE MINE WORKINGS AREA
- TP-28 TEST PIT (ENGEO, 2001)
- B-5 BORING (ENGEO, 2001)

N

0 1,000 2,000

FEET

BASEMAP SOURCE: ESRI MAPPING SERVICE

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# SITE PLAN

GINOCHIO PROPERTY

CONTRA COSTA COUNTY, CALIFORNIA

PROJECT NO. : 04894.002.000

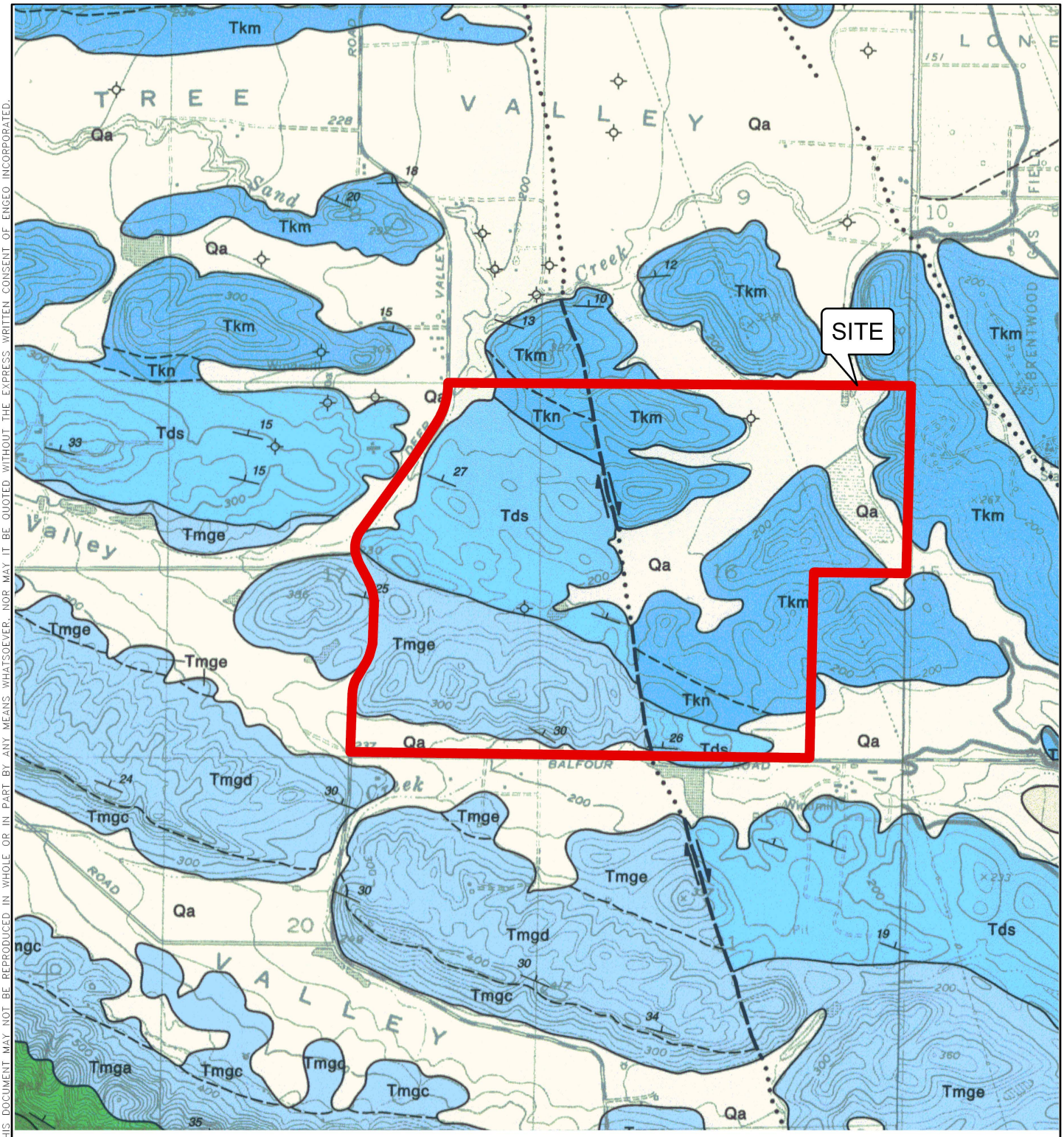
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FIGURE NO. 2

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USER: QLIANG

ORIGINAL FIGURE PRINTED IN COLOR




## EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

| | |
|---|---|
| Qa | ALLUVIUM PEBBLE GRAVEL |
| Tkm | MARKLEY SANDSTONE MEMBER |
| Tkn | NORTONVILLE SHALE MEMBER |
| Tds | SANDSTONE |
| Tmge | GREENISH-SILTSTONE AND SILTY MUDSTONE |
| Tmgd | SANDSTONE MEMBER |
| Tmgc | SHALE MEMBER |
| Tmga | SANDSTONE WITH BASAL CONGLOMERATE |
| Kdv | SANDSTONE |

N

0 1,000 2,000

FEET

BASEMAP SOURCE: DIBBLEE, 2006

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# REGIONAL GEOLOGIC MAP

GINOCHIO PROPERTY

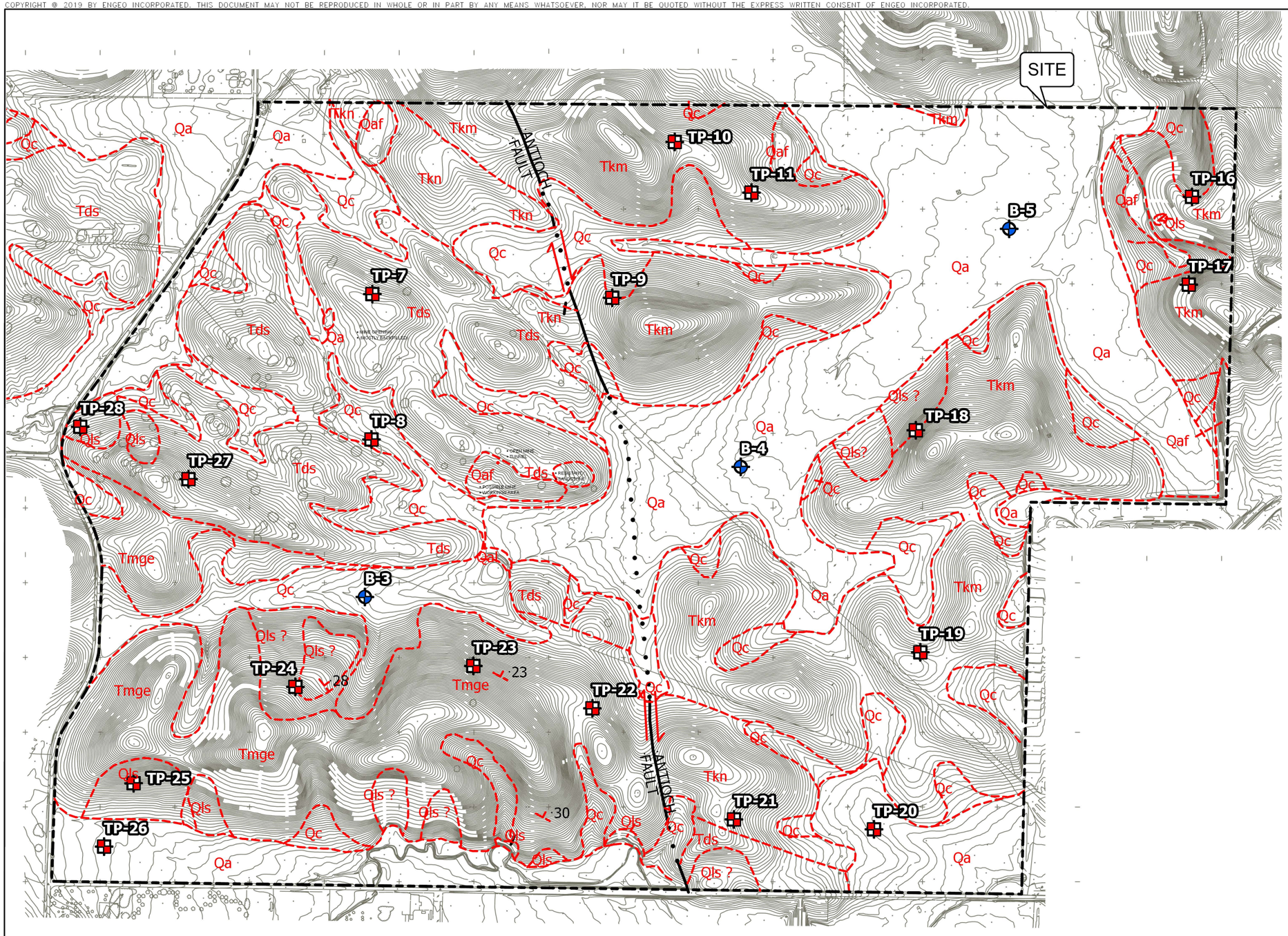
CONTRA COSTA COUNTY, CALIFORNIA

| | |
|---|---|
| PROJECT NO. : 04894.002.000 | FIGURE NO. 3 |
| SCALE: AS SHOWN | |
| DRAWN BY: QRL | CHECKED BY: SPM |

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## EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

- PROJECT SITE
- TP-28 — TEST PIT (ENGEO, 2001)
- B-5 — BORING (ENGEO, 2001)
- GEOLOGIC CONTACT
- Qa — ALLUVIUM
- Qaf — ARTIFICIAL FILL
- Qls — LANDSLIDE
- Qc — COLLUVIAL DEPOSIT
- Tkm — MARKLEY SANDSTONE
- Tkn — NORTONVILLE SHALE
- Tds — DOMENGINE SANDSTONE
- Tmge — MEGANOS CLAY SHALE
- FAULT-DASHED WHERE INFERRED, DOTTED WHERE CONCEALED, QUERIED WHERE EXISTENCE IS DOUBTFUL DOUBLE ARROWS INDICATE STRIKE-SLIP MOVEMENT

BASE MAP SOURCE:
CARLSON, BARBEE AND GIBSON, INC

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# REGIONAL GEOLOGIC AND LANDSLIDE MAP

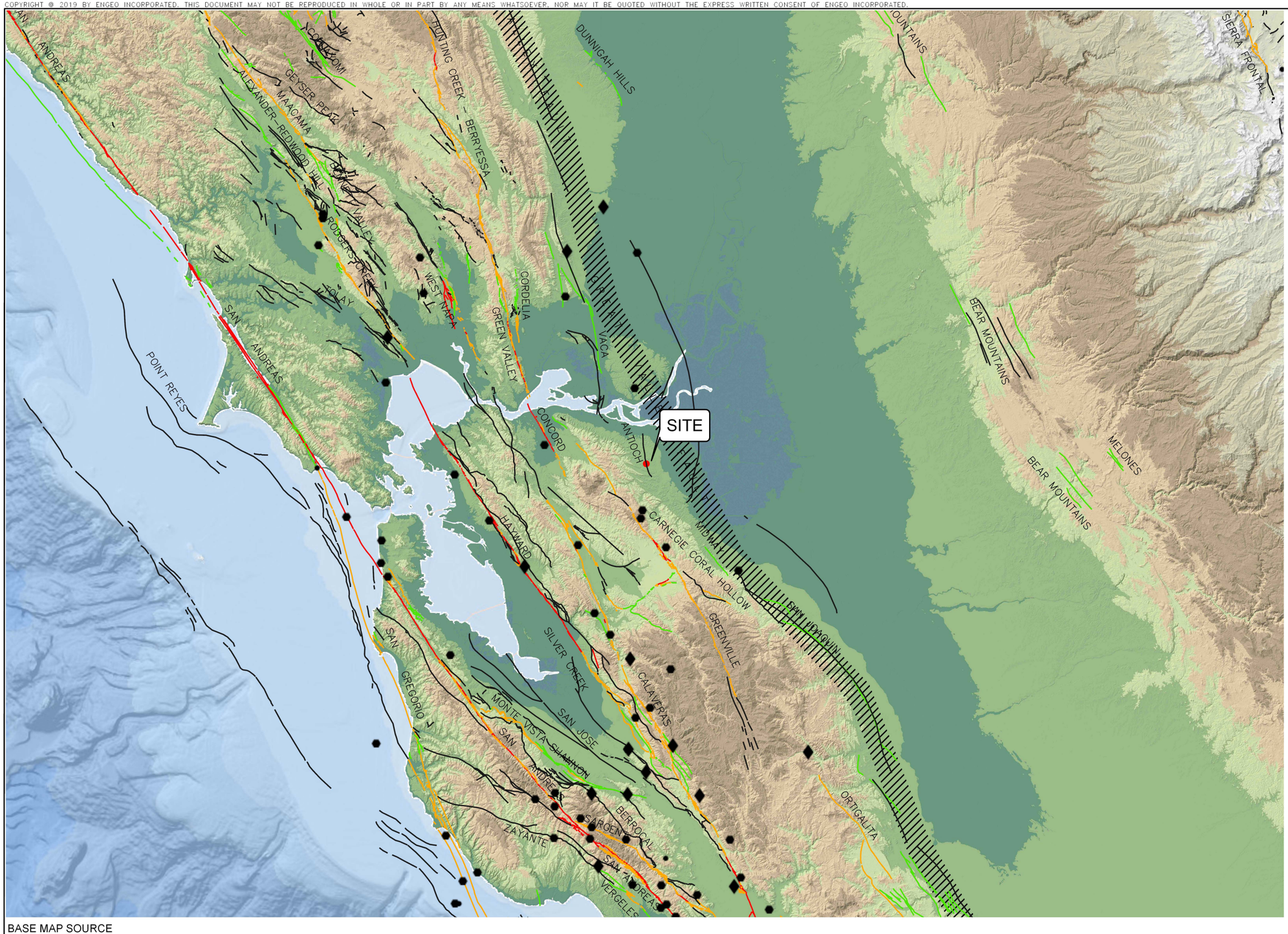
GINOCHIO PROPERTY
CONTRA COSTA COUNTY, CALIFORNIA

| | |
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| PROJECT NO. : 04894.002.000 | FIGURE NO. 4 |
| SCALE: AS SHOWN | |
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USER: QLIANG

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## EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

**EARTHQUAKE**

- MAGNITUDE 7+
- MAGNITUDE 6-7
- MAGNITUDE 5-6

**USGS QUATERNARY FAULTS**

- HISTORICAL
- LATEST QUATERNARY
- LATE QUATERNARY
- UNDIFFERENTIATED QUATERNARY

HISTORIC BLIND THRUST FAULT ZONE

BASE MAP SOURCE
ESRI, GARMIN, GEBCO, NOAA NGDC, AND OTHER CONTRIBUTORS
COLOR HILLSHADE IMAGE BASED ON THE NATIONAL ELEVATION DATA SET (NED) AT 30 METER RESOLUTION
U.S.G.S. QUATERNARY FAULT DATABASE, 2018
U.S.G.S. HISTORIC EARTHQUAKE DATABASE (1800-PRESENT)

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# REGIONAL FAULTING AND SEISMICITY

GINOCHIO PROPERTY
CONTRA COSTA COUNTY, CALIFORNIA

| | |
|---|---|
| PROJECT NO. : 04894.002.000 | FIGURE NO. 5 |
| SCALE: AS SHOWN | |
| DRAWN BY: QRL | CHECKED BY: SDH |

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ORIGINAL FIGURE PRINTED IN COLOR

# APPENDIX A

## Exploration Logs
## Laboratory Results

4894.002.000
January 23, 2019

# KEY TO BORING LOGS

| MAJOR TYPES | | | DESCRIPTION |
|---|---|---|---|
| COARSE-GRAINED SOILS MORE THAN HALF OF MAT'L LARGER THAN #200 SIEVE | GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE SIZE | CLEAN GRAVELS WITH LITTLE OR NO FINES | GW - Well graded gravels or gravel-sand mixtures<br>GP - Poorly graded gravels or gravel-sand mixtures |
| | | GRAVELS WITH OVER 12 % FINES | GM - Silty gravels, gravel-sand and silt mixtures<br>GC - Clayey gravels, gravel-sand and clay mixtures |
| | SANDS MORE THAN HALF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE SIZE | CLEAN SANDS WITH LITTLE OR NO FINES | SW - Well graded sands, or gravelly sand mixtures<br>SP - Poorly graded sands or gravelly sand mixtures |
| | | SANDS WITH OVER 12 % FINES | SM - Silty sand, sand-silt mixtures<br>SC - Clayey sand, sand-clay mixtures |
| FINE-GRAINED SOILS MORE THAN HALF OF MAT'L SMALLER THAN #200 SIEVE | SILTS AND CLAYS LIQUID LIMIT 50 % OR LESS | | ML - Inorganic silt with low to medium plasticity<br>CL - Inorganic clay with low to medium plasticity<br>OL - Low plasticity organic silts and clays |
| | SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50 % | | MH - Inorganic silt with high plasticity<br>CH - Inorganic clay with high plasticity<br>OH - Highly plastic organic silts and clays |
| | HIGHLY ORGANIC SOILS | | PT - Peat and other highly organic soils |

## GRAIN SIZES

| U.S. STANDARD SERIES SIEVE SIZE | | | | CLEAR SQUARE SIEVE OPENINGS | | | | |
|---|---|---|---|---|---|---|---|---|
| 200 | 40 | 10 | 4 | 3/4 " | 3" | 12" | | |
| SILTS AND CLAYS | SAND | | | GRAVEL | | | COBBLES | BOULDERS |
| | FINE | MEDIUM | COARSE | FINE | COARSE | | | |

## RELATIVE DENSITY

| SANDS AND GRAVELS | BLOWS/FOOT (S.P.T.) |
|---|---|
| VERY LOOSE | 0-4 |
| LOOSE | 4-10 |
| MEDIUM DENSE | 10-30 |
| DENSE | 30-50 |
| VERY DENSE | OVER 50 |

## CONSISTENCY

| SILTS AND CLAYS | STRENGTH* | BLOWS/FOOT (S.P.T.) |
|---|---|---|
| VERY SOFT | 0-1/4 | 0-2 |
| SOFT | 1/4-1/2 | 2-4 |
| MEDIUM STIFF | 1/2-1 | 4-8 |
| STIFF | 1-2 | 8-15 |
| VERY STIFF | 2-4 | 15-30 |
| HARD | OVER 4 | OVER 30 |

## MOISTURE CONDITION

| | |
|---|---|
| DRY | Absence of moisture, dusty, dry to touch |
| MOIST | Damp but no visible water |
| WET | Visible freewater |
| SATURATED | Below the water table |

## MINOR CONSTITUENT QUANTITIES (BY WEIGHT)

| | |
|---|---|
| TRACE | Particles are present, but estimated to the less than 5% |
| SOME | 5 to 15% |
| WITH | 15 to 30% |
| .....Y | 30 to 50% |

## SAMPLER SYMBOLS

- Modified California (3" O.D.) sampler
- California (2.5" O.D.) sampler
- S.P.T. - Split spoon sampler
- Shelby Tube
- Continuous Core
- Bag Samples
- NR No Recovery

## LINE TYPES

- _____ Solid - Layer Break
- – – – – – Dashed - Gradational or approximate layer break

## GROUND-WATER SYMBOLS

- Ground-water level during drilling
- Stabilized ground-water level

ENGEO INCORPORATED
1971-2001 * 30 YEARS OF EXCELLENCE

(S.P.T.) Number of blows of 140 lb. hammer falling 30" to drive a 2-inch O.D. (1-3/8 inch I.D.) sampler

* Unconfined compressive strength in tons/sq. ft., asterisk on log means determined by pocket penetrometer

DATE OF BORING: October 23, 2001

SURFACE ELEVATION: Approx. 216 feet (66 meters)

| DEPTH (FEET) | DEPTH (METERS) | SAMPLE NUMBER | LOG, LOCATION AND TYPE OF SAMPLE | DESCRIPTION | BLOWS/FT. | qu UNCON STRENGTH (TSF) *FIELD PENET. APPROX. | IN PLACE DRY UNIT WEIGHT (PCF) | IN PLACE MOIST. CONTENT % DRY WEIGHT |
|---|---|---|---|---|---|---|---|---|
| 0 | | | | SILTY CLAY (CL), black mottled with reddish brown, very stiff to hard, dry to slightly moist, with rootlets, bioturbated. (disced zone) | | | | |
| | | 3-1C | | Same as above, with gypsum. | 44 | | | |
| | 1 | | | | | | | |
| | | 3-2C | | SILTY CLAY with sand (CL), reddish brown, very stiff, moist, with gypsum and carbonate filaments. | 31 | | 113 | 17.4 |
| 5 | | | | | | | | |
| | | 3-3C | | SILTY CLAY (CL), dark reddish brown, olive and brown, very stiff, moist, with gypsum, medium-grained quartz grains and manganese filaments. | 35 | | | |
| | 2 | | | | | | | |
| 10 | 3 | | | Grades to SANDY CLAY (SC), reddish brown, stiff, moist. Sandy gravel lense at 11 feet. | | | | |
| | | 3-4C | | SILTSTONE, olive, weak (plastic), very closely fractured, very thin bedding, deep weathering, with carbonate along fractures. ▽ | 35 | 1.5* | | |
| | 4 | | | | | | | |
| 15 | | | | | | | | |
| | 5 | 3-5C | | SANDSTONE, olive, friable, weak, closely fractured, very fine grained. (SANDY SILTSTONE) thin bedding, deep weathering, with carbonate along fractures. | 92 | | | |
| | | | | SILTSTONE, olive, weak to plastic, closely fractured, very thin bedding, deep weathering, with carbonate along fractures. | | | | |
| 20 | 6 | | | | | | | |
| | | 3-6C | | | 35 | | | |
| | | | | Bottom of boring at approximately 21 $^{1}/_{2}$ feet. Groundwater not encountered during drilling. Groundwater measured at 13 feet, 10/24/01 at 7:25 A.M. | | | | |
| | 7 | | | | | | | |
| 25 | | | | | | | | |
| | 8 | | | | | | | |
| | | | | | | | | |
| 30 | 9 | | | | | | | |
| | 10 | | | | | | | |

ENGEO INCORPORATED
1971 - 2001 * 30 YEARS OF EXCELLENCE

VINEYARDS SOUTH

BRENTWOOD, CALIFORNIA

BORING NO.: B-3

LOGGED BY: C. Jensen

PROJ. NO.: 4894.5.001.01

CHECKED BY: DRM

FIGURE NO. A-3

0541 4894.GPJ 12/27/01

DATE OF BORING: October 23, 2001

SURFACE ELEVATION: Approx. 177 feet (54 meters)

| DEPTH (FEET) | DEPTH (METERS) | SAMPLE NUMBER | LOG, LOCATION AND TYPE OF SAMPLE | DESCRIPTION | BLOWS/FT. | qu UNCON STRENGTH (TSF) *FIELD PENET. APPROX. | IN PLACE DRY UNIT WEIGHT (PCF) | IN PLACE MOIST. CONTENT % DRY WEIGHT |
|---|---|---|---|---|---|---|---|---|
| 0 | | 4-1C | | SILTY CLAY (CL), very dark brown, very stiff, dry to 1 foot then moist.<br>P I = 21 | 36 | | 111 | 9.6 |
| | | | | Same as above, with abundant gypsum filaments. | | | | |
| | 1 | 4-2C | | SILTY CLAY (CL), mottled black and olive, very stiff, moist, with gypsum. | 30 | | | |
| 5 | | 4-3C | | SANDY CLAY (CL), mottled olive and reddish brown, stiff, moist, with gypsum. | 34 | | | |
| | 2 | | | ▼ | | | | |
| | | | | SILTY SAND (SM), mottled olive and reddish brown, medium dense, moist, very fine grained, with manganese filaments. | | | | |
| 10 | 3 | 4-4C | | | 29 | 2.0* | 108 | 19.6 |
| | 4 | | | ▽ | | | | |
| 15 | | 4-5C | | CLAYEY SAND (SC), reddish brown, medium dense, moist to wet, medium grained.<br>Percent Passing #200 Sieve = 44.1 | 27 | | | |
| | 5 | | | SILTY CLAY (ML), mottled olive and reddish brown, stiff, moist, with manganese staining. | | | | |
| 20 | 6 | 4-6C | | | 33 | | | |
| | | | | SANDY SILT (ML), mottled reddish brown and olive, stiff, moist, with manganese filaments.<br>With reddish brown, claystone fragments. | | | | |
| | 7 | | | | | | | |
| 25 | | 4-7C | | | 58 | | | |
| | 8 | | | Bottom of boring at approximately 25 $^{1}/_{2}$ feet.<br>Groundwater encountered at 13 feet during drilling.<br>Groundwater measured at 6 $^{1}/_{2}$ feet, 10/24/01 at 7:30 A.M. | | | | |
| 30 | 9 | | | | | | | |
| | 10 | | | | | | | |

ENGEO INCORPORATED
1971 - 2001 * 30 YEARS OF EXCELLENCE

VINEYARDS SOUTH

BRENTWOOD, CALIFORNIA

BORING NO.: B-4

LOGGED BY: C. Jensen

PROJ. NO.: 4894.5.001.01

CHECKED BY: DRM

FIGURE NO. A-4

0541 4894.GPJ 12/27/01

DATE OF BORING: October 23, 2001

SURFACE ELEVATION: Approx. 164 feet (50 meters)

| DEPTH (FEET) | DEPTH (METERS) | SAMPLE NUMBER | LOG, LOCATION AND TYPE OF SAMPLE | DESCRIPTION | BLOWS/FT. | qu UNCON STRENGTH (TSF) *FIELD PENET. APPROX. | IN PLACE DRY UNIT WEIGHT (PCF) | IN PLACE MOIST. CONTENT % DRY WEIGHT |
|---|---|---|---|---|---|---|---|---|
| 0 | | | | SILTY CLAY (CL), black, very stiff, dry in upper 1 feet then moist. | | | | |
| | | 5-1C | | SILTY CLAY (CL), dark yellowish brown, very stiff, moist, with gypsum | 36 | | | |
| | 1 | 5-2C | | | 31 | | 105 | 18.8 |
| 5 | | 5-3C | | | 34 | 3.0 | | |
| | 2 | | | | | | | |
| 10 | 3 | 5-4C | | SILTY CLAY with sand (CL), dark yellowish brown, stiff, moist, with abundant gypsum. ▼ ▽ | 29 | | | |
| | 4 | | | | | | | |
| 15 | | | | SILTY SAND (SM), yellowish brown, medium dense, moist to wet, with gypsum. | | | | |
| | 5 | 5-5C | | | 21 | | | |
| | 6 | | | | | | | |
| 20 | | | | SILTY CLAY (CL), yellowish brown, stiff, moist. | | | | |
| | | 5-6C | | | 13 | | | |
| | 7 | | | | | | | |
| | | | | SILTY SAND (SM), yellowish brown, medium dense, moist to wet, very fine grained with coarse-grained zones. | | | | |
| 25 | | | | | | | | |
| | 8 | 5-7C | | | 16 | | | |
| | | 5-8C | | Percent Passing #200 Sieve = 49.3 | 16 | | | |
| | | | | Bottom of probe at approximately 28 feet. Groundwater encountered at 13 $^{1}/_{2}$ feet during drilling. Groundwater measured at 11 $^{1}/_{2}$ feet, 10/24/01 at 7:30 A.M. | | | | |
| 30 | 9 | | | | | | | |
| | 10 | | | | | | | |

0541 4894.GPJ 12/27/01

ENGEO INCORPORATED
1971 - 2001 * 30 YEARS OF EXCELLENCE

VINEYARDS SOUTH

BRENTWOOD, CALIFORNIA

BORING NO.: B-5

LOGGED BY: C. Jensen

PROJ. NO.: 4894.5.001.01

CHECKED BY DRJ

FIGURE NO. A-5

TEST PIT LOGS

| Test Pit Number | Depth (Feet) | Description |
|---|---|---|
| Test Pits 1 to 6 were located on parcel west of the site. | | |
| TP-7 | 0 – 0.5 | Silty SAND with organics (SM), light brown, loose, dry, with abundant organics. |
| | 0.5 – 5.5 | Silty SAND (SM) (weathered sandstone), light brown, dense, dry, weak to friable, very thick to massive bedding, deeply weathered, bioturbated with voids. |
| | 5.5 – 7.5 | SANDSTONE, reddish brown, very dense, moist, friable, massive, deeply weathered, poorly cemented, fine grained. |
| | | Bottom at 7.5 feet.<br>No free groundwater encountered. |
| TP-8 | 0 – 0.5 | Silty SAND with organics (SM), light brown, loose, dry, with abundant tilled organics and roots. |
| | 0.5 – 1 | Silty SAND (SM), light brown, dense, dry. |
| | 1 – 2 | Silty SAND (SM), light brown, very dense, dry, with bioturbated voids and magnesium staining. |
| | 2 – 3.5 | Sandy CLAY (CL) dark brown, very stiff, moist, with magnesium staining on ped surfaces. |
| | 3.5 – 5 | Clayey SAND (SC), dark brown, dense, moist, with magnesium staining and carbonate. |
| | 5 – 6.5 | Clayey SAND (SC) (weathered sandstone), olive brown, very dense, moist, weak. |

TEST PIT LOGS

| Test Pit Number | Depth (Feet) | Description |
|---|---|---|
| | 6.5 – 7 | Clayey SANDSTONE, olive, brown and purple, moist, friable to moderately strong, thin to very thin bedding moderately weathered. |
| | 7 - 9 | SANDSTONE, light olive and reddish brown, friable to moderately strong, massive, moderately weathered. |
| | | Bottom at 9 feet.<br>No free groundwater encountered. |
| TP-9 | 0 – 2 | Silty CLAY (CH), black, stiff, dry to moist, with desiccation cracks up to 2' deep and rootlets. |
| | 2 – 3.5 | Silty CLAY (CH), dark brown, very stiff, moist, well developed clay films on ped surfaces, downhill creep. |
| | 3.5 – 6 | Sandy CLAY (CL), dark brown, stiff, moist, downhill creep. |
| | 6 – 11 | Sandy CLAY (CL), reddish brown, stiff, moist, with carbonate. |
| | 11 – 13 | Silty CLAY (CL/CH), reddish brown, olive and white, medium stiff, moist, weak, crushed, deeply weathered, with abundant calcium carbonate, downhill creep at contact with bedrock. |
| | | Bulk Sample A1. |
| | 11 – 14 | SANDSTONE, olive and reddish brown, moist, friable to moderately strong, widely fractured, thin bedding, moderately weathered, fine to medium grained. |
| | | Bottom at 14 feet.<br>No free groundwater encountered. |
| TP-10 | 0 – 3 | Silty CLAY (CH), black, very stiff, dry to moist, with desiccation cracks to 3'. |
| | 3 – 7 | Silty CLAY (CL), olive brown, stiff, moist, with some carbonate, good ped development and rootlets. |

TEST PIT LOGS

| Test Pit Number | Depth (Feet) | Description |
|---|---|---|
| | 7 – 8.5 | Silty SAND with carbonate (ML), olive and white, medium dense, dry to moist, weak to friable, very closely fractured, deeply weathered, with abundant carbonate and bioturbation. |
| | 8.5 – 9 | Clayey SAND (ML), reddish brown, medium dense, moist, weak, crushed, deeply weathered, with carbonate and bioturbation. |
| | | Bulk Sample A2 collected at 8.5 feet. |
| | 9 – 10 | SANDSTONE, olive, weak to friable, massive, moderately weathered, fine to medium grained. |
| | | Bottom at 10 feet.<br>No free groundwater encountered. |
| TP-11 | 0 – 0.5 | Silty CLAY (CL/CH), dark brown, medium dense, dry, with abundant tilled organics and roots. |
| | 0.5 – 3.5 | Silty CLAY (CL), brown, stiff, dry, with roots, rootlets and desiccation cracks to 3.5'. |
| | 3.5 – 5 | Silty CLAY with SAND (CL), brown, stiff, moist. |
| | 5 – 7 | Silty CLAY with Sand (CL), light brown, stiff, moist, with carbonate. |
| | 7 – 9 | Silty SAND (SM), light brown, olive and white, medium dense, dry to moist, weak to friable, crushed, deeply weathered, with abundant carbonate. |
| | 9 – 10 | SANDSTONE, reddish brown at contact to olive, dry to moist, weak to friable, massive, moderately weathered. |
| | | Bottom at 10 feet.<br>No free groundwater encountered. |

Test Pits 12 through 15 were located in the FUA1 site.

TEST PIT LOGS

| Test Pit Number | Depth (Feet) | Description |
|---|---|---|
| TP-16 | 0 – 0.25 | Sandy CLAY (CL), dark brown, stiff, dry, with organics. |
| | 0.25 – 3 | Sandy CLAY (CL), dark brown, stiff, dry to moist, with roots and rootlets and desiccation cracks. Qc |
| | 3 – 4.25 | Sandy CLAY (CL), dark reddish brown, very stiff, moist. Qc |
| | 4.25 – 7 | Sandy CLAY (CL), dark reddish brown, very stiff, moist, with abundant carbonate filaments, very blocky structure in lower portion. |
| | 7 – 11 | Clayey SAND (SC), reddish brown, dense, moist, with carbonate |
| | 11 – 12 | SANDSTONE, olive, weak to friable, moderately fractured, massive, deeply weathered, upper 2 feet with abundant carbonate. |
| | | Bottom at 12 feet.<br>No free groundwater encountered. |
| TP-17 | 0 – 0.25 | Sandy CLAY (CL), dark brown, stiff, dry, with organics. |
| | 0.25 – 3 | Sandy CLAY (CL), dark brown, stiff, dry to moist, with rootlets and desiccation cracks. Qc |
| | 3 – 5 | Silty CLAY (CL), dark reddish brown, stiff, moist, with carbonate nodules. Qc |
| | 5 – 6.5 | Clayey SAND (SC), reddish brown, dense, moist. |
| | 6.5 – 9 | Sandy CLAY (CL), dark olive brown, stiff, moist, with blocky structure. |
| | 9 – 10 | Clayey SAND (SC), reddish brown, dense, moist. |
| | 10 – 16 | Sandy CLAY (CL), light olive, medium stiff, moist, with clay films on ped surfaces, bioturbated, and blocky structure. |
| | | Bottom at 16 feet.<br>No free groundwater encountered. |

TEST PIT LOGS

| Test Pit Number | Depth (Feet) | Description |
|---|---|---|
| TP-18 | 0 – 0.25 | Silty CLAY (CL), dark brown, stiff, dry, with organics. |
| | 0.25 – 2 | Silty CLAY (CL) dark brown, stiff to very stiff, dry to moist, with desiccation cracks. |
| | 2 – 4 | Silty CLAY (CL), reddish brown, very stiff, moist. |
| | 4 – 5.5 | Silty CLAY (CL), dark brown and olive, stiff, moist, with weathered sandstone blocks and abundant rock fragments. |
| | 5.5 – 7.5 | SANDSTONE, olive, moist, moderately strong, massive, deeply weathered. |
| | 7.5 – 10 | Sandy CLAYSTONE, reddish brown, moist, weak, closely fractured, thin bedding, deeply weathered. |
| | | Bottom at 10 feet.<br>No free groundwater encountered. |
| TP-19 | 0 – 0.25 | Silty CLAY (CL), dark brown, stiff, dry, desiccation cracks at surface 2 inches wide 6 to 12 inches deep, with organics. |
| | 0.25 – 2.5 | Silty CLAY with Sand (CL), dark olive brown, stiff to very stiff, dry to moist, with desiccation cracks. |
| | 2.5 – 4 | Silty CLAY (CL), dark olive brown, stiff to very stiff, moist, with carbonate. |
| | 4 – 5.5 | Sandy CLAY (CL), reddish brown, medium stiff, moist. |
| | 5.5 – 7 | Sandy CLAY/Clayey SAND (SC) (weathered bedrock), olive, reddish brown and light brown, dense and stiff, moist, weak, crushed fracturing, thin to very thin bedding, deeply weathered. |
| | 7 – 9 | SANDSTONE, olive and reddish brown, moist, moderately strong, closely to very closely fractured, thin to very thin bedding, moderately weathered, very fine grained with interbedded layers of claystone/siltstone. |
| | | Bottom at 9 feet.<br>No free groundwater encountered. |

TEST PIT LOGS

| Test Pit Number | Depth (Feet) | Description |
|---|---|---|
| TP-20 | 0 – 2.5 | Silty CLAY with Gravel (CL), black, stiff to very stiff, dry to moist, with organics, rootlets and angular to well rounded gravel up to 2 inches in diameter. |
| | 2.5 – 5 | Sandy CLAY (CL), black, stiff, moist, with carbonate and occasional gravel. |
| | 5 – 8 | Sandy CLAY (CL), reddish brown, stiff, moist, with gypsum and carbonate, with blocky structure. |
| | 8 – 9 | Silty SAND (SM), olive and reddish brown, medium dense, moist, with carbonate. |
| | 9 – 11 | SANDSTONE, olive and reddish brown, dry to moist, friable to moderately strong, massive, moderately weathered. |
| | | Bottom at 11 feet.<br>No free groundwater encountered. |
| TP-21 | 0 – 0.25 | Silty CLAY (CL), black, medium stiff to very stiff, dry, with organics. |
| | 0.25 – 4.5 | Silty CLAY (CL), black, very stiff, dry, with roots. |
| | 4.5 – 6 | Silty CLAY (CL/CH) (weathered claystone), olive and white, stiff, dry to moist, weak, crushed fracturing, deeply weathered, with carbonate. |
| | 6 – 9 | CLAYSTONE with carbonate, olive and white, weak, crushed fracturing, very thin bedding, deeply weathered, crushed claystone with carbonate filled fractures, with gypsum. |
| | | Bottom at 9 feet.<br>No free groundwater encountered. |
| TP-22 | 0 – 2.5 | Silty CLAY (CL), dark brown, stiff, dry, with organics in upper 0.25 feet, with rootlets and desiccation cracks. |

TEST PIT LOGS

| Test Pit Number | Depth (Feet) | Description |
|---|---|---|
| | 2.5 – 4.5 | Silty CLAY (CL) dark brown, very stiff, dry to moist, with abundant carbonate filaments. |
| | 4.5 – 7 | SILTSTONE, olive, dry, moderately strong to strong, closely fractured, massive, moderate to little weathering, with carbonate filled fractures.<br><br>Bottom at 7 feet.<br>No free groundwater encountered. |
| TP-23 | 0 – 1.7 | Silty CLAY (CL) dark brown, stiff, dry to moist, with organics in upper 0.25 feet, with roots. |
| | 1.7 – 3.5 | Silty CLAY (CL), dark brown, very stiff, moist, with carbonate ghosting. |
| | 3.5 – 6 | SILTSTONE, dark olive and reddish brown, moist, moderately strong to strong, closely fractured, thin bedding, little weathering with carbonate filled fractures.<br><br>Bedding at N60W, 23 NE<br>Bottom at 10 feet.<br>No groundwater encountered. |
| TP-24 | 0 – 1 | Silty CLAY (CL), dark brown, stiff, dry, with organics in upper 0.25 feet, with roots. |
| | 1 – 4 | Sandy CLAY (CL), reddish brown and white, stiff, dry, with abundant carbonate ghosting, with roots, with krotovina. |
| | 4 – 5 | Sandy SILT with carbonate (SM) white and light olive, medium stiff, soft light powdery texture, dry, weak to friable, approximately 80% carbonate. |
| | 5 – 7 | SANDSTONE, very fine grained, light olive, weak to friable, closely to very closely fractured, very thin to laminated bedding moderately weathered with carbonate.<br><br>Bedding at N38W, 28 NE<br>Bottom at 7 feet.<br>No free groundwater encountered. |

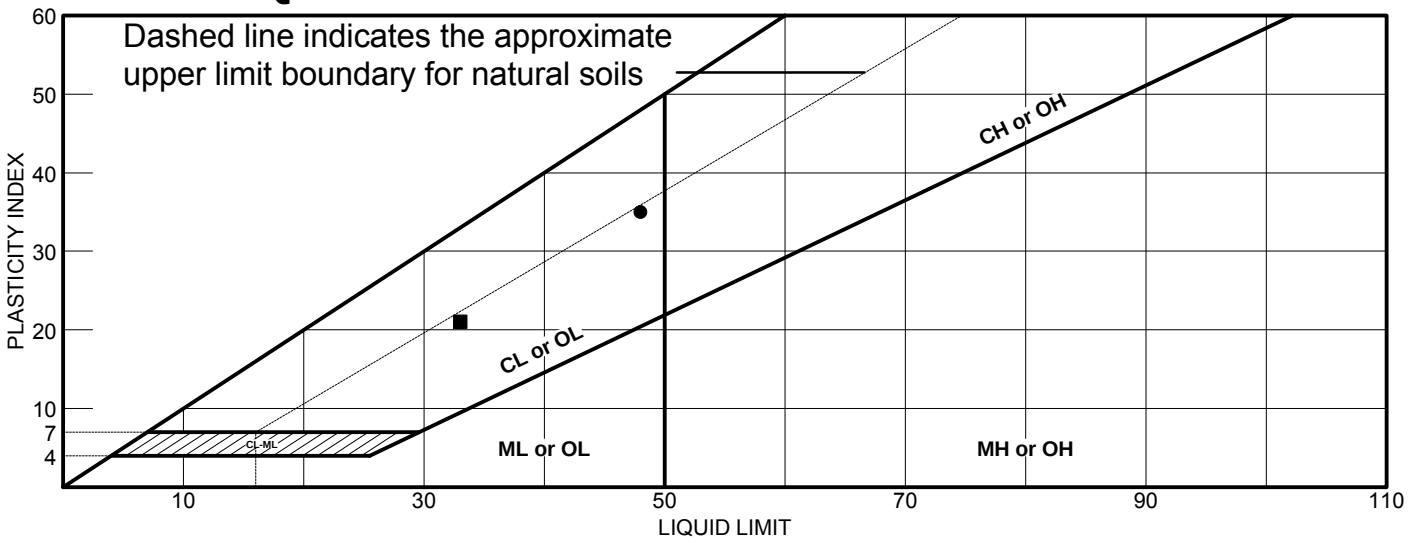
TEST PIT LOGS

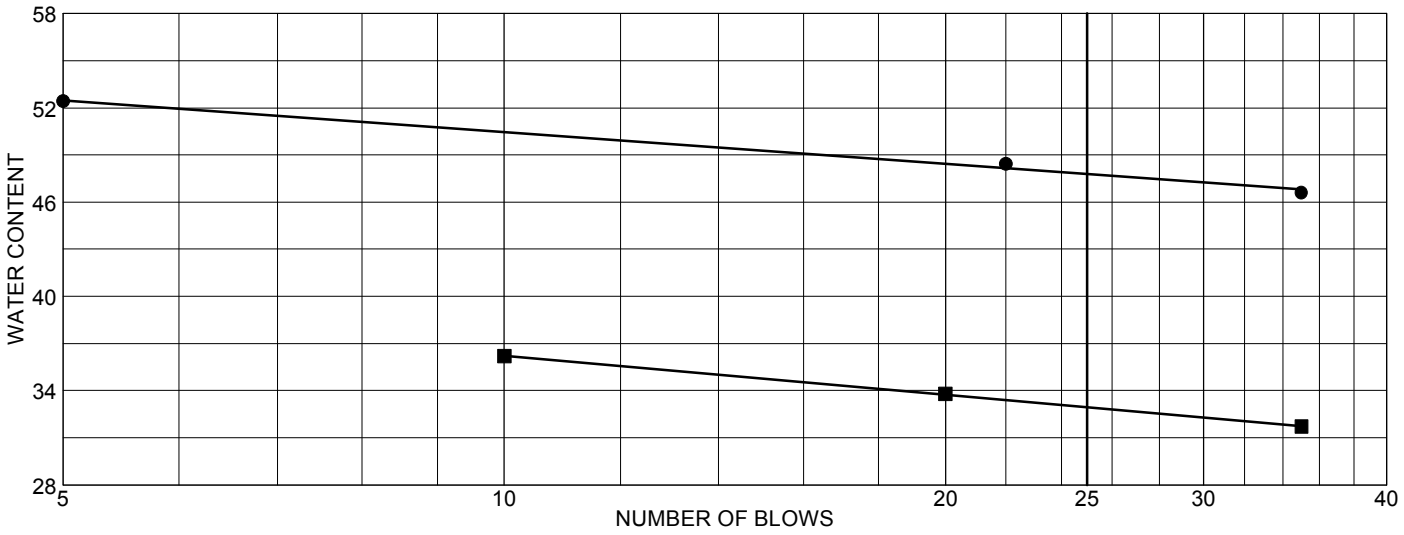
| Test Pit Number | Depth (Feet) | Description |
|---|---|---|
| TP-25 | 0 – 4 | Silty CLAY (CL), dark olive brown, stiff to very stiff, dry to moist, with organics in upper 0.25 feet, with roots, with desiccation cracks. Qc |
| | 4 – 5 | Silty CLAY (CL), olive brown, medium stiff, moist. |
| | 5 – 7.5 | Silty CLAY (CL) olive brown, stiff, moist, with carbonate nodules approximately 1 inch in diameter and claystone fragments. |
| | 7.5 – 9 | SILTSTONE, olive, moist, closely to very closely fractured, moderately weathered. |
| | | Bottom at 9 feet.<br>No free groundwater encountered. |
| TP-26 | 0 – 2 | Silty CLAY (CL), dark brown, stiff to very stiff, dry, with organics in upper 0.5 feet, with roots. |
| | 2 – 3.5 | Silty CLAY (CL), dark brown, stiff, moist, with sparse carbonate filaments. |
| | 3.5 – 5 | Sandy CLAY (CL), reddish brown, medium stiff to stiff, moist, with trace carbonate. |
| | 5 – 8 | Clayey SAND (SC), reddish brown, medium dense, moist. |
| | 8 – 12 | Sandy CLAY (CL), mottled olive and reddish brown, medium stiff, moist to wet, with some magnesium staining. |
| | | Bottom at 12 feet.<br>No free groundwater encountered. |
| TP-27 | 0 – 0.5 | Silty SAND with organics (SM), light brown, loose, dry, with organics and roots. |
| | 0.5 – 3 | Silty SAND (SM), light brown, dense to very dense, dry, bioturbated with roots. |

TEST PIT LOGS

| Test Pit Number | Depth (Feet) | Description |
|---|---|---|
| | 3 – 4 | SANDSTONE, fine to course grained, reddish brown, dry, moderately strong to strong, massive, moderately weathered.<br><br>Bottom at 4 feet.<br>No free groundwater encountered. |
| TP-28 | 0 – 0.5 | Silty SAND with organics (SM), light brown, loose, dry, with abundant organics. |
| | 0.5 – 4 | Silty SAND (SM), light brown, dense, dry, bioturbated with roots. |
| | 4 – 6 | SANDSTONE, fine to course grained, reddish brown, dry, friable, massive, moderately weathered, poorly cemented.<br><br>Bottom at 6 feet.<br>No free groundwater encountered. |

# LIQUID AND PLASTIC LIMITS TEST REPORT




| | MATERIAL DESCRIPTION | LL | PL | PI | %<#40 | %<#200 | USCS |
|---|---|---|---|---|---|---|---|
| ● | Very dark brown silty Clay to Clay with sand | 48 | 13 | 35 | | | CL-CH |
| ■ | Very dark brown silty Clay with sand | 33 | 12 | 21 | | | CL |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

**Project No.** 4894.5.001.01 **Client:** Nunn Farms

**Project:** Vineyards South, Brentwood, CA

● **Source:** PI **Sample No.:** 2-1

■ **Source:** PI **Sample No.:** 4-1

**Remarks:**

● 2-1 (1 ft.)

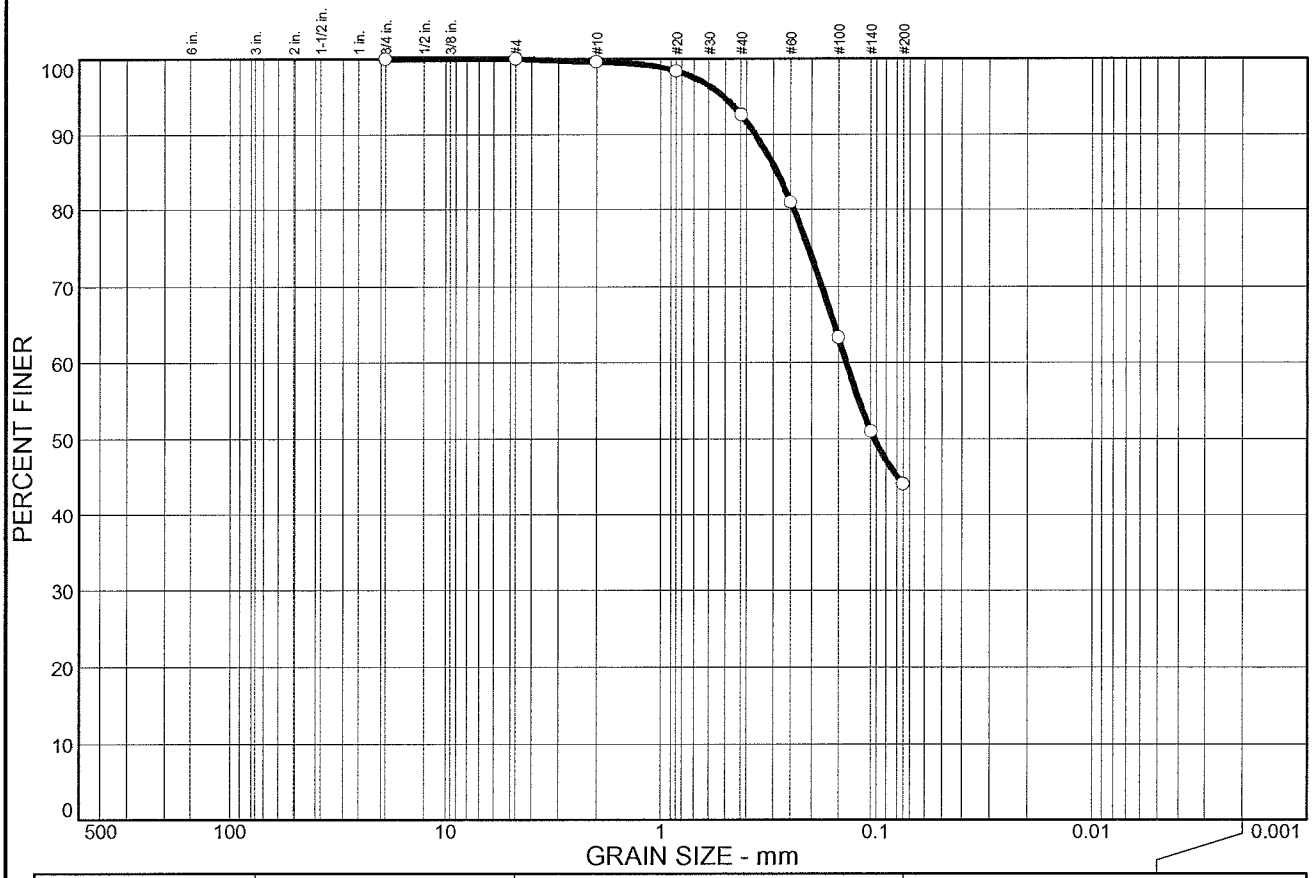
■ 4-1 (1 ft.)

ENGEO INCORPORATED

GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS MATERIALS TESTING

Figure C-1

# Particle Size Distribution Report




| % COBBLES | % GRAVEL | | % SAND | | | % FINES | |
|---|---|---|---|---|---|---|---|
| | CRS. | FINE | CRS. | MEDIUM | FINE | SILT | CLAY |
| 0.0 | 0.0 | 0.0 | 0.4 | 7.0 | 48.5 | 44.1 | |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| .75 in. | 100.0 | | |
| #4 | 100.0 | | |
| #10 | 99.6 | | |
| #20 | 98.4 | | |
| #40 | 92.6 | | |
| #60 | 81.0 | | |
| #100 | 63.3 | | |
| #140 | 51.0 | | |
| #200 | 44.1 | | |

* (no specification provided)

**Soil Description**

Yellwish brown clayey Sand

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{85}$= 0.290 $D_{60}$= 0.138 $D_{50}$= 0.102
$D_{30}$= $D_{15}$= $D_{10}$=
$C_u$= $C_c$=

**Classification**

USCS= SC AASHTO= A-4(0)

**Remarks**

F.M.=0.37

**Sample No.:** 4-5 **Source of Sample:** Grad. **Date:** 12-12-01
**Location:** **Elev./Depth:** 15 ft.

ENGEO INCORPORATED
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
MATERIALS TESTING

**Client:** Nunn Farms
**Project:** Vineyards South, Brentwood, CA
**Project No:** 4894.5.001.01

Figure C-5

# Particle Size Distribution Report




| % COBBLES | % GRAVEL | | % SAND | | | % FINES | |
|---|---|---|---|---|---|---|---|
| | CRS. | FINE | CRS. | MEDIUM | FINE | SILT | CLAY |
| 0.0 | 0.0 | 2.2 | 3.8 | 9.7 | 35.0 | 49.3 | |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| .75 in. | 100.0 | | |
| #4 | 97.8 | | |
| #10 | 94.0 | | |
| #20 | 90.0 | | |
| #40 | 84.3 | | |
| #60 | 77.6 | | |
| #100 | 67.2 | | |
| #140 | 57.6 | | |
| #200 | 49.3 | | |

* (no specification provided)

**Soil Description**

Yellowish brown silty clayey Sand

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{85}$= 0.456 $D_{60}$= 0.116 $D_{50}$= 0.0773
$D_{30}$= $D_{15}$= $D_{10}$=
$C_u$= $C_c$=

**Classification**

USCS= SM AASHTO=

**Remarks**

F.M.=0.35

**Sample No.:** 5-8 **Source of Sample:** Grad. **Date:** 12-12-01
**Location:** **Elev./Depth:** 16 ft.

ENGEO INCORPORATED
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
MATERIALS TESTING

**Client:** Nunn Farms
**Project:** Vineyards South, Brentwood, CA
**Project No:** 4894.5.001.01

Figure C-6

*California State Certified Laboratory No.2153*

C E R C O
analytical, inc.

20 December, 2001

Job No.0111225
Cust. No.10169

*3942-A Valley Avenue*
*Pleasanton, CA 94566-4715*
*Tel: 925.462.2771*
*Fax: 925.462.2775*

Mr. Casey Lee Jones
ENGEO Inc.
2401 Crow Canyon Rd., Ste 200
San Ramon, CA 94583

Subject: Project No.: 4894.5.001.01
Project Name: Vineyard
Corrosivity Analysis – ASTM Test Methods

Dear Mr. Jones:

Pursuant to your request, CERCO Analytical has analyzed the soil samples submitted on November 21, 2001. Based on the analytical results, a brief corrosivity evaluation is enclosed for your consideration.

Based upon the resistivity measurements, both samples are classified as "corrosive". All buried iron, steel, cast iron, ductile iron, galvanized steel and dielectric coated steel or iron should be properly protected against corrosion depending upon the critical nature of the structure. All buried metallic pressure piping such as ductile iron firewater pipelines should be protected against corrosion.

The chloride ion concentrations reflect none detected with a detection limit of 15 mg/kg.

The sulfate ion concentrations range from none detected to 15 mg/kg and are determined to be insufficient to damage reinforced concrete structures and cement mortar-coated steel at these locations.

The pH of both samples is 6.6, which does not present corrosion problems for buried iron, steel, mortar-coated steel and reinforced concrete structures.

The redox potentials range from 490 to 540-mV, which is indicative of aerobic soil conditions.

This corrosivity evaluation is based on general corrosion engineering standards and is non-specific in nature. For specific long-term corrosion control design recommendations or consultation, please call *JDH Corrosion Consultants, Inc. at (925) 927-6630.*

We appreciate the opportunity of working with you on this project. If you have any questions, or if you require further information, please do not hesitate to contact us.

Very truly yours,
**CERCO ANALYTICAL, INC.**

J. Darby Howard, Jr., P.E.
President

JDH/jdl
Enclosure

# CERCO Analytical, Inc.

3942-A Valley Avenue, Pleasanton, CA 94566-4715 (925) 462-2771 Fax (925) 462-2775

## *FINAL RESULTS*

Client: ENGEO Incorporated
Client's Project No.: 4894.5.001.01
Client's Project Name: Vineyard
Authorization: Signed Chain of Custody

Date Sampled: 10/31 & 11/01/01
Date Received: 21-Nov-2001
Date of Report: 19-Dec-2001
Matrix: Soil

| Job/Sample No. | Sample I.D. | Redox (mV) | pH | Conductivity (umhos/cm)* | Resistivity (100% Saturation) (ohms-cm) | Sulfide (mg/kg)* | Chloride (mg/kg)* | Sulfate (mg/kg)* |
|---|---|---|---|---|---|---|---|---|
| 0111225-001 | 3-1 | 490 | 6.6 | - | 2,000 | - | N.D. | N.D. |
| 0111225-002 | 7-1 | 540 | 6.6 | - | 1,900 | - | N.D. | 15 |
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| Method: | ASTM D1498 | ASTM D4972 | ASTM D1125M | ASTM G57 | ASTM D4658M | ASTM D4327 | ASTM D4327 |
|---|---|---|---|---|---|---|---|
| Detection Limit: | - | - | 10 | - | 50 | 15 | 15 |
| Date Analyzed: | 12-Dec-2001 | 13-Dec-2001 | - | 14-Dec-2001 | - | 13-Dec-2001 | 13-Dec-2001 |

Cheryl McMillen
Laboratory Director

* Results Reported on "As Received" Basis

N.D. - None Detected

**Quality Control Summary - All laboratory quality control parameters were found to be within established limits**

# Appendix E



# GINOCHIO PROPERTY
## CONTRA COSTA COUNTY, CALIFORNIA

# PHASE I ENVIRONMENTAL SITE ASSESSMENT

SUBMITTED TO
Ms. Lisa Borba
GBN Partners LLC
3820 Blackhawk Drive
Danville, CA 94506

PREPARED BY
ENGEO Incorporated

January 24, 2019
Revised February 7, 2019

PROJECT NO.
04894.002.000

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ENGEO
Expect Excellence

Project No.
**04894.002.000**

January 24, 2019
Revised February 7, 2019

Ms. Lisa Borba
GBN Partners LLC
3820 Blackhawk Drive
Danville, CA 94506

Subject: Ginochio Property
Balfour Road and Deer Valley Road
Contra Costa County, California

## PHASE I ENVIRONMENTAL SITE ASSESSMENT

Dear Ms. Borba:

ENGEO is pleased to present our phase I environmental site assessment of the subject property (Property), located in Contra Costa County, California. The attached report includes a description of the site assessment activities, along with ENGEO's findings, opinions, and conclusions regarding the Property.

ENGEO has the specific qualifications based on education, training, and experience to assess the nature, history, and setting of the Property, and has developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312 and the American Standard Testing Method (ASTM) Practice E1527-13. We declare that, to the best of our professional knowledge and belief, the responsible charge for this study meets the definition of Environmental Professional as defined in Section 312.10 of 40 CFR Part 312 and ASTM E1527-13.

We are pleased to be of service to you on this project. If you have any questions concerning the contents of our report, please contact us.

Sincerely,

ENGEO Incorporated

Ana Lua

Shawn Munger, CHG

al/sm/cjn

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# EXECUTIVE SUMMARY

ENGEO conducted a phase I environmental site assessment for the property located north of Balfour Road and east of Deer Valley Road in Contra Costa County, California (Property). The approximately 820-acre Property is identified as APN 057-060-008, 019-120-002, 019-120-007, and 019-120-008.

The Property is currently undeveloped except for two active gas wells in the northeast portion of the Property. Historically, the Property has been used for dry land farming, cattle grazing, and past oil production in the eastern portion of the Property, which has since been abandoned. Eight abandoned and two active oil/gas wells are located within the Property boundaries. A pipeline easement extends through the eastern portion of the Property and contains a 24" Chevron/Standard Pacific pipeline, an 18" Kinder Morgan pipeline, and a 26" abandoned PG&E natural gas pipeline. An electrical transmission line also trends through the eastern portion of the Property.

This assessment included a review of local, state, tribal, and federal environmental record sources, standard historical sources, aerial photographs, fire insurance maps and physical setting sources. A reconnaissance of the Property was conducted to review site use and current conditions to check for the storage, use, production or disposal of hazardous or potentially hazardous materials and interviews with persons knowledgeable about current and past site use.

The site reconnaissance and records review did not find documentation or physical evidence of soil or groundwater impairments associated with the use or past use of the Property. A review of regulatory databases maintained by county, state, tribal, and federal agencies found no documentation of hazardous materials violations or discharge on the Property and did not identify contaminated facilities within the appropriate American Society for Testing and Materials (ASTM) search distances that would reasonably be expected to impact the Property.

Based on the findings of this assessment, no Recognized Environmental Conditions (RECs), no historical RECs, and no controlled RECs were identified for the Property.

Based on the review of regulatory databases and site reconnaissance, we present information on features of potential environmental concern that were either contained in the databases or observed on the Property. These features were not considered to be RECs. We briefly discuss each feature below.

<u>Former and Existing Oil/Gas Wells</u>

Eight abandoned and two active oil/gas wells are located within the Property boundaries. The following is recommended to address the current and past oil/gas production activities:

- All abandoned oil pipelines within the areas of the project site planned for development should be removed.

- If indicators of apparent soil contamination (soil staining, odors, debris fill material, etc.) are encountered at the project site, specifically in the vicinity of abandoned oil/gas wells, or during removal of abandoned oil pipelines, the impacted area should be isolated from surrounding, non-impacted areas. The project environmental professional shall obtain samples of the potentially impacted soil for analysis of the contaminants of concern and comparison with

applicable regulatory residential screening levels. If soil contaminant concentrations exceed the applicable regulatory residential screening levels, the impacted soil shall be excavated and disposed of offsite at a licensed landfill facility.

- Prior to final map approval, the project applicant shall submit to the City of Brentwood Engineering Department, for review and approval, plans which show that future inhabited structures will not be located directly over the eight on-site abandoned oil/gas wells. The plans shall be completed in compliance with the DOGGR Construction Site Review Program, which includes guidelines and recommendations for setbacks and mitigation measures for venting systems.

- If grading is proposed proximate to the eight abandoned well locations, DOGGR should be consulted to determine if the wells will require modification in casing height. The specific location of the wells should be determined and surveyed in the field..

- Prior to development, the active gas production wells should be removed in accordance with State requirements. If the two currently active wells remain in operation at the time of site development, the required DOGGR setbacks should be implemented from the facilities.

ENGEO has performed a phase I environmental site assessment in general conformance with the scope and limitations of ASTM E1527-13 and the standards and practices of the All Appropriate Inquiry – Final Rule (40 Code of Federal Regulations Part 312). Any exceptions to, or deletions from, this practice are described in Section 5.1 of this report.

ENGEO recommends no further environmental studies at this time.

# 1.0 INTRODUCTION

## 1.1 SITE LOCATION AND DESCRIPTION

ENGEO conducted a phase I environmental site assessment for the Property located north of Balfour Road and east of Deer Valley Road in Contra Costa County, California (Figures 1 and 2). The approximately 820-acre Property is identified as APN 057-060-008, 019-120-002, 019-120-007, and 019-120-008 (Figure 3) and is primarily undeveloped land.

## 1.2 CURRENT USE OF PROPERTY AND ADJOINING PROPERTIES

The Property is currently undeveloped except for two active gas wells in the northeast portion of the Property. Historically, the Property has been used for dry land farming, cattle grazing, and past oil production in the eastern portion of the Property, which has since been abandoned. Eight abandoned and two active oil/gas wells are located within the Property boundaries. A pipeline easement extends through the eastern portion of the Property and contains a 24" Chevron/Standard Pacific pipeline, an 18" Kinder Morgan pipeline, and a 26" abandoned PG&E natural gas pipeline. An electrical transmission line also trends through the eastern portion of the Property.

Adjoining properties land use include the Shadow Lake residential development to the east, dryland farming to the north, Roddy Ranch to the west, and Heritage High School to the south.

## 1.3 SITE AND VICINITY CHARACTERISTICS

According to published topographic maps, the Property consists of varied topography and ranges in elevation from approximately 120 feet above mean sea level (msl) to approximately 360 feet above msl. Review of the Dibblee Geologic Map (2006) found that the Property is underlain by surficial sediments, the Kreyenhagen formation, Domengine sandstone, and the Meganos formation; specifically, the following:

- Qa – alluvial pebble gravel, sand and clay of valley areas
- Tkm – Markley Sandstone Member, light gray to tan, semi friable, bedded, fine to medium grained, arkosic
- Tkn – Nortonville Shale Member, clay shale or claystone, gray micaceous, bedded, argillaceous
- Tds – sandstone, light gray to tan, medium grained, semi friable, arkosic
- Tmge – greenish-gray to light gray, biotite-rich siltstone and silty mudstone

Geocheck – Physical Setting Source Summary of the Environmental Resources Data report (Appendix A) indicated no Federal United States Geological Survey (USGS) wells, Federal FRDS Public Water Supply System information, or State Database wells are located within 1 mile of the Property. Geotechnical studies performed by ENGEO at a site located approximately 0.5 miles north of the Property indicated that groundwater was at a depth of about 25 feet below existing grade.

We reviewed the Department of Water Resources On-line Water Data Library for depth to water in the vicinity of the Property. The website did not identify any wells within 1 mile of the Property.

The site-specific depth to groundwater and direction of groundwater flow was not determined as part of this assessment. Fluctuations in groundwater levels may occur seasonally and over a period of years due to variations in precipitation, temperature, irrigation and other factors.

We reviewed the Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR) website and map database to determine if any historic oil and/or gas wells were located within the Property. Ten wells were mapped within the Property, including the two on-site active gas production wells.

## 1.4 PURPOSE OF PHASE I ENVIRONMENTAL SITE ASSESSMENT

This assessment was performed at the request of GBN Partners LLC for the purpose of environmental due diligence during property acquisition. The objective of this phase I environmental site assessment is to identify Recognized Environmental Conditions (RECs) associated with the Property. As defined in the ASTM Standard Practice E1527-13, an REC is "the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment."

## 1.5 DETAILED SCOPE OF SERVICES

The scope of services performed included the following:

- A review of previous environmental reports prepared for the Property.
- A review of publicly available and practically reviewable standard local, state, tribal, and federal environmental record sources.
- A review of publicly available and practically reviewable standard historical sources, aerial photographs, fire insurance maps and physical setting sources.
- A reconnaissance of the Property to review site use and current conditions. The reconnaissance was conducted to check for the storage, use, production or disposal of hazardous or potentially hazardous materials.
- Interviews with owners/occupants and public sector officials.
- Preparation of this report with our findings, opinions, and conclusions.

## 1.6 LIMITATIONS AND EXCEPTIONS OF ASSESSMENT

The professional staff at ENGEO strives to perform its services in a proper and professional manner with reasonable care and competence but is not infallible. The recommendations and conclusions presented in this report were based on the findings of our study, which were developed solely from the contracted services. The findings of the report are based in part on contracted database research, out-of-house reports and personal communications. The opinions formed by ENGEO are based on the assumed accuracy of the relied upon data in conjunction with our relevant professional experience related to such data interpretation. ENGEO assumes no liability for the validity of the materials relied upon in the preparation of this report.

This document must not be subject to unauthorized reuse; that is, reuse without written authorization of ENGEO. Such authorization is essential because it requires ENGEO to evaluate the document's applicability given new circumstances, not the least of which is passage of time. The findings from a phase I environmental site assessment are valid for one year after completion of the report. Updates of portions of the assessment may be necessary after a period of 180 days after completion.

This phase I environmental site assessment is not intended to represent a complete soil or groundwater characterization, nor define the depth or extent of soil or groundwater contamination. It is intended to provide an evaluation of potential environmental concerns associated with the use of the Property. A more extensive assessment that would include a subsurface exploration with laboratory testing of soil and groundwater samples could provide more definitive information concerning site-specific conditions. If additional assessment activities are considered for the Property and if other entities are retained to provide such services, ENGEO cannot be held responsible for any and all claims arising from or resulting from the performance of such services by other persons or entities. ENGEO can also not be held responsible from any and all claims arising or resulting from clarifications, adjustments, modifications, discrepancies or other changes necessary to reflect changed field or other conditions.

### 1.7 SPECIAL TERMS AND CONDITIONS

ENGEO has prepared this report for the exclusive use of our client, GBN Partners LLC. It is recognized and agreed that ENGEO has assumed responsibility only for undertaking the study for the client. The responsibility for disclosures or reports to a third party and for remedial or mitigative action shall be solely that of the Client.

Laboratory testing of soil or groundwater samples was not within the scope of the contracted services. The assessment did not include an asbestos survey, an evaluation of lead-based paint, an inspection of light ballasts for polychlorinated biphenyls (PCBs), a radon evaluation, or a mold survey.

This report is based upon field and other conditions discovered at the time of preparation of ENGEO's assessment. Visual observations referenced in this report are intended only to represent conditions at the time of the reconnaissance. ENGEO would not be aware of site contamination, such as dumping and/or accidental spillage, that occurred subsequent to the reconnaissance conducted by ENGEO personnel.

## 2.0 RECORDS REVIEW

### 2.1 PROPERTY RECORDS

#### 2.1.1 Title Report/Ownership

The Title Report lists recorded land title detail, ownership fees, leases, land contracts, easements, liens, deficiencies, and other encumbrances attached to or recorded against a subject property. Laws and regulations pertaining to land trusts vary from state to state and the detail of information presented in a Title Report can vary greatly by jurisdiction. As a result, ENGEO utilizes a Title Report, when provided to us, as a supplement to other historical record sources.

A Preliminary Title Report for the Property, prepared by Old Republic Title Company and dated January 18, 2019, was provided for our review. The Property title is vested in Peter Eugene Ginochio, Joanne M. Baker, John R. Ginochio, III, John R. Ginochio IV, Ronald S. Ginochio, Sally N. Ginochio, Angelina Ginochio, Stephen M. Ginochio, Antonette Ginochio, Anna M. Ginochio, Edward Ginochio, Paul L. Ginochio, Patty Ginochio, Gina Ginochio-Robichaud, and James M. Ginochio.

Notifications of easement/right-of ways for PG&E, Shell Oil, and Southern Pacific Pipelines are listed in the report. In addition, there are several notifications of oil/gas & mineral right deeds in the report.

No references to environmental liens, deed restrictions or other potential environmental issues were noted. This report is included in Appendix F.

### 2.1.2 Environmental Liens and Activity Use Limitations

The referenced Preliminary Title Report did not include references to environmental liens, or activity use restrictions.

## 2.2 PREVIOUS ENVIRONMENTAL REPORTS

ENGEO Incorporated, Phase One Environmental Site Assessment, Ginochio Property, Brentwood, California, Project No. 4894.3.001.01, August 11, 2000.

ENGEO performed a Phase I ESA for the Property and adjacent parcels north and west of the Property. The site reconnaissance and records research did not find documentation or physical evidence of soil or groundwater impairments associated with the use of the properties. A review of regulatory databases maintained by county, state, and federal agencies found no record of hazardous materials violations or discharge on the properties. A review of aerial photographs and available historical records found the parcels have consisted primarily of open space, with some gas well production since at least 1957.

ENGEO documented three pipelines that share an easement that traverses the Property from the southeast at Balfour Road to the northwestern portion of the Property along Deer Valley Road. The easement contains three pipelines maintained by Chevron (crude oil), Kinder Morgan (multi-purpose/refined product), and Pacific Gas and Electric (natural gas). In addition, one Shell petroleum pipeline conveying crude oil is located on the parcel north of the Property. Although there is no record of release, ENGEO indicated it was conceivable that subsurface impacts may have occurred associated with the Kinder Morgan (multi-purpose) pipeline.

The Conservation Department, Division of Oil and Gas (DOGGR), identified oil/gas wells located within the vicinity of the site. The identified wells included eight wells on the Property, as shown in Figure 2, and an additional nine wells located on adjacent parcels to the north and west. The wells were located on the site from 1962 through 1987 and have since been plugged and abandoned. ENGEO indicated there could be a potential for subsurface impacts associated with well improvements from condensate tanks, compressor units and drilling sumps.

Based on the findings of the assessment, ENGEO provided the following recommendations for the study area.

- *ENGEO recommended that a subsurface assessment be undertaken to address potential impacts from the two active pipelines.*

- *ENGEO recommended the exact location of the individual wells and their associated improvements be determined. A limited subsurface assessment can be undertaken to determine if the former gas well operations have impacted site soil and/or ground water. ENGEO also recommends the depth of grout seal for each well is determined.*

ENGEO Incorporated, Soil Gas Survey (Draft), Ginochio Property, Brentwood, California, Project No. 4894.3.001.02, March 15, 2001.

ENGEO performed a soil gas survey of approximately 2,300 feet of an underground petroleum pipeline alignment extending across the Property. The scope of ENGEO's services included the following:

- The placement and retrieval of 30 passive soil-gas collectors along the pipeline alignment.
- Laboratory analysis of the soil-gas collectors for petroleum hydrocarbons.
- Preparation of a report with findings and conclusions.

For the purposes of the survey, Gore-Sorber Screening Modules were used to determine if potential subsurface impairments may have occurred in association with the pipeline.

The sampling procedure consisted of the placement of 60 soil screening modules within ±24-inch-deep boreholes, 2 inches in diameter. The boreholes were placed at ±75-foot intervals along the two pipeline sections. The Gore-Sorber Screening Modules use 40 milligrams (mg) of either carbonaceous or polymeric resins that are encapsulated in a 1-foot length, vapor permeable, sorbant container. The sorbant container is constructed of inert, hydrophobic, rnicroporous Gore-Tex expanded polytetrafluoroethylene. Following an 18-day exposure period, 51 of the 60 modules were collected and returned to the Gore-Sorber laboratory for ion chromatogram analysis. The remaining modules were damaged and deemed unrecoverable.

Trace levels of petroleum hydrocarbons (TPH) were reported for the ion chromatogram analysis of the soil gas modules. The reported concentrations were considered background concentration levels. Based on the findings of the soil gas survey, ENGEO found no evidence of a significant release along the petroleum pipeline alignments.

## 2.3 HISTORICAL RECORD SOURCES

The purpose of the historical record review is to develop a history of the previous uses or occupancies of the Property and surrounding area in order to identify those uses or occupancies that are likely to have led to recognized environmental conditions on the Property.

### 2.3.1 Historical Topographic Maps

Historical USGS topographic maps were reviewed to determine if discernible changes in topography or improvements pertaining to the Property had been recorded. The following maps were provided to us through an EDR Historical Topographic Map Report, presented in Appendix C.

**TABLE 2.3.1-1: Historical Topographic Maps**

| QUAD | YEAR | DESCRIPTION |
|---|---|---|
| Mt. Diablo | 1896, 1898 | Property: The Property ranges in elevation from 250 to 390 feet above msl. There are several unimproved and light duty roads. There are two structures in the western area of the Property near Deer Valley Road. Sand Creek crosses the northern portion of the Property. |
| Byron | 1912, 1916 | |
| Brentwood, Lone Tree Valley | 1914, 1916 | Adjoining: There are some structures, unimproved and light duty roads on adjacent properties. Deer Creek is south of the Property. |
| Byron, Mt. Diablo | 1943 | Property: An electrical transmission line is shown extending southeast to northwest through the eastern portion of the Property. There are three structures and land subject to inundation near the northeast corner of the Property, as well as an intermittent pond east of Deer Valley Road. There are three structures on the parcels west of Deer Valley Road. The elevation ranges from approximately 120 to 360 feet above msl. |
| Antioch South, Brentwood | 1953, 1954, 1968 | |
| Antioch South | 1973 | |
| Brentwood, Antioch | 1978, 1980 | |
| Antioch South, Brentwood | 2012 | Adjoining: Several major roads including Deer Valley Road and Balfour Road are shown in adjacent parcels, as well as intermittent ponds. |

### 2.3.2 Aerial Photographs

The following aerial photographs, provided by EDR, were reviewed for information regarding past conditions and land use at the Property and in the immediate vicinity. These photographs are presented in Appendix D.

**TABLE 2.3.2-1: Aerial Photographs**

| YEAR | DESCRIPTION |
|---|---|
| 1939<br>1949<br>1950<br>1958/1959 | Property: The Property is primarily undeveloped land. The pipeline easement and transmission lines are evident in the eastern parcels, extending southeast to northwest.<br><br>Adjoining: The surrounding land is mostly undeveloped land, with an orchard to the south of the Property and some small residential structures on the surrounding parcels. There are two structures west of Deer Valley Road. |
| 1963<br>1966<br>1979 | Property: There is a road near the northeast corner leading to a paved area (likely gas well locations).<br><br>Adjoining: The adjoining properties appear unchanged. One of the structures west of Deer Valley Road has been removed. |
| 1982 | Property: There are two ponds on the subject parcels east of Deer Valley Road.<br><br>Adjoining: The adjoining properties appear unchanged. |
| 1993<br>1998 | Property: The ponds in the eastern parcels have dried.<br><br>Adjoining: The adjoining properties appear unchanged. |

| YEAR | DESCRIPTION |
|---|---|
| 2006<br>2009<br>2012<br>2016 | Property: The Property appears unchanged.<br><br>Adjoining: A residential development has been constructed to the east of the Property and Heritage High School now exists to the south of the Property. |

### 2.3.3 Fire Insurance Maps

EDR prepared a Sanborn Fire insurance map search for the Property and surrounding properties. EDR reported that no maps were available for the Property and surrounding properties.

### 2.3.4 City Directory

City Directories, published since the 18th century for major towns and cities, lists the name of the resident or business associated with each address. A city directory search conducted by EDR is located in Appendix E. The city directory search found residences and business that are located within a mile of the Property. There are no documented listings for the Property.

## 2.4 ENVIRONMENTAL RECORD SOURCES

EDR performed a search of federal, tribal, state, and local databases regarding the Property and nearby properties. Details regarding the databases searched by EDR are provided in Appendix A. A list of the facilities documented by EDR within the approximate minimum search distance of the Property is provided below.

### 2.4.1 Standard Environmental Records

#### 2.4.1.1 Subject Property

The Property is not listed on the Standard Environmental Record source databases.

#### 2.4.1.2 Other Properties

The following database includes facilities listed within the appropriate ASTM search distances of the Property on Standard Environmental Records sources.

**TABLE 2.4.1.2-1**

| FACILITY | STREET | DATABASE(S) |
|---|---|---|
| Loma Vista Elementary School | 2110 San Jose Avenue | ENVIROSTOR |

### 2.4.2 Additional Environmental Records

#### 2.4.2.1 Subject Property

The Property is not listed on the Additional Environmental Record source databases.

#### 2.4.2.2 Other Properties

The following databases include facilities listed within the appropriate ASTM search distances of the Property on the Additional Environmental Record sources.

**TABLE 2.4.2.2-1**

| FACILITY | STREET | DATABASE(S) |
|---|---|---|
| Balfour Road Culvert | | CIWQS, CERS |
| Mountain Mike's Pizza | 380 Country Club Drive | CONTRA COSTA CO. SITE LIST |
| Occidental Petroleum (2 listings) | | UIC |

Based on the distances to the identified database sites, regional topographic gradient, and the EDR findings, it is unlikely that the above-stated database sites pose an environmental risk to the Property. Properties that are on the "Orphan Summary" list appear to be located beyond the ASTM recommended radius search criteria.

## 2.5 REGULATORY AGENCY FILES AND RECORDS

The following agencies were contacted pertaining to possible past development and/or activity at the Property.

**TABLE 2.5-1: Regulatory Agency Records**

| NAME OF AGENCY | RECORDS REVIEWED |
|---|---|
| Contra Costa County Health Services Hazardous Materials Program | No pertinent environmental records were found. |
| Contra Costa County Fire Protection District | No pertinent environmental records were found. |
| Contra Costa County Assessor's Office | No pertinent environmental records were found. |
| California State Water Resources Control Board | The Geotracker website listed the Shell Yard site, which is located approximately ½ mile northeast of the Property. The 10-acre lot was formerly used as an office and maintenance yard for pipeline operations, with secondary use as a support area for oil and gas production operations. Between 1997 and 2009, OXY USA identified petroleum hydrocarbon contaminated at the site. Contaminated soil was removed using excavation and biotreatment. After remedial action, a No Further Action letter was issued February 17, 2011. |
| Department of Toxic Substances Control | The Envirostor website listed the Loma Vista Elementary Classroom Addition site. The school investigation required no action. |

## 2.6 DIVISION OF OIL, GAS AND GEOTHERMAL RESOURCES (DOGGR)

Records reviewed on the DOGGR web site provided the following information regarding the eight abandoned and two active oil/gas wells:

**TABLE 2.6-1: Regulatory Agency Records**

| WELL ID# | STATUS/TYPE | DEPTH (FT) | DATE DRILLED | DATE ABANDONED | GROUT SEAL (FT) |
|---|---|---|---|---|---|
| Ginochio 1-16 | Abandoned Oil/Gas | 4535 | 1963 | 1992 | 3476 |
| Ginochio 2-16 | Abandoned Injection | 4746 | 1962 | 1993 | 3989 |
| Ginochio 21-16 | Abandoned Dry Hole | 4780 | 1963 | 1963 | ~1085 |

| WELL ID# | STATUS/TYPE | DEPTH (FT) | DATE DRILLED | DATE ABANDONED | GROUT SEAL (FT) |
|---|---|---|---|---|---|
| Ginochio 22-16 | Abandoned Oil/Gas | 4500 | 1963 | 1991 | 4235 |
| Ginochio 85-17 | Abandoned Dry Hole | 4483 | 1963 | 1963 | 409 |
| Ginochio 1 | Abandoned Oil/Gas | 4300 | Unknown* | 1990 | 436 |
| Ginochio 2 | Abandoned Oil/Gas | 4300 | Unknown* | 1993 | 3944 |
| Ginochio 3 | Abandoned Dry Hole | 4553 | 2005 | 2005 | 370 |
| Venturini – Ginochio 3 | Active Oil/Gas | ~4149 | 2018 | N/A | Unknown** |
| Venturini – Ginochio 4 | Active Oil/Gas | Unknown | 2018 | N/A | Unknown** |

* Rework – 1987
** Data not posted to DOGGR Database

# 3.0 SITE RECONNAISSANCE

## 3.1 METHODOLOGY

ENGEO conducted a reconnaissance of the Property on December 17, 2018. The reconnaissance was performed by Ana Lua, a Staff Engineer of ENGEO. The Property was viewed for hazardous materials storage, superficial staining or discoloration, debris, stressed vegetation, or other conditions that may be indicative of potential sources of soil or groundwater contamination. The Property was also checked for evidence of fill/ventilation pipes, ground subsidence, or other evidence of existing or preexisting underground storage tanks. Photographs taken during the site reconnaissance are presented in Figure 4.

There were several locked gates and fences surrounding the Property.

## 3.2 GENERAL SITE SETTING

The Property is currently undeveloped except for one active natural gas well in the northeast portion of the Property. Historically, the Property has been used for dry land farming, cattle grazing, and gas production in the eastern portion of the Property, which has since been abandoned. A pipeline easement extends through the eastern portion of the Property and contains a 24” Chevron/Standard Pacific pipeline, an 18” Kinder Morgan pipeline, and a 26” abandoned PG&E natural gas pipeline. An electrical transmission line also runs through the eastern portion of the Property.

## 3.3 SITE OBSERVATIONS

The following table summarizes our observations during the reconnaissance:

**TABLE 3.3-1: Site Observations**

| FEATURE TYPE | OBSERVATIONS |
|---|---|
| Structures | A small structure was located east of Deer Valley Road. |
| Hazardous Substances and Petroleum Products/Containers | There are existing Chevron/Standard Pacific and Kinder Morgan oil pipelines that cross the Property. |
| Storage Tanks (underground and above-ground) | An above ground storage tank was located near the well (likely condensate). |

| FEATURE TYPE | OBSERVATIONS |
|---|---|
| Odors | None |
| Pools of Potentially Hazardous Liquid | None |
| Drums | None |
| Polychlorinated Biphenyls (PCBs) | None |
| Pits, Ponds, and Lagoons | None |
| Stained Soil/Pavement | None |
| Stressed Vegetation | None |
| Solid Waste/Debris | None |
| Stockpiles/Fill Material | None |
| Wastewater | None |
| Wells | There is two active gas production wells in the northern portion of the Property, east of Deer Valley Road. The approximate locations of the former wells are shown in Figure 2. |
| Septic Systems | None |

### 3.4 ASBESTOS-CONTAINING MATERIALS AND LEAD-BASED PAINT

An asbestos and lead-based paint survey was not conducted as part of this assessment. Given the age of the existing structures, it is conceivable that asbestos-containing materials and lead-based paint materials may exist within the structures.

### 3.5 INDOOR AIR QUALITY

An evaluation of indoor air quality, mold, or radon was not included as part of the contracted scope of services. The California Department of Health Services has conducted studies of radon risks throughout the state, sorted by zip code. Results of the studies indicate that five tests were conducted within the Property zip code, with no tests exceeding the current EPA action level of 4~picocuries per liter {pCi/L}[1]).

In accordance with ASTM E2600-15 (Tier 1) (*Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions*); there are no potential petroleum hydrocarbon sources for vapor intrusion within 1/10 mile of the Property or volatile organic compound (VOCs) sources within 1/3 mile of the Property. The existing/former petroleum pipelines pose a potential vapor intrusion risk.

## 4.0 INTERVIEWS

Ms. Lisa Borba of GBN Partners LLC and Ms. Anna Ginochio completed an environmental site assessment questionnaire pertaining to applicable past and present uses and physical characteristics of the Property and surrounding properties. In the questionnaire, Ms. Borba and Ms. Ginochio identified the active gas production well on the site. They did not identify other

[1] California Department of Public Health – Radon Program– (https://www.cdph.ca.gov/Programs/CEH/DRSEM/CDPH%20Document%20Library/EMB/Radon/Radon%20Test%20Results.pdf).

potential environmentally related issues with the Property. The questionnaire is presented in its entirety in Appendix G.

# 5.0 EVALUATION

## 5.1 OPINIONS AND DATA GAPS

It is our opinion that the findings of this study are based on a sufficient level of information obtained during our contracted scope of services to render a conclusion as to whether additional appropriate investigation is required to identify the presence or likely presence of a REC.

## 5.2 FINDINGS AND CONCLUSIONS

The study included a review of local, state and federal environmental record sources, standard historical sources, aerial photographs, fire insurance maps and physical setting sources; a reconnaissance of the Property to review site use and current conditions to check for the storage, use, production or disposal of hazardous or potentially hazardous materials; and interview with persons knowledgeable about current and past site use.

The site reconnaissance and records review did not find documentation or physical evidence of soil or groundwater impairments associated with the use of the Property. A review of regulatory databases maintained by county, state, and federal agencies found no documentation of hazardous materials violations or discharge on the Property. A review of regulatory agency records and available databases did not identify contaminated facilities within the appropriate ASTM search distances that would be expected to impact the Property.

Based on the findings of this assessment, no Recognized Environmental Conditions (RECs), no historical RECs, and no controlled RECs were identified for the Property.

Based on the review of regulatory databases and site reconnaissance, we present information on features of potential environmental concern that were either contained in the databases or observed on the Property. These features were not considered to be RECs. We briefly discuss each feature below.

Former and Existing Oil/Gas Wells

Eight abandoned and two active oil/gas wells are located within the Property boundaries. The following is recommended to address the current and past oil/gas production activities:

- All abandoned oil pipelines within the areas of the project site planned for development should be removed.

- If indicators of apparent soil contamination (soil staining, odors, debris fill material, etc.) are encountered at the project site, specifically in the vicinity of abandoned oil/gas wells, or during removal of abandoned oil pipelines, the impacted area should be isolated from surrounding, non-impacted areas. The project environmental professional shall obtain samples of the potentially impacted soil for analysis of the contaminants of concern and comparison with applicable regulatory residential screening levels. If soil contaminant concentrations exceed the applicable regulatory residential screening levels, the impacted soil shall be excavated and disposed of offsite at a licensed landfill facility.

- Prior to final map approval, the project applicant shall submit to the City of Brentwood Engineering Department, for review and approval, plans which show that future inhabited structures will not be located directly over the eight on-site abandoned oil/gas wells. The plans shall be completed in compliance with the DOGGR Construction Site Review Program, which includes guidelines and recommendations for setbacks and mitigation measures for venting systems.

- If grading is proposed proximate to the eight abandoned well locations, DOGGR should be consulted to determine if the wells will require modification in casing height. The specific location of the wells should be determined and surveyed in the field.

- Prior to development, the active gas production well should be removed in accordance with State requirements. If the two currently active wells remain in operation at the time of site development, the required DOGGR setbacks should be implemented from the facilities.

ENGEO has performed a phase I environmental site assessment in general conformance with the scope and limitations of ASTM E1527-13 and the standards and practices of the All Appropriate Inquiry – Final Rule (40 Code of Federal Regulations Part 312). Any exceptions to, or deletions from, this practice are described in Section 5.1 of this report.

ENGEO recommends no further environmental studies at this time.

# SELECTED REFERENCES

Google Maps (http://maps.google.com)

California Department of Water Resources (http://www.water.ca.gov/waterdatalibrary/)

California Department of Conservation (DOGGR) (http://maps.conservation.ca.gov/doms/doms-app.html)

California Department of Public Health – Radon Program– (https://www.cdph.ca.gov/Programs/CEH/DRSEM/CDPH%20Document%20Library/EMB/Radon/Radon%20Test%20Results.pdf).

Dibblee, T.W.; 2006, Geologic Map of the Antioch South and Brentwood Quadrangles, Contra Costa County, California; Dibblee Geology Center Map #DF-193; 1:240,000.

Old Republic Title Company; Preliminary Title Report, APN's 057-060-008, & 019-120-002, 007, & 008, Antioch, CA; January 18, 2019.



## FIGURES


**FIGURE 1: Vicinity Map**
**FIGURE 2: Site Plan**
**FIGURE 3: Assessor's Parcel Number Map**
**FIGURE 4: Site Photographs**




BASEMAP SOURCE: ESRI MAPPING SERVICE

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Expect Excellence

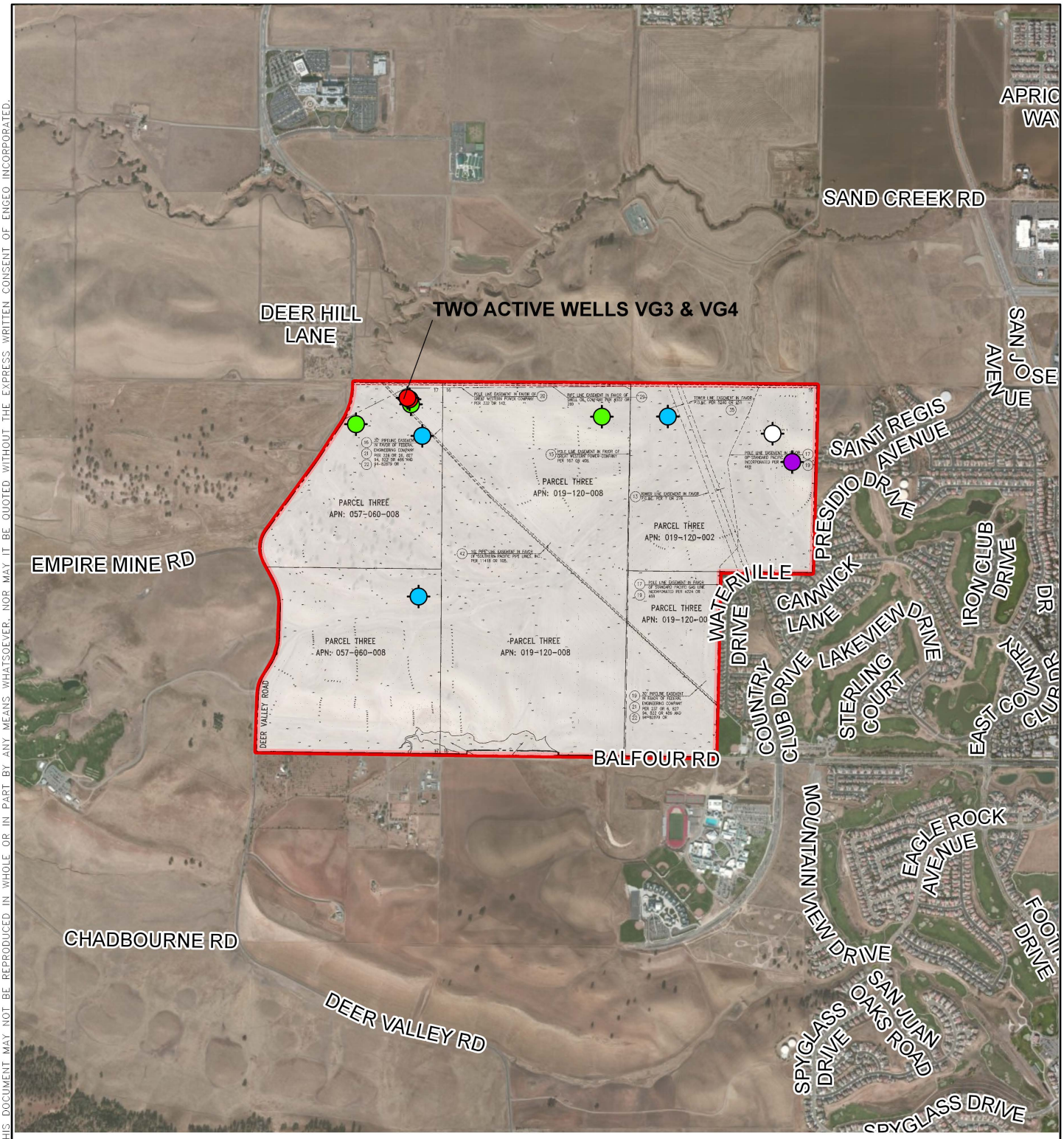
# VICINITY MAP

GINOCHIO PROPERTY
OAKLEY, CALIFORNIA

| | |
|---|---|
| PROJECT NO. : 04894.002.000 | FIGURE NO. 1 |
| SCALE: AS SHOWN | |
| DRAWN BY: QRL | CHECKED BY: SPM |

PATH: G:\DRAFTING\DRAFTING2_DWG\4894\002\GIS\GINOCHIO PROPERTY.APRX
USER: QLIANG

ORIGINAL FIGURE PRINTED IN COLOR




N

0 1,000 2,000

FEET

## EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

- PROJECT SITE
- OIL AND GAS
- DRY GAS
- OIL AND GAS - DRY HOLE
- ACTIVE OIL AND GAS
- WATER DISPOSAL
- WATER DISPOSAL/OIL AND GAS

BASEMAP SOURCE: ESRI MAPPING SERVICE, CARLSON, BARBEE & GIBSON, INC

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# SITE PLAN

GINOCHIO PROPERTY

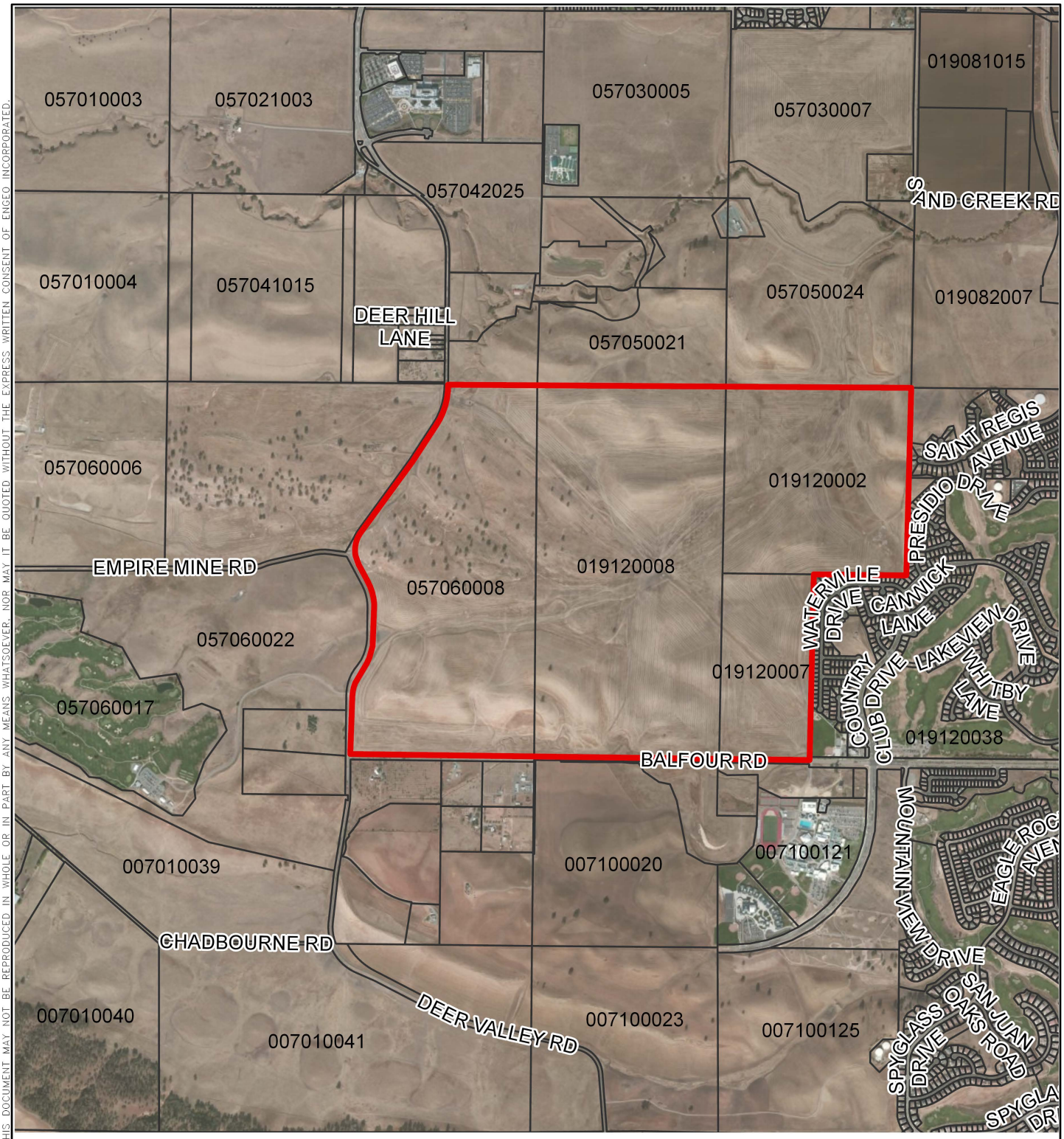
CONTRA COSTA COUNTY, CALIFORNIA

| | | |
|---|---|---|
| PROJECT NO. : 04894.002.000 | | FIGURE NO. 2 |
| SCALE: AS SHOWN | | |
| DRAWN BY: QRL | CHECKED BY: SPM | |

PATH: G:\DRAFTING\DRAFTING2_DWG\4894\002\GIS\GINOCHIO PROPERTY.APRX

ORIGINAL FIGURE PRINTED IN COLOR

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## EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

- PROJECT SITE
- PARCEL BOUNDARY

BASEMAP SOURCE: ESRI MAPPING SERVICE

ENGEO Expect Excellence

# ASSESSOR'S PARCEL MAP

GINOCHIO PROPERTY

OAKLEY, CALIFORNIA

| | |
|---|---|
| PROJECT NO. : | 04894.002.000 |
| SCALE: | AS SHOWN |
| DRAWN BY: | QRL |
| CHECKED BY: | SPM |

FIGURE NO. 3

PATH: G:\DRAFTING\DRAFTING2_DWG\4894\002\GIS\GINOCHIO PROPERTY.APRX

ORIGINAL FIGURE PRINTED IN COLOR

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GENERAL SITE CONDITIONS NEAR CENTER OF PROPERTY, EAST OF DEER VALLEY ROAD




GRAZING AREA AND PEN AT NORTHERN EDGE, WEST OF DEER VALLEY ROAD




NORTHEAST OF INTERSECTION OF BALFOUR ROAD AND DEER VALLEY ROAD




OIL EXTRACTION AT NORTHERN EDGE, EAST OF DEER VALLEY ROAD

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SITE PHOTOGRAPHS
GINOCHIO PROPERTY
OAKLEY, CALIFORNIA

PROJECT NO. : 04894.002.000
SCALE: NO SCALE
DRAWN BY: QRL CHECKED BY: SPM

FIGURE NO. 4

PATH: G:\DRAFTING\DRAFTING2_DWG\4894\002\GIS\GINOCHIO PROPERTY.APRX
USER: QLIANG

ORIGINAL FIGURE PRINTED IN COLOR



# APPENDIX A

## ENVIRONMENTAL DATA RESOURCES, INC.

## Radius Map Report

**Ginochio - Eastern Parcels**
Balfour Road
Brentwood, CA 94513

Inquiry Number: 05498334.11r
November 29, 2018

# The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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| Detail Map | 3 |
| Map Findings Summary | 4 |
| Map Findings | 8 |
| Orphan Summary | 12 |
| Government Records Searched/Data Currency Tracking | GR-1 |

**GEOCHECK ADDENDUM**

| | |
|---|---|
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| Physical Setting Source Map | A-11 |
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| Physical Setting Source Records Searched | PSGR-1 |


***Thank you for your business.***
Please contact EDR at 1-800-352-0050
with any questions or comments.


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# EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

## TARGET PROPERTY INFORMATION

### ADDRESS

BALFOUR ROAD
BRENTWOOD, CA 94513

### COORDINATES

| | |
|---|---|
| Latitude (North): | 37.9298860 - 37° 55' 47.58'' |
| Longitude (West): | 121.7671000 - 121° 46' 1.56'' |
| Universal Tranverse Mercator: | Zone 10 |
| UTM X (Meters): | 608353.1 |
| UTM Y (Meters): | 4198547.0 |
| Elevation: | 221 ft. above sea level |

### USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

| | |
|---|---|
| Target Property Map: | 5640044 ANTIOCH SOUTH, CA |
| Version Date: | 2012 |
| East Map: | 5640376 BRENTWOOD, CA |
| Version Date: | 2012 |

### AERIAL PHOTOGRAPHY IN THIS REPORT

| | |
|---|---|
| Portions of Photo from: | 20140606 |
| Source: | USDA |

# MAPPED SITES SUMMARY

Target Property Address:
BALFOUR ROAD
BRENTWOOD, CA 94513

Click on Map ID to see full detail.

| MAP ID | SITE NAME | ADDRESS | DATABASE ACRONYMS | RELATIVE ELEVATION | DIST (ft. & mi.) DIRECTION |
|---|---|---|---|---|---|
| 1 | OCCIDENTAL PETROLEUM | | UIC | Lower | 1 ft. |
| 2 | OCCIDENTAL PETROLEUM | | UIC | Lower | 1 ft. |
| 3 | MOUNTAIN MIKE'S PIZZ | 380 COUNTRY CLUB DR | CONTRA COSTA CO. SITE LIST | Lower | 800, 0.152, ESE |
| 4 | LOMA VISTA ELEMENTAR | 2110 SAN JOSE AVENUE | ENVIROSTOR, SCH | Lower | 4237, 0.802, ENE |

# EXECUTIVE SUMMARY

## TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

## DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

## STANDARD ENVIRONMENTAL RECORDS

### *Federal NPL site list*

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

### *Federal Delisted NPL site list*

Delisted NPL ---------- National Priority List Deletions

### *Federal CERCLIS list*

FEDERAL FACILITY ---------- Federal Facility Site Information listing
SEMS ---------- Superfund Enterprise Management System

### *Federal CERCLIS NFRAP site list*

SEMS-ARCHIVE ---------- Superfund Enterprise Management System Archive

### *Federal RCRA CORRACTS facilities list*

CORRACTS ---------- Corrective Action Report

### *Federal RCRA non-CORRACTS TSD facilities list*

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

### *Federal RCRA generators list*

RCRA-LQG ---------- RCRA - Large Quantity Generators
RCRA-SQG ---------- RCRA - Small Quantity Generators
RCRA-CESQG ---------- RCRA - Conditionally Exempt Small Quantity Generator

### *Federal institutional controls / engineering controls registries*

LUCIS ---------- Land Use Control Information System
US ENG CONTROLS ---------- Engineering Controls Sites List

US INST CONTROL ..... Sites with Institutional Controls

***Federal ERNS list***

ERNS ..... Emergency Response Notification System

***State- and tribal - equivalent NPL***

RESPONSE ..... State Response Sites

***State and tribal landfill and/or solid waste disposal site lists***

SWF/LF ..... Solid Waste Information System

***State and tribal leaking storage tank lists***

LUST ..... Geotracker's Leaking Underground Fuel Tank Report
INDIAN LUST ..... Leaking Underground Storage Tanks on Indian Land
CPS-SLIC ..... Statewide SLIC Cases

***State and tribal registered storage tank lists***

FEMA UST ..... Underground Storage Tank Listing
UST ..... Active UST Facilities
AST ..... Aboveground Petroleum Storage Tank Facilities
INDIAN UST ..... Underground Storage Tanks on Indian Land

***State and tribal voluntary cleanup sites***

INDIAN VCP ..... Voluntary Cleanup Priority Listing
VCP ..... Voluntary Cleanup Program Properties

***State and tribal Brownfields sites***

BROWNFIELDS ..... Considered Brownfieds Sites Listing

**ADDITIONAL ENVIRONMENTAL RECORDS**

***Local Brownfield lists***

US BROWNFIELDS ..... A Listing of Brownfields Sites

***Local Lists of Landfill / Solid Waste Disposal Sites***

WMUDS/SWAT ..... Waste Management Unit Database
SWRCY ..... Recycler Database
HAULERS ..... Registered Waste Tire Haulers Listing
INDIAN ODI ..... Report on the Status of Open Dumps on Indian Lands
ODI ..... Open Dump Inventory
DEBRIS REGION 9 ..... Torres Martinez Reservation Illegal Dump Site Locations
IHS OPEN DUMPS ..... Open Dumps on Indian Land

***Local Lists of Hazardous waste / Contaminated Sites***

US HIST CDL ..... Delisted National Clandestine Laboratory Register

HIST Cal-Sites ---- Historical Calsites Database
SCH ---- School Property Evaluation Program
CDL ---- Clandestine Drug Labs
Toxic Pits ---- Toxic Pits Cleanup Act Sites
US CDL ---- National Clandestine Laboratory Register
CERS HAZ WASTE ---- CERS HAZ WASTE

***Local Lists of Registered Storage Tanks***

SWEEPS UST ---- SWEEPS UST Listing
HIST UST ---- Hazardous Substance Storage Container Database
CA FID UST ---- Facility Inventory Database
CERS TANKS ---- California Environmental Reporting System (CERS) Tanks

***Local Land Records***

LIENS ---- Environmental Liens Listing
LIENS 2 ---- CERCLA Lien Information
DEED ---- Deed Restriction Listing

***Records of Emergency Release Reports***

HMIRS ---- Hazardous Materials Information Reporting System
CHMIRS ---- California Hazardous Material Incident Report System
LDS ---- Land Disposal Sites Listing
MCS ---- Military Cleanup Sites Listing
SPILLS 90 ---- SPILLS 90 data from FirstSearch

***Other Ascertainable Records***

RCRA NonGen / NLR ---- RCRA - Non Generators / No Longer Regulated
FUDS ---- Formerly Used Defense Sites
DOD ---- Department of Defense Sites
SCRD DRYCLEANERS ---- State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR ---- Financial Assurance Information
EPA WATCH LIST ---- EPA WATCH LIST
2020 COR ACTION ---- 2020 Corrective Action Program List
TSCA ---- Toxic Substances Control Act
TRIS ---- Toxic Chemical Release Inventory System
SSTS ---- Section 7 Tracking Systems
ROD ---- Records Of Decision
RMP ---- Risk Management Plans
RAATS ---- RCRA Administrative Action Tracking System
PRP ---- Potentially Responsible Parties
PADS ---- PCB Activity Database System
ICIS ---- Integrated Compliance Information System
FTTS ---- FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS ---- Material Licensing Tracking System
COAL ASH DOE ---- Steam-Electric Plant Operation Data
COAL ASH EPA ---- Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER ---- PCB Transformer Registration Database
RADINFO ---- Radiation Information Database
HIST FTTS ---- FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS ---- Incident and Accident Data

CONSENT Superfund (CERCLA) Consent Decrees
INDIAN RESERV Indian Reservations
FUSRAP Formerly Utilized Sites Remedial Action Program
UMTRA Uranium Mill Tailings Sites
LEAD SMELTERS Lead Smelter Sites
US AIRS Aerometric Information Retrieval System Facility Subsystem
US MINES Mines Master Index File
ABANDONED MINES Abandoned Mines
FINDS Facility Index System/Facility Registry System
UXO Unexploded Ordnance Sites
ECHO Enforcement & Compliance History Information
DOCKET HWC Hazardous Waste Compliance Docket Listing
FUELS PROGRAM EPA Fuels Program Registered Listing
CA BOND EXP. PLAN Bond Expenditure Plan
Cortese "Cortese" Hazardous Waste & Substances Sites List
CUPA Listings CUPA Resources List
DRYCLEANERS Cleaner Facilities
EMI Emissions Inventory Data
ENF Enforcement Action Listing
Financial Assurance Financial Assurance Information Listing
HAZNET Facility and Manifest Data
ICE ICE
HIST CORTESE Hazardous Waste & Substance Site List
HWP EnviroStor Permitted Facilities Listing
HWT Registered Hazardous Waste Transporter Database
MINES Mines Site Location Listing
MWMP Medical Waste Management Program Listing
NPDES NPDES Permits Listing
PEST LIC Pesticide Regulation Licenses Listing
PROC Certified Processors Database
Notify 65 Proposition 65 Records
WASTEWATER PITS Oil Wastewater Pits Listing
WDS Waste Discharge System
WIP Well Investigation Program Case List
CIWQS California Integrated Water Quality System
SAMPLING POINT SAMPLING POINT (GEOTRACKER)
OTHER OIL GAS OTHER OIL & GAS (GEOTRACKER)
CERS CERS
MILITARY PRIV SITES MILITARY PRIV SITES (GEOTRACKER)
NON-CASE INFO NON-CASE INFO (GEOTRACKER)
UIC GEO UIC GEO (GEOTRACKER)
PROJECT PROJECT (GEOTRACKER)
WDR Waste Discharge Requirements Listing
WELL STIM PROJ Well Stimulation Project (GEOTRACKER)
PROD WATER PONDS PROD WATER PONDS (GEOTRACKER)

**EDR HIGH RISK HISTORICAL RECORDS**

***EDR Exclusive Records***

EDR MGP EDR Proprietary Manufactured Gas Plants
EDR Hist Auto EDR Exclusive Historical Auto Stations
EDR Hist Cleaner EDR Exclusive Historical Cleaners

**EDR RECOVERED GOVERNMENT ARCHIVES**

***Exclusive Recovered Govt. Archives***

RGA LF Recovered Government Archive Solid Waste Facilities List

# EXECUTIVE SUMMARY

RGA LUST---------- Recovered Government Archive Leaking Underground Storage Tank

**SURROUNDING SITES: SEARCH RESULTS**

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

**STANDARD ENVIRONMENTAL RECORDS**

***State- and tribal - equivalent CERCLIS***

ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 07/30/2018 has revealed that there is 1 ENVIROSTOR site within approximately 1 mile of the target property.

| Lower Elevation | Address | Direction / Distance | Map ID | Page |
|---|---|---|---|---|
| ***LOMA VISTA ELEMENTAR***<br>Facility Id: 7820007<br>Status: No Action Required | ***2110 SAN JOSE AVENUE*** | ***ENE 1/2 - 1 (0.802 mi.)*** | ***4*** | ***9*** |

**ADDITIONAL ENVIRONMENTAL RECORDS**

***Other Ascertainable Records***

CONTRA COSTA CO. SITE LIST: Lists includes sites from the Underground Tank Program, Hazardous Waste Generator Program & Business Plan 12185 Program

A review of the CONTRA COSTA CO. SITE LIST list, as provided by EDR, and dated 08/20/2018 has revealed that there is 1 CONTRA COSTA CO. SITE LIST site within approximately 0.25 miles of the target property.

# EXECUTIVE SUMMARY

| Lower Elevation | Address | Direction / Distance | Map ID | Page |
|---|---|---|---|---|
| MOUNTAIN MIKE'S PIZZ<br>Facility Id: FA0041626 | 380 COUNTRY CLUB DR | ESE 1/8 - 1/4 (0.152 mi.) | 3 | 9 |

UIC: A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

A review of the UIC list, as provided by EDR, and dated 04/27/2018 has revealed that there are 2 UIC sites within approximately 0.001 miles of the target property.

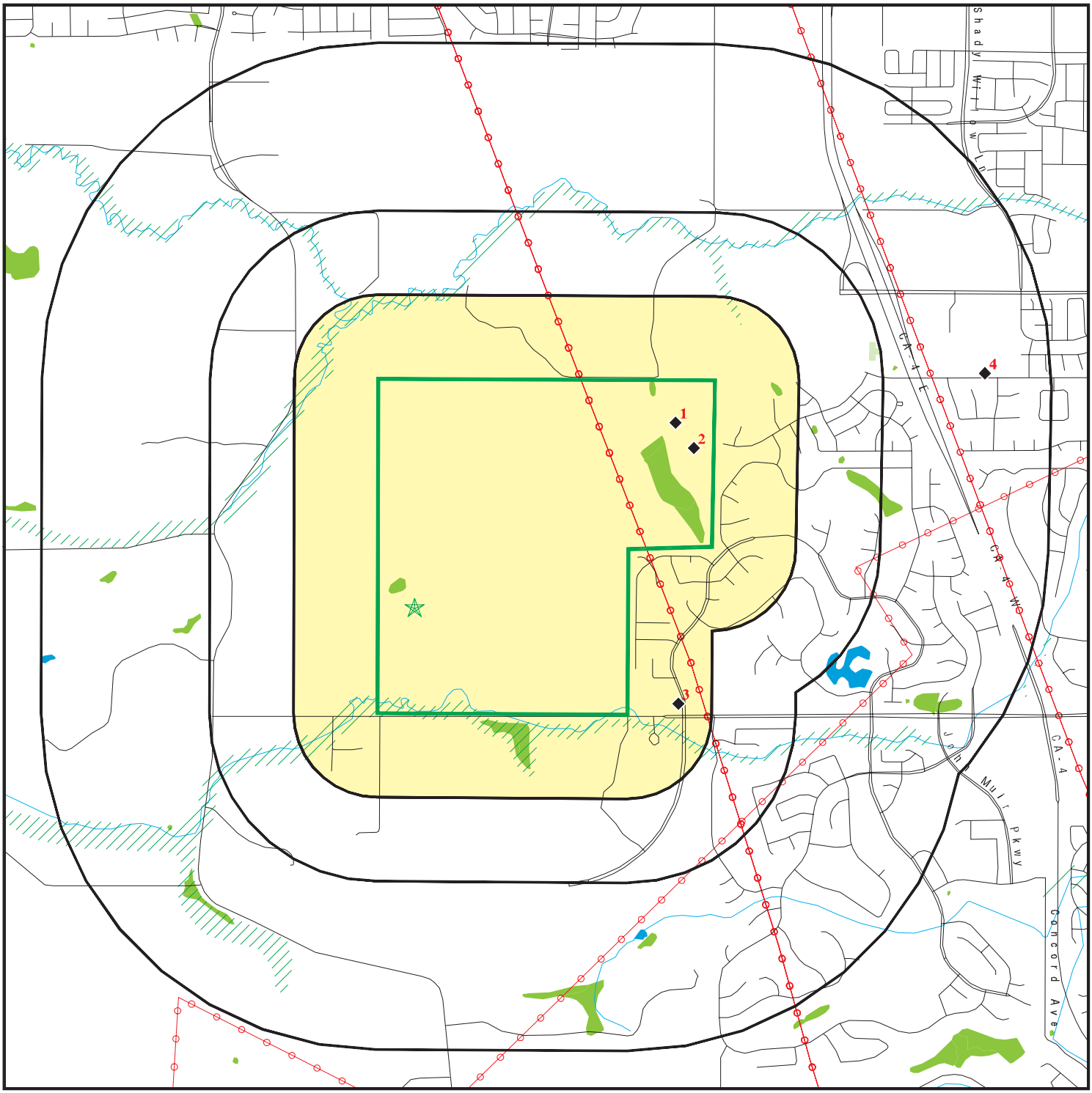
| Lower Elevation | Address | Direction / Distance | Map ID | Page |
|---|---|---|---|---|
| OCCIDENTAL PETROLEUM<br>Well Status: Plugged | | 0 - 1/8 (0.000 mi.) | 1 | 8 |
| OCCIDENTAL PETROLEUM<br>Well Status: Plugged | | 0 - 1/8 (0.000 mi.) | 2 | 8 |

# EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 5 records.

| Site Name | Database(s) |
|---|---|
| SANTA FE PACIFIC PIPELINE PARTNERS | SEMS-ARCHIVE |
| VENTURINI LEASE SITE (BRENTWOOD OI | CPS-SLIC |
| OXY USA INC. (BRENTWOOD OIL & GAS | CPS-SLIC |
| THE TERMO COMPANY | CPS-SLIC |
| SHEA HOMES PROPERTY (FORMERLY GERM | CPS-SLIC |

# OVERVIEW MAP - 05498334.11R




Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

National Priority List Sites

Dept. Defense Sites

0 1/4 1/2 1 Miles

Indian Reservations BIA

Power transmission lines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

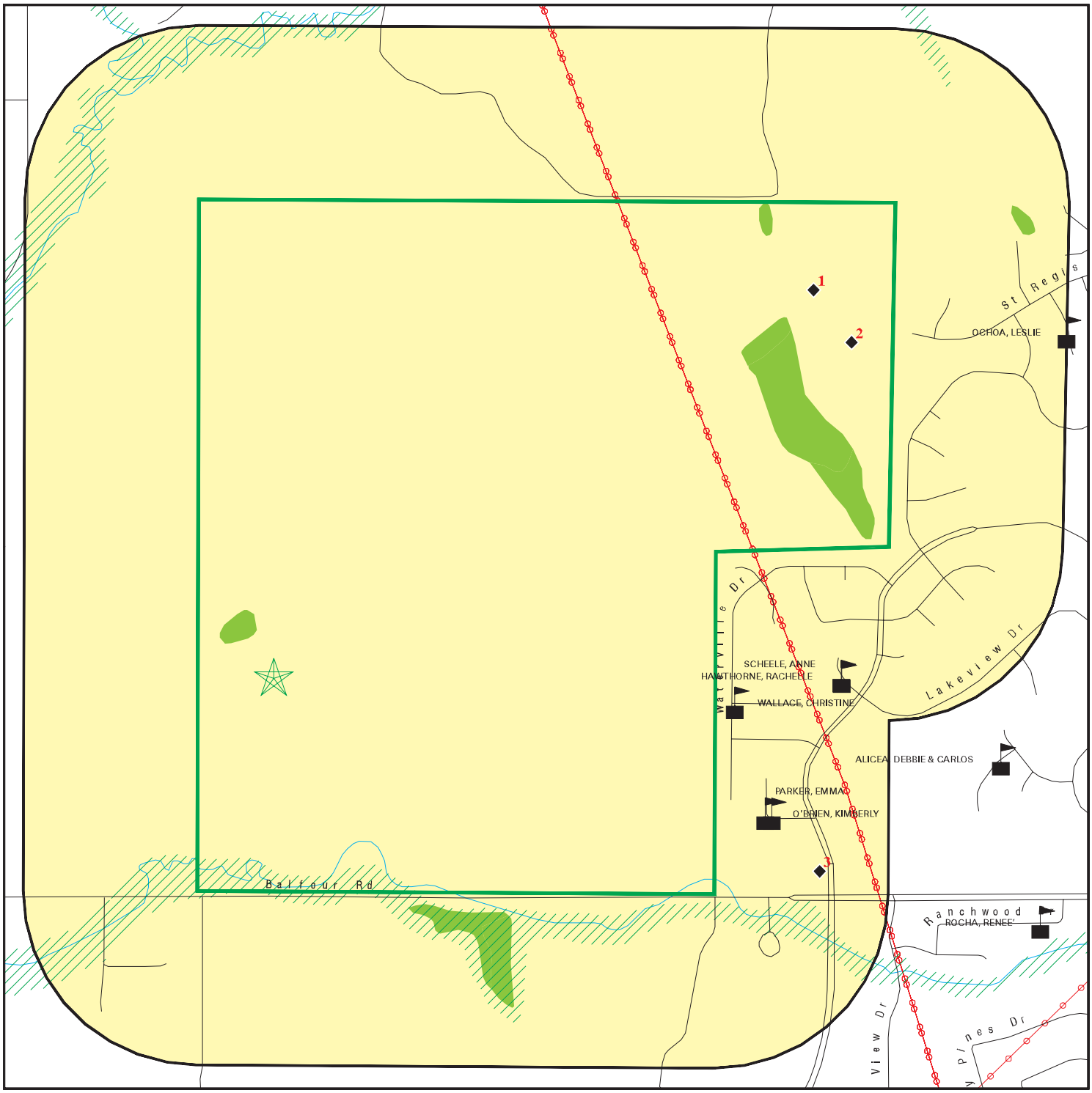
N

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

| | | | |
|---|---|---|---|
| SITE NAME: | Ginochio - Eastern Parcels | CLIENT: | Engeo Inc. |
| ADDRESS: | Balfour Road<br>Brentwood CA 94513 | CONTACT: | Ana Lua |
| | | INQUIRY #: | 05498334.11r |
| LAT/LONG: | 37.929886 / 121.7671 | DATE: | November 29, 2018 5:02 pm |

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# DETAIL MAP - 05498334.11R




0 1/8 1/4 1/2 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

| | | | |
|---|---|---|---|
| SITE NAME: | Ginochio - Eastern Parcels | CLIENT: | Engeo Inc. |
| ADDRESS: | Balfour Road<br>Brentwood CA 94513 | CONTACT: | Ana Lua |
| | | INQUIRY #: | 05498334.11r |
| LAT/LONG: | 37.929886 / 121.7671 | DATE: | November 29, 2018 5:08 pm |

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# MAP FINDINGS SUMMARY

| Database | Search Distance (Miles) | Target Property | < 1/8 | 1/8 - 1/4 | 1/4 - 1/2 | 1/2 - 1 | > 1 | Total Plotted |
|---|---|---|---|---|---|---|---|---|
| **STANDARD ENVIRONMENTAL RECORDS** | | | | | | | | |
| ***Federal NPL site list*** | | | | | | | | |
| NPL | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| Proposed NPL | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| NPL LIENS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| ***Federal Delisted NPL site list*** | | | | | | | | |
| Delisted NPL | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| ***Federal CERCLIS list*** | | | | | | | | |
| FEDERAL FACILITY | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| SEMS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Federal CERCLIS NFRAP site list*** | | | | | | | | |
| SEMS-ARCHIVE | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Federal RCRA CORRACTS facilities list*** | | | | | | | | |
| CORRACTS | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| ***Federal RCRA non-CORRACTS TSD facilities list*** | | | | | | | | |
| RCRA-TSDF | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Federal RCRA generators list*** | | | | | | | | |
| RCRA-LQG | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| RCRA-SQG | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| RCRA-CESQG | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| ***Federal institutional controls / engineering controls registries*** | | | | | | | | |
| LUCIS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| US ENG CONTROLS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| US INST CONTROL | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Federal ERNS list*** | | | | | | | | |
| ERNS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| ***State- and tribal - equivalent NPL*** | | | | | | | | |
| RESPONSE | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| ***State- and tribal - equivalent CERCLIS*** | | | | | | | | |
| ENVIROSTOR | 1.000 | | 0 | 0 | 0 | 1 | NR | 1 |
| ***State and tribal landfill and/or solid waste disposal site lists*** | | | | | | | | |
| SWF/LF | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***State and tribal leaking storage tank lists*** | | | | | | | | |
| LUST | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |

# MAP FINDINGS SUMMARY

| Database | Search Distance (Miles) | Target Property | < 1/8 | 1/8 - 1/4 | 1/4 - 1/2 | 1/2 - 1 | > 1 | Total Plotted |
|---|---|---|---|---|---|---|---|---|
| INDIAN LUST | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| CPS-SLIC | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***State and tribal registered storage tank lists*** | | | | | | | | |
| FEMA UST | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| UST | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| AST | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| INDIAN UST | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| ***State and tribal voluntary cleanup sites*** | | | | | | | | |
| INDIAN VCP | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| VCP | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***State and tribal Brownfields sites*** | | | | | | | | |
| BROWNFIELDS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| **ADDITIONAL ENVIRONMENTAL RECORDS** | | | | | | | | |
| ***Local Brownfield lists*** | | | | | | | | |
| US BROWNFIELDS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Local Lists of Landfill / Solid Waste Disposal Sites*** | | | | | | | | |
| WMUDS/SWAT | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| SWRCY | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| HAULERS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| INDIAN ODI | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ODI | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| DEBRIS REGION 9 | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| IHS OPEN DUMPS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Local Lists of Hazardous waste / Contaminated Sites*** | | | | | | | | |
| US HIST CDL | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| HIST Cal-Sites | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| SCH | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| CDL | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| Toxic Pits | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| US CDL | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| CERS HAZ WASTE | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| ***Local Lists of Registered Storage Tanks*** | | | | | | | | |
| SWEEPS UST | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| HIST UST | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| CA FID UST | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| CERS TANKS | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| ***Local Land Records*** | | | | | | | | |
| LIENS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| LIENS 2 | 0.001 | | 0 | NR | NR | NR | NR | 0 |

# MAP FINDINGS SUMMARY

| Database | Search Distance (Miles) | Target Property | < 1/8 | 1/8 - 1/4 | 1/4 - 1/2 | 1/2 - 1 | > 1 | Total Plotted |
|---|---|---|---|---|---|---|---|---|
| DEED | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Records of Emergency Release Reports*** | | | | | | | | |
| HMIRS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| CHMIRS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| LDS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| MCS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| SPILLS 90 | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| ***Other Ascertainable Records*** | | | | | | | | |
| RCRA NonGen / NLR | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| FUDS | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| DOD | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| SCRD DRYCLEANERS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| US FIN ASSUR | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| EPA WATCH LIST | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| 2020 COR ACTION | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| TSCA | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| TRIS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| SSTS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| ROD | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| RMP | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| RAATS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| PRP | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| PADS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| ICIS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| FTTS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| MLTS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| COAL ASH DOE | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| COAL ASH EPA | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| PCB TRANSFORMER | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| RADINFO | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| HIST FTTS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| DOT OPS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| CONSENT | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| INDIAN RESERV | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| FUSRAP | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| UMTRA | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| LEAD SMELTERS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| US AIRS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| US MINES | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| ABANDONED MINES | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| FINDS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| UXO | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| ECHO | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| DOCKET HWC | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| FUELS PROGRAM | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| CA BOND EXP. PLAN | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| Cortese | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| CUPA Listings | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| DRYCLEANERS | 0.250 | | 0 | 0 | NR | NR | NR | 0 |

# MAP FINDINGS SUMMARY

| Database | Search Distance (Miles) | Target Property | < 1/8 | 1/8 - 1/4 | 1/4 - 1/2 | 1/2 - 1 | > 1 | Total Plotted |
|---|---|---|---|---|---|---|---|---|
| EMI | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| ENF | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| Financial Assurance | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| HAZNET | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| ICE | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| HIST CORTESE | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| HWP | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| HWT | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| MINES | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| MWMP | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| NPDES | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| PEST LIC | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| PROC | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| Notify 65 | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| CONTRA COSTA CO. SITE LIST | 0.250 | | 0 | 1 | NR | NR | NR | 1 |
| UIC | 0.001 | | 2 | NR | NR | NR | NR | 2 |
| WASTEWATER PITS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| WDS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| WIP | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| CIWQS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| SAMPLING POINT | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| OTHER OIL GAS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| CERS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| MILITARY PRIV SITES | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| NON-CASE INFO | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| UIC GEO | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| PROJECT | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| WDR | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| WELL STIM PROJ | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| PROD WATER PONDS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| **EDR HIGH RISK HISTORICAL RECORDS** | | | | | | | | |
| ***EDR Exclusive Records*** | | | | | | | | |
| EDR MGP | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| EDR Hist Auto | 0.125 | | 0 | NR | NR | NR | NR | 0 |
| EDR Hist Cleaner | 0.125 | | 0 | NR | NR | NR | NR | 0 |
| **EDR RECOVERED GOVERNMENT ARCHIVES** | | | | | | | | |
| ***Exclusive Recovered Govt. Archives*** | | | | | | | | |
| RGA LF | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| RGA LUST | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| - Totals -- | | 0 | 2 | 1 | 0 | 1 | 0 | 4 |

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

**1** **OCCIDENTAL PETROLEUM CORPORATION** **UIC** **S118822795**
**N/A**

**< 1/8**
**1 ft.**

**CONTRA COSTA (County), CA**

**Relative:**
**Lower**

**Actual:**
**204 ft.**

UIC:

| | |
|---|---|
| API Number: | 01300040 |
| Confidential Well: | No |
| Well Number: | 'Ginochio-Shellenberger' 2-16 |
| Direction: | N |
| Lease Name: | Ginochio-Shellenberger |
| Field Name: | Brentwood (ABD) |
| Area Name: | Main |
| Section: | 16 |
| Township: | 01N |
| Range: | 02E |
| Base And Meridian; Part Of The PLSS: | MD |
| GIS Source Code: | hud |
| Latitude: | 37.93793 |
| Longitude: | -121.7529 |
| Well Type: | Water Disposal |
| Well Status: | Plugged |
| Operator Code: | O0500 |
| Operator Name: | Occidental Petroleum Corporation |
| BLM Well: | N |
| EPA Well: | N |
| Location: | Not reported |
| Dryhole: | N |
| Well DEP: | 4746 |
| Aband Status: | Not reported |

---

**2** **OCCIDENTAL PETROLEUM CORPORATION** **UIC** **S118822796**
**N/A**

**< 1/8**
**1 ft.**

**CONTRA COSTA (County), CA**

**Relative:**
**Lower**

**Actual:**
**203 ft.**

UIC:

| | |
|---|---|
| API Number: | 01300043 |
| Confidential Well: | No |
| Well Number: | 'Ginochio-Shellenberger' 22-16 |
| Direction: | N |
| Lease Name: | Ginochio-Shellenberger |
| Field Name: | Brentwood (ABD) |
| Area Name: | Main |
| Section: | 16 |
| Township: | 01N |
| Range: | 02E |
| Base And Meridian; Part Of The PLSS: | MD |
| GIS Source Code: | hud |
| Latitude: | 37.93684 |
| Longitude: | -121.7519 |
| Well Type: | Water Disposal |
| Well Status: | Plugged |
| Operator Code: | O0500 |
| Operator Name: | Occidental Petroleum Corporation |
| BLM Well: | N |
| EPA Well: | N |
| Location: | Not reported |
| Dryhole: | N |
| Well DEP: | 4500 |

**OCCIDENTAL PETROLEUM CORPORATION (Continued)** **S118822796**

Aband Status: Not reported

---

**3**
**ESE**
**1/8-1/4**
**0.152 mi.**
**800 ft.**

**MOUNTAIN MIKE'S PIZZA**
**380 COUNTRY CLUB DR A**
**BRENTWOOD, CA 94513**

**CONTRA COSTA CO. SITE LIST** **S122501221**
**N/A**

**Relative:**
**Lower**

**Actual:**
**172 ft.**

CONTRA COSTA CO. SITE LIST:
Facility ID: FA0041626
Billing Status: ACTIVE, BILLABLE
Program Status: CONTRA COSTA CO. SITE LIST
Program/Elements: HMBP GENERAL
Region: CONTRA COSTA
Cupa Number: 776144

---

**4**
**ENE**
**1/2-1**
**0.802 mi.**
**4237 ft.**

**LOMA VISTA ELEMENTARY CLASSROOM ADDITION**
**2110 SAN JOSE AVENUE**
**BRENTWOOD, CA 94513**

**ENVIROSTOR** **S118757485**
**SCH** **N/A**

**Relative:**
**Lower**

**Actual:**
**124 ft.**

ENVIROSTOR:
Facility ID: 7820007
Status: No Action Required
Status Date: 05/31/2001
Site Code: 204078
Site Type: School Investigation
Site Type Detailed: School
Acres: 54
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP
Program Manager: Kamili Siglowide
Supervisor: Charles Ridenour
Division Branch: Northern California Schools & Santa Susana
Assembly: 11
Senate: 07
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: School District
Latitude: 37.94052
Longitude: -121.7355
APN: 019110043
Past Use: SCHOOL - ELEMENTARY
Potential COC: NONE SPECIFIED No Contaminants found
Confirmed COC: NONE SPECIFIED
Potential Description: NMA
Alias Name: Not reported
Alias Type: Not reported

Completed Info:
Completed Area Name: Not reported
Completed Sub Area Name: Not reported
Completed Document Type: Not reported
Completed Date: Not reported

**LOMA VISTA ELEMENTARY CLASSROOM ADDITION (Continued)** **S118757485**

Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

SCH:

Facility ID: 7820007
Site Type: School Investigation
Site Type Detail: School
Site Mgmt. Req.: NONE SPECIFIED
Acres: 54
National Priorities List: NO
Cleanup Oversight Agencies: SMBRP
Lead Agency: SMBRP
Lead Agency Description: DTSC - Site Cleanup Program
Project Manager: Kamili Siglowide
Supervisor: Charles Ridenour
Division Branch: Northern California Schools & Santa Susana
Site Code: 204078
Assembly: 11
Senate: 07
Special Program Status: Not reported
Status: No Action Required
Status Date: 05/31/2001
Restricted Use: NO
Funding: School District
Latitude: 37.94052
Longitude: -121.7355
APN: 019110043
Past Use: SCHOOL - ELEMENTARY
Potential COC: NONE SPECIFIED, No Contaminants found
Confirmed COC: NONE SPECIFIED
Potential Description: NMA
Alias Name: Not reported
Alias Type: Not reported

Completed Info:
Completed Area Name: Not reported
Completed Sub Area Name: Not reported
Completed Document Type: Not reported
Completed Date: Not reported
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported

**LOMA VISTA ELEMENTARY CLASSROOM ADDITION (Continued)** **S118757485**

Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

Count: 5 records.

ORPHAN SUMMARY

| City | EDR ID | Site Name | Site Address | Zip | Database(s) |
|---|---|---|---|---|---|
| BRENTWOOD | 1003879687 | SANTA FE PACIFIC PIPELINE PARTNERS | SE CORNER OF BALFOUR RD & FAIR | 94513 | SEMS-ARCHIVE |
| BRENTWOOD | S106230275 | VENTURINI LEASE SITE (BRENTWOOD OI | DEER VALLEY RD & LONE TREE WAY | | CPS-SLIC |
| BRENTWOOD | S106112407 | OXY USA INC. (BRENTWOOD OIL & GAS | LONE TREE WAY & DEER VALLEY RD | | CPS-SLIC |
| BRENTWOOD | S105982781 | THE TERMO COMPANY | SAN JOSE AVE., SW END | | CPS-SLIC |
| BRENTWOOD | S106707856 | SHEA HOMES PROPERTY (FORMERLY GERM | SAN JOSE AVE AND SAN JOSE RD | | CPS-SLIC |

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

**Number of Days to Update:** Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

**STANDARD ENVIRONMENTAL RECORDS**

***Federal NPL site list***

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 08/13/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 36

Source: EPA
Telephone: N/A
Last EDR Contact: 11/27/2018
Next Scheduled EDR Contact: 01/14/2019
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 08/13/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 36

Source: EPA
Telephone: N/A
Last EDR Contact: 11/27/2018
Next Scheduled EDR Contact: 01/14/2019
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

***Federal Delisted NPL site list***

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 08/13/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 36

Source: EPA
Telephone: N/A
Last EDR Contact: 11/27/2018
Next Scheduled EDR Contact: 01/14/2019
Data Release Frequency: Quarterly

***Federal CERCLIS list***

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 11/07/2016
Date Data Arrived at EDR: 01/05/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 92

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 07/06/2018
Next Scheduled EDR Contact: 10/15/2018
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 08/13/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 43

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 11/27/2018
Next Scheduled EDR Contact: 01/28/2019
Data Release Frequency: Quarterly

***Federal CERCLIS NFRAP site list***

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 08/13/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 43

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 11/28/2018
Next Scheduled EDR Contact: 01/28/2019
Data Release Frequency: Quarterly

***Federal RCRA CORRACTS facilities list***

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 09/19/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Quarterly

***Federal RCRA non-CORRACTS TSD facilities list***

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/19/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Quarterly

***Federal RCRA generators list***

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/19/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/19/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/19/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Quarterly

***Federal institutional controls / engineering controls registries***

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 05/14/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 10/15/2018
Next Scheduled EDR Contact: 02/25/2019
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 07/31/2018
Date Data Arrived at EDR: 08/28/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 17

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 11/28/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 07/31/2018
Date Data Arrived at EDR: 08/28/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 17

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 11/28/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Varies

***Federal ERNS list***

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 09/24/2018
Date Data Arrived at EDR: 09/25/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 45

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 09/25/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Quarterly

***State- and tribal - equivalent NPL***

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 07/30/2018
Date Data Arrived at EDR: 07/31/2018
Date Made Active in Reports: 09/07/2018
Number of Days to Update: 38

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 10/30/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: Quarterly

***State- and tribal - equivalent CERCLIS***

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 07/30/2018
Date Data Arrived at EDR: 07/31/2018
Date Made Active in Reports: 09/07/2018
Number of Days to Update: 38

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 10/30/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: Quarterly

***State and tribal landfill and/or solid waste disposal site lists***

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 08/08/2018
Date Data Arrived at EDR: 08/10/2018
Date Made Active in Reports: 08/24/2018
Number of Days to Update: 14

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 02/25/2019
Data Release Frequency: Quarterly

***State and tribal leaking storage tank lists***

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LUST REG 1: Active Toxic Site Investigation

Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 7: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST: Leaking Underground Fuel Tank Report (GEOTRACKER)

Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/08/2018
Number of Days to Update: 26

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 09/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Quarterly

LUST REG 9: Leaking Underground Storage Tank Report

Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing

For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List

Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

LUST REG 3: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List

Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks

California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 04/12/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 04/10/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 04/25/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 04/24/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 04/01/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63
Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 05/08/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 04/13/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63
Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 04/12/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63
Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

CPS-SLIC: Statewide SLIC Cases (GEOTRACKER)
Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/09/2018
Number of Days to Update: 27
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35
Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36
Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11
Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Annually

***State and tribal registered storage tank lists***

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 05/15/2017
Date Data Arrived at EDR: 05/30/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 136
Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 10/10/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: Varies

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/03/2018
Number of Days to Update: 21
Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 09/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Semi-Annually

UST CLOSURE: Proposed Closure of Underground Storage Tank (UST) Cases

UST cases that are being considered for closure by either the State Water Resources Control Board or the Executive Director have been posted for a 60-day public comment period. UST Case Closures being proposed for consideration by the State Water Resources Control Board. These are primarily UST cases that meet closure criteria under the decisional framework in State Water Board Resolution No. 92-49 and other Board orders. UST Case Closures proposed for consideration by the Executive Director pursuant to State Water Board Resolution No. 2012-0061. These are cases that meet the criteria of the Low-Threat UST Case Closure Policy. UST Case Closure Review Denials and Approved Orders.

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/03/2018
Number of Days to Update: 21

Source: State Water Resources Control Board
Telephone: 916-327-7844
Last EDR Contact: 09/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Varies

MILITARY UST SITES: Military UST Sites (GEOTRACKER)

Military ust sites

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/09/2018
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Varies

AST: Aboveground Petroleum Storage Tank Facilities

A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 07/06/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 09/19/2016
Number of Days to Update: 69

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 09/17/2018
Next Scheduled EDR Contact: 12/31/2018
Data Release Frequency: Quarterly

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 05/08/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 04/12/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 04/10/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 04/12/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 04/13/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 04/24/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 04/01/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 04/25/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

***State and tribal voluntary cleanup sites***

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Properties

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 07/30/2018
Date Data Arrived at EDR: 07/31/2018
Date Made Active in Reports: 09/07/2018
Number of Days to Update: 38

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 10/30/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: Quarterly

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 09/24/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Varies

***State and tribal Brownfields sites***

BROWNFIELDS: Considered Brownfieds Sites Listing

A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 09/24/2018
Date Data Arrived at EDR: 09/25/2018
Date Made Active in Reports: 10/15/2018
Number of Days to Update: 20

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 09/25/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Quarterly

**ADDITIONAL ENVIRONMENTAL RECORDS**

***Local Brownfield lists***

US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 09/18/2018
Date Data Arrived at EDR: 09/18/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 09/18/2018
Next Scheduled EDR Contact: 12/31/2018
Data Release Frequency: Semi-Annually

***Local Lists of Landfill / Solid Waste Disposal Sites***

WMUDS/SWAT: Waste Management Unit Database

Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 10/25/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/15/2018
Number of Days to Update: 33

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 09/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 09/26/2018
Date Data Arrived at EDR: 09/28/2018
Date Made Active in Reports: 11/01/2018
Number of Days to Update: 34

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 08/07/2018
Next Scheduled EDR Contact: 02/25/2019
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 10/25/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: Varies

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 10/22/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land
A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 11/02/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

***Local Lists of Hazardous waste / Contaminated Sites***

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 09/21/2018
Date Data Arrived at EDR: 09/21/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 49

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 11/26/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: No Update Planned

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 07/30/2018
Date Data Arrived at EDR: 07/31/2018
Date Made Active in Reports: 09/07/2018
Number of Days to Update: 38

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 10/30/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: Quarterly

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 06/12/2018
Date Made Active in Reports: 08/06/2018
Number of Days to Update: 55

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 11/01/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: Varies

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 09/21/2018
Date Data Arrived at EDR: 09/21/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 49

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 11/26/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Quarterly

CERS HAZ WASTE: CERS HAZ WASTE

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA LQ HW Generator programs.

Date of Government Version: 07/23/2018
Date Data Arrived at EDR: 07/25/2018
Date Made Active in Reports: 09/05/2018
Number of Days to Update: 42

Source: CalEPA
Telephone: 916-323-2514
Last EDR Contact: 10/23/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Quarterly

***Local Lists of Registered Storage Tanks***

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 03/28/2018
Date Data Arrived at EDR: 05/25/2018
Date Made Active in Reports: 07/10/2018
Number of Days to Update: 46

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 11/26/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SAN FRANCISCO AST: Aboveground Storage Tank Site Listing

Aboveground storage tank sites

Date of Government Version: 09/11/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/11/2018
Number of Days to Update: 29

Source: San Francisco County Department of Public Health
Telephone: 415-252-3896
Last EDR Contact: 11/01/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Varies

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CERS TANKS: California Environmental Reporting System (CERS) Tanks

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Aboveground Petroleum Storage and Underground Storage Tank regulatory programs.

Date of Government Version: 07/23/2018
Date Data Arrived at EDR: 07/25/2018
Date Made Active in Reports: 09/05/2018
Number of Days to Update: 42

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 10/23/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Quarterly

***Local Land Records***

LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 08/29/2018
Date Data Arrived at EDR: 08/30/2018
Date Made Active in Reports: 10/01/2018
Number of Days to Update: 32

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/29/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 08/13/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 43

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 11/27/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Semi-Annually

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 09/04/2018
Date Data Arrived at EDR: 09/05/2018
Date Made Active in Reports: 10/02/2018
Number of Days to Update: 27

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 09/05/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Semi-Annually

***Records of Emergency Release Reports***

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 03/26/2018
Date Data Arrived at EDR: 03/27/2018
Date Made Active in Reports: 06/08/2018
Number of Days to Update: 73

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 09/25/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Quarterly

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 04/06/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 51

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Semi-Annually

LDS: Land Disposal Sites Listing (GEOTRACKER)

Land Disposal sites (Landfills) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/08/2018
Number of Days to Update: 26

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing (GEOTRACKER)

Military sites (consisting of: Military UST sites; Military Privatized sites; and Military Cleanup sites [formerly known as DoD non UST]) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/09/2018
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

***Other Ascertainable Records***

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/19/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 01/31/2015
Date Data Arrived at EDR: 07/08/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 97

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 11/19/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 10/12/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 10/12/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 01/01/2017
Date Data Arrived at EDR: 02/03/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 11/16/2018
Next Scheduled EDR Contact: 02/25/2019
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 08/31/2018
Date Data Arrived at EDR: 09/25/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 45

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 09/25/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 11/05/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 05/08/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 11/09/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 06/21/2017
Date Made Active in Reports: 01/05/2018
Number of Days to Update: 198

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 09/21/2018
Next Scheduled EDR Contact: 12/31/2018
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 01/10/2018
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 2

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 11/16/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 10/24/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 08/13/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 43

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 11/27/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 08/01/2018
Date Data Arrived at EDR: 08/22/2018
Date Made Active in Reports: 10/05/2018
Number of Days to Update: 44

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 10/23/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 08/13/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 36

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 10/04/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 06/01/2017
Date Data Arrived at EDR: 06/09/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 126

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 10/11/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 10/09/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Quarterly

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 08/30/2016
Date Data Arrived at EDR: 09/08/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 43

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 10/11/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 09/07/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 09/04/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 05/24/2017
Date Data Arrived at EDR: 11/30/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 15
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 10/02/2018
Date Data Arrived at EDR: 10/03/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 37
Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 10/03/2018
Next Scheduled EDR Contact: 01/14/2019
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data
Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42
Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 10/30/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees
Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 06/30/2018
Date Data Arrived at EDR: 07/17/2018
Date Made Active in Reports: 10/05/2018
Number of Days to Update: 80

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 10/01/2018
Next Scheduled EDR Contact: 12/31/2018
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 09/28/2017
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 11/21/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 10/09/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 08/08/2017
Date Data Arrived at EDR: 09/11/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 3

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 11/01/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 06/23/2017
Date Data Arrived at EDR: 10/11/2017
Date Made Active in Reports: 11/03/2017
Number of Days to Update: 23

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 11/16/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 08/13/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 43

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 11/27/2018
Next Scheduled EDR Contact: 01/14/2019
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/01/2018
Date Data Arrived at EDR: 08/29/2018
Date Made Active in Reports: 10/05/2018
Number of Days to Update: 37

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 08/29/2018
Next Scheduled EDR Contact: 12/10/2018
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 08/31/2018
Next Scheduled EDR Contact: 12/10/2018
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 08/31/2018
Next Scheduled EDR Contact: 12/10/2018
Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/11/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 3

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 09/10/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 08/07/2018
Date Data Arrived at EDR: 09/05/2018
Date Made Active in Reports: 10/05/2018
Number of Days to Update: 30

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 09/18/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Quarterly

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 06/19/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 87

Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 10/15/2018
Next Scheduled EDR Contact: 01/28/2019
Data Release Frequency: Varies

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 09/02/2018
Date Data Arrived at EDR: 09/05/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 9

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 09/05/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 07/26/2018
Date Made Active in Reports: 10/05/2018
Number of Days to Update: 71

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 08/31/2018
Next Scheduled EDR Contact: 12/10/2018
Data Release Frequency: Varies

FUELS PROGRAM: EPA Fuels Program Registered Listing

This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 08/22/2018
Date Data Arrived at EDR: 08/22/2018
Date Made Active in Reports: 10/05/2018
Number of Days to Update: 44

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 11/19/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Quarterly

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CORTESE: "Cortese" Hazardous Waste & Substances Sites List

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 09/24/2018
Date Data Arrived at EDR: 09/25/2018
Date Made Active in Reports: 10/16/2018
Number of Days to Update: 21

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 09/25/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Quarterly

CUPA LIVERMORE-PLEASANTON: CUPA Facility Listing

list of facilities associated with the various CUPA programs in Livermore-Pleasanton

Date of Government Version: 08/28/2018
Date Data Arrived at EDR: 08/30/2018
Date Made Active in Reports: 11/01/2018
Number of Days to Update: 63

Source: Livermore-Pleasanton Fire Department
Telephone: 925-454-2361
Last EDR Contact: 11/26/2018
Next Scheduled EDR Contact: 02/25/2019
Data Release Frequency: Varies

CUPA SAN FRANCISCO CO: CUPA Facility Listing

Cupa facilities

Date of Government Version: 09/11/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 09/19/2018
Number of Days to Update: 7

Source: San Francisco County Department of Environmental Health
Telephone: 415-252-3896
Last EDR Contact: 11/01/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Varies

DRYCLEAN AVAQMD: Antelope Valley Air Quality Management District Drycleaner Listing

A listing of dry cleaners in the Antelope Valley Air Quality Management District.

Date of Government Version: 10/15/2018
Date Data Arrived at EDR: 10/16/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 31

Source: Antelope Valley Air Quality Management District
Telephone: 661-723-8070
Last EDR Contact: 10/15/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Varies

DRYCLEAN SOUTH COAST: South Coast Air Quality Management District Drycleaner Listing

A listing of dry cleaners in the South Coast Air Quality Management District

Date of Government Version: 10/04/2018
Date Data Arrived at EDR: 10/05/2018
Date Made Active in Reports: 11/01/2018
Number of Days to Update: 27

Source: South Coast Air Quality Management District
Telephone: 909-396-3211
Last EDR Contact: 11/26/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Varies

DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 08/30/2018
Date Data Arrived at EDR: 09/27/2018
Date Made Active in Reports: 11/01/2018
Number of Days to Update: 35

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 08/29/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Annually

EMI: Emissions Inventory Data

Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 06/20/2018
Date Made Active in Reports: 08/06/2018
Number of Days to Update: 47

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 09/21/2018
Next Scheduled EDR Contact: 12/31/2018
Data Release Frequency: Varies

ENF: Enforcement Action Listing

A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 08/01/2018
Date Data Arrived at EDR: 08/02/2018
Date Made Active in Reports: 09/07/2018
Number of Days to Update: 36

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 11/01/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing

Financial Assurance information

Date of Government Version: 07/17/2018
Date Data Arrived at EDR: 07/24/2018
Date Made Active in Reports: 09/10/2018
Number of Days to Update: 48

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 10/22/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing

A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 08/14/2018
Date Data Arrived at EDR: 08/16/2018
Date Made Active in Reports: 09/10/2018
Number of Days to Update: 25

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 11/07/2018
Next Scheduled EDR Contact: 02/25/2019
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 10/10/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 37

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 10/10/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: Annually

ICE: ICE
Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 08/20/2018
Date Data Arrived at EDR: 08/21/2018
Date Made Active in Reports: 09/10/2018
Number of Days to Update: 20

Source: Department of Toxic Subsances Control
Telephone: 877-786-9427
Last EDR Contact: 11/19/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List
The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HWP: EnviroStor Permitted Facilities Listing
Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 08/20/2018
Date Data Arrived at EDR: 08/21/2018
Date Made Active in Reports: 09/10/2018
Number of Days to Update: 20

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 11/19/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database
A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 10/09/2018
Date Data Arrived at EDR: 10/10/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 37

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 10/10/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: Quarterly

MINES: Mines Site Location Listing
A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/09/2018
Number of Days to Update: 27

Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 09/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Quarterly

MWMP: Medical Waste Management Program Listing
The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 08/28/2018
Date Data Arrived at EDR: 09/05/2018
Date Made Active in Reports: 10/03/2018
Number of Days to Update: 28

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 09/05/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Varies

NPDES: NPDES Permits Listing
A listing of NPDES permits, including stormwater.

Date of Government Version: 08/09/2018
Date Data Arrived at EDR: 08/10/2018
Date Made Active in Reports: 09/10/2018
Number of Days to Update: 31
Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 02/25/2019
Data Release Frequency: Quarterly

PEST LIC: Pesticide Regulation Licenses Listing
A listing of licenses and certificates issued by the Department of Pesticide Regulation. The DPR issues licenses and/or certificates to: Persons and businesses that apply or sell pesticides; Pest control dealers and brokers; Persons who advise on agricultural pesticide applications.

Date of Government Version: 09/04/2018
Date Data Arrived at EDR: 09/05/2018
Date Made Active in Reports: 10/03/2018
Number of Days to Update: 28
Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 09/05/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Quarterly

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/15/2018
Number of Days to Update: 33
Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 09/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Quarterly

NOTIFY 65: Proposition 65 Records
Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 09/19/2018
Date Data Arrived at EDR: 09/20/2018
Date Made Active in Reports: 10/19/2018
Number of Days to Update: 29
Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 09/17/2018
Next Scheduled EDR Contact: 12/31/2018
Data Release Frequency: No Update Planned

UIC: UIC Listing
A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 04/27/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/17/2018
Number of Days to Update: 34
Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 09/13/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Varies

WASTEWATER PITS: Oil Wastewater Pits Listing
Water officials discovered that oil producers have been dumping chemical-laden wastewater into hundreds of unlined pits that are operating without proper permits. Inspections completed by the Central Valley Regional Water Quality Control Board revealed the existence of previously unidentified waste sites. The water boards review found that more than one-third of the region's active disposal pits are operating without permission.

Date of Government Version: 05/08/2018
Date Data Arrived at EDR: 07/11/2018
Date Made Active in Reports: 09/13/2018
Number of Days to Update: 64
Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 10/12/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: Varies

WDS: Waste Discharge System
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9
Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Quarterly

WIP: Well Investigation Program Case List
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13
Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 09/25/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Varies

OTHER OIL GAS: Other Oil & Gas Projects Sites (GEOTRACKER)
Other Oil & Gas Projects sites

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/09/2018
Number of Days to Update: 27
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Varies

CIWQS: California Integrated Water Quality System
The California Integrated Water Quality System (CIWQS) is a computer system used by the State and Regional Water Quality Control Boards to track information about places of environmental interest, manage permits and other orders, track inspections, and manage violations and enforcement activities.

Date of Government Version: 09/04/2018
Date Data Arrived at EDR: 09/05/2018
Date Made Active in Reports: 10/02/2018
Number of Days to Update: 27
Source: State Water Resources Control Board
Telephone: 866-794-4977
Last EDR Contact: 09/05/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Varies

WDR: Waste Discharge Requirements Listing
In general, the Waste Discharge Requirements (WDRs) Program (sometimes also referred to as the "Non Chapter 15 (Non 15) Program") regulates point discharges that are exempt pursuant to Subsection 20090 of Title 27 and not subject to the Federal Water Pollution Control Act. Exemptions from Title 27 may be granted for nine categories of discharges (e.g., sewage, wastewater, etc.) that meet, and continue to meet, the preconditions listed for each specific exemption. The scope of the WDRs Program also includes the discharge of wastes classified as inert, pursuant to section 20230 of Title 27.

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/09/2018
Number of Days to Update: 27
Source: State Water Resources Control Board
Telephone: 916-341-5810
Last EDR Contact: 09/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Quarterly

WELL STIM PROJ: Well Stimulation Project (GEOTRACKER)
Includes areas of groundwater monitoring plans, a depiction of the monitoring network, and the facilities, boundaries, and subsurface characteristics of the oilfield and the features (oil and gas wells, produced water ponds, UIC wells, water supply wells, etc?) being monitored

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/09/2018
Number of Days to Update: 27
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

PROJECT: Project Sites (GEOTRACKER)
Projects sites

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/09/2018
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Varies

UIC GEO: Underground Injection Control Sites (GEOTRACKER)
Underground control injection sites

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/09/2018
Number of Days to Update: 27

Source: State Water Resource Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Varies

NON-CASE INFO: Non-Case Information Sites (GEOTRACKER)
Non-Case Information sites

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/09/2018
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Varies

CERS: CalEPA Regulated Site Portal Data
The CalEPA Regulated Site Portal database combines data about environmentally regulated sites and facilities in California into a single database. It combines data from a variety of state and federal databases, and provides an overview of regulated activities across the spectrum of environmental programs for any given location in California. These activities include hazardous materials and waste, state and federal cleanups, impacted ground and surface waters, and toxic materials

Date of Government Version: 07/23/2018
Date Data Arrived at EDR: 07/25/2018
Date Made Active in Reports: 09/05/2018
Number of Days to Update: 42

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 10/23/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

SAMPLING POINT: Sampling Point ? Public Sites (GEOTRACKER)
Sampling point - public sites

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/09/2018
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Varies

PROD WATER PONDS: Produced Water Ponds Sites (GEOTRACKER)
Produced water ponds sites

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/09/2018
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Varies

MILITARY PRIV SITES: Military Privatized Sites (GEOTRACKER)
Military privatized sites

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/09/2018
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Varies

**EDR HIGH RISK HISTORICAL RECORDS**

***EDR Exclusive Records***

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

**EDR RECOVERED GOVERNMENT ARCHIVES**

***Exclusive Recovered Govt. Archives***

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

**COUNTY RECORDS**

ALAMEDA COUNTY:

CS ALAMEDA: Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 10/05/2018
Date Data Arrived at EDR: 10/10/2018
Date Made Active in Reports: 11/01/2018
Number of Days to Update: 22

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 10/05/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: Semi-Annually

UST ALAMEDA: Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 10/05/2018
Date Data Arrived at EDR: 10/10/2018
Date Made Active in Reports: 11/02/2018
Number of Days to Update: 23

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 10/05/2018
Next Scheduled EDR Contact: 04/24/2047
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA AMADOR: CUPA Facility List

Cupa Facility List

Date of Government Version: 07/01/2018
Date Data Arrived at EDR: 07/24/2018
Date Made Active in Reports: 08/20/2018
Number of Days to Update: 27

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 08/29/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Varies

BUTTE COUNTY:

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA BUTTE: CUPA Facility Listing
Cupa facility list.

Date of Government Version: 04/21/2017
Date Data Arrived at EDR: 04/25/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 106

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 10/05/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA CALVERAS: CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 08/02/2018
Date Data Arrived at EDR: 08/06/2018
Date Made Active in Reports: 08/20/2018
Number of Days to Update: 14

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 09/24/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA COLUSA: CUPA Facility List
Cupa facility list.

Date of Government Version: 05/23/2018
Date Data Arrived at EDR: 05/24/2018
Date Made Active in Reports: 07/13/2018
Number of Days to Update: 50

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

SL CONTRA COSTA: Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 08/20/2018
Date Data Arrived at EDR: 08/21/2018
Date Made Active in Reports: 09/11/2018
Number of Days to Update: 21

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 10/29/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA DEL NORTE: CUPA Facility List
Cupa Facility list

Date of Government Version: 08/16/2018
Date Data Arrived at EDR: 11/06/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 8

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 10/25/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA EL DORADO: CUPA Facility List
CUPA facility list.

Date of Government Version: 09/04/2018
Date Data Arrived at EDR: 09/05/2018
Date Made Active in Reports: 09/18/2018
Number of Days to Update: 13

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 11/16/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA FRESNO: CUPA Resources List
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 10/16/2018
Date Data Arrived at EDR: 10/18/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 27

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 10/15/2018
Next Scheduled EDR Contact: 01/14/2019
Data Release Frequency: Semi-Annually

GLENN COUNTY:

CUPA GLENN: CUPA Facility List
Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 49

Source: Glenn County Air Pollution Control District
Telephone: 830-934-6500
Last EDR Contact: 10/22/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

HUMBOLDT COUNTY:

CUPA HUMBOLDT: CUPA Facility List
CUPA facility list.

Date of Government Version: 07/11/2018
Date Data Arrived at EDR: 07/13/2018
Date Made Active in Reports: 08/22/2018
Number of Days to Update: 40

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 11/19/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Semi-Annually

IMPERIAL COUNTY:

CUPA IMPERIAL: CUPA Facility List
Cupa facility list.

Date of Government Version: 10/22/2018
Date Data Arrived at EDR: 10/25/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 20

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 10/22/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INYO COUNTY:

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA INYO: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/03/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 72

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Varies

KERN COUNTY:

UST KERN: Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 07/20/2018
Date Data Arrived at EDR: 07/25/2018
Date Made Active in Reports: 09/12/2018
Number of Days to Update: 49

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 11/01/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA KINGS: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 08/23/2018
Date Data Arrived at EDR: 08/24/2018
Date Made Active in Reports: 09/18/2018
Number of Days to Update: 25

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Varies

LAKE COUNTY:

CUPA LAKE: CUPA Facility List
Cupa facility list

Date of Government Version: 11/07/2018
Date Data Arrived at EDR: 11/08/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 6

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 10/15/2018
Next Scheduled EDR Contact: 01/28/2019
Data Release Frequency: Varies

LASSEN COUNTY:

CUPA LASSEN: CUPA Facility List
Cupa facility list

Date of Government Version: 10/15/2018
Date Data Arrived at EDR: 10/23/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 22

Source: Lassen County Environmental Health
Telephone: 530-251-8528
Last EDR Contact: 10/22/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

LOS ANGELES COUNTY:

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

AOCONCERN: San Gabriel Valley Areas of Concern
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 09/17/2018
Next Scheduled EDR Contact: 12/31/2018
Data Release Frequency: No Update Planned

HMS LOS ANGELES: HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 09/20/2018
Date Data Arrived at EDR: 10/12/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 35

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 10/05/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: Semi-Annually

LF LOS ANGELES: List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 10/15/2018
Date Data Arrived at EDR: 10/16/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 31

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 10/16/2018
Next Scheduled EDR Contact: 01/28/2019
Data Release Frequency: Varies

LF LOS ANGELES CITY: City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2018
Date Data Arrived at EDR: 05/01/2018
Date Made Active in Reports: 05/14/2018
Number of Days to Update: 13

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 10/15/2018
Next Scheduled EDR Contact: 01/28/2019
Data Release Frequency: Varies

SITE MIT LOS ANGELES: Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 07/01/2018
Date Data Arrived at EDR: 10/16/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 31

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 10/16/2018
Next Scheduled EDR Contact: 01/28/2019
Data Release Frequency: Annually

UST EL SEGUNDO: City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 04/19/2017
Date Made Active in Reports: 05/10/2017
Number of Days to Update: 21

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 10/15/2018
Next Scheduled EDR Contact: 01/28/2019
Data Release Frequency: Semi-Annually

UST LONG BEACH: City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/09/2017
Date Data Arrived at EDR: 03/10/2017
Date Made Active in Reports: 05/03/2017
Number of Days to Update: 54

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 10/22/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Annually

UST TORRANCE: City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 10/02/2018
Date Data Arrived at EDR: 10/05/2018
Date Made Active in Reports: 11/02/2018
Number of Days to Update: 28

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 10/05/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA MADERA: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 08/30/2018
Date Data Arrived at EDR: 09/04/2018
Date Made Active in Reports: 09/19/2018
Number of Days to Update: 15

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Varies

MARIN COUNTY:

UST MARIN: Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 09/26/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/02/2018
Number of Days to Update: 29

Source: Public Works Department Waste Management
Telephone: 415-473-6647
Last EDR Contact: 10/01/2018
Next Scheduled EDR Contact: 01/14/2019
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA MERCED: CUPA Facility List
CUPA facility list.

Date of Government Version: 08/29/2018
Date Data Arrived at EDR: 08/31/2018
Date Made Active in Reports: 09/19/2018
Number of Days to Update: 19

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Varies

MONO COUNTY:

CUPA MONO: CUPA Facility List
CUPA Facility List

Date of Government Version: 07/18/2018
Date Data Arrived at EDR: 09/04/2018
Date Made Active in Reports: 09/19/2018
Number of Days to Update: 15

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 11/26/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Varies

MONTEREY COUNTY:

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA MONTEREY: CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 10/29/2018
Date Data Arrived at EDR: 11/01/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 15

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 10/01/2018
Next Scheduled EDR Contact: 01/14/2019
Data Release Frequency: Varies

NAPA COUNTY:

LUST NAPA: Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 01/09/2017
Date Data Arrived at EDR: 01/11/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 50

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 11/21/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: No Update Planned

UST NAPA: Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 08/27/2018
Date Data Arrived at EDR: 08/28/2018
Date Made Active in Reports: 10/03/2018
Number of Days to Update: 36

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 11/26/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA NEVADA: CUPA Facility List
CUPA facility list.

Date of Government Version: 11/06/2018
Date Data Arrived at EDR: 11/08/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 6

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 10/25/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: Varies

ORANGE COUNTY:

IND_SITE ORANGE: List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 07/13/2018
Date Data Arrived at EDR: 08/08/2018
Date Made Active in Reports: 09/10/2018
Number of Days to Update: 33

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 11/05/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Annually

LUST ORANGE: List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 07/13/2018
Date Data Arrived at EDR: 08/08/2018
Date Made Active in Reports: 09/10/2018
Number of Days to Update: 33

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 11/05/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Quarterly

UST ORANGE: List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 07/13/2018
Date Data Arrived at EDR: 08/06/2018
Date Made Active in Reports: 09/12/2018
Number of Days to Update: 37

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 11/06/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Quarterly

PLACER COUNTY:

MS PLACER: Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 09/04/2018
Date Data Arrived at EDR: 09/06/2018
Date Made Active in Reports: 10/03/2018
Number of Days to Update: 27

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 08/29/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Semi-Annually

PLUMAS COUNTY:

CUPA PLUMAS: CUPA Facility List
Plumas County CUPA Program facilities.

Date of Government Version: 07/19/2018
Date Data Arrived at EDR: 07/25/2018
Date Made Active in Reports: 09/05/2018
Number of Days to Update: 42

Source: Plumas County Environmental Health
Telephone: 530-283-6355
Last EDR Contact: 10/22/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

RIVERSIDE COUNTY:

LUST RIVERSIDE: Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 10/10/2018
Date Data Arrived at EDR: 10/12/2018
Date Made Active in Reports: 10/16/2018
Number of Days to Update: 4

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 09/17/2018
Next Scheduled EDR Contact: 12/31/2018
Data Release Frequency: Quarterly

UST RIVERSIDE: Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 10/10/2018
Date Data Arrived at EDR: 10/12/2018
Date Made Active in Reports: 11/05/2018
Number of Days to Update: 24

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 09/17/2018
Next Scheduled EDR Contact: 12/31/2018
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

CS SACRAMENTO: Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 08/03/2018
Date Data Arrived at EDR: 10/02/2018
Date Made Active in Reports: 11/01/2018
Number of Days to Update: 30

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 10/02/2018
Next Scheduled EDR Contact: 01/14/2019
Data Release Frequency: Quarterly

ML SACRAMENTO: Master Hazardous Materials Facility List

Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 08/23/2018
Date Data Arrived at EDR: 10/02/2018
Date Made Active in Reports: 11/02/2018
Number of Days to Update: 31

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 10/02/2018
Next Scheduled EDR Contact: 01/14/2019
Data Release Frequency: Quarterly

SAN BENITO COUNTY:

CUPA SAN BENITO: CUPA Facility List

Cupa facility list

Date of Government Version: 08/07/2018
Date Data Arrived at EDR: 08/09/2018
Date Made Active in Reports: 09/05/2018
Number of Days to Update: 27

Source: San Benito County Environmental Health
Telephone: N/A
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Varies

SAN BERNARDINO COUNTY:

PERMITS SAN BERNARDINO: Hazardous Material Permits

This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 07/27/2018
Date Data Arrived at EDR: 07/31/2018
Date Made Active in Reports: 09/10/2018
Number of Days to Update: 41

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 11/05/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

HMMD SAN DIEGO: Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 06/04/2018
Date Data Arrived at EDR: 06/06/2018
Date Made Active in Reports: 07/17/2018
Number of Days to Update: 41

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 09/06/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Quarterly

LF SAN DIEGO: Solid Waste Facilities
San Diego County Solid Waste Facilities.

Date of Government Version: 04/18/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 06/19/2018
Number of Days to Update: 56
Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 10/22/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

SAN DIEGO CO LOP: Local Oversight Program Listing
A listing of all LOP release sites that are or were under the County of San Diego's jurisdiction. Included are closed or transferred cases, open cases, and cases that did not have a case type indicated. The cases without a case type are mostly complaints; however, some of them could be LOP cases.

Date of Government Version: 07/17/2018
Date Data Arrived at EDR: 07/24/2018
Date Made Active in Reports: 08/24/2018
Number of Days to Update: 31
Source: Department of Environmental Health
Telephone: 858-505-6874
Last EDR Contact: 10/22/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

SAN DIEGO CO. SAM: Environmental Case Listing
The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24
Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 08/29/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

LUST SAN FRANCISCO: Local Oversite Facilities
A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10
Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 11/01/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Quarterly

UST SAN FRANCISCO: Underground Storage Tank Information
Underground storage tank sites located in San Francisco county.

Date of Government Version: 09/17/2018
Date Data Arrived at EDR: 09/18/2018
Date Made Active in Reports: 10/03/2018
Number of Days to Update: 15
Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 11/01/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

UST SAN JOAQUIN: San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 06/22/2018
Date Data Arrived at EDR: 06/26/2018
Date Made Active in Reports: 07/11/2018
Number of Days to Update: 15
Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 09/17/2018
Next Scheduled EDR Contact: 12/31/2018
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA SAN LUIS OBISPO: CUPA Facility List
Cupa Facility List.

Date of Government Version: 08/20/2018
Date Data Arrived at EDR: 08/21/2018
Date Made Active in Reports: 09/07/2018
Number of Days to Update: 17

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Varies

SAN MATEO COUNTY:

BI SAN MATEO: Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 09/18/2018
Date Data Arrived at EDR: 09/20/2018
Date Made Active in Reports: 11/01/2018
Number of Days to Update: 42

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 09/10/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Annually

LUST SAN MATEO: Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 09/18/2018
Date Data Arrived at EDR: 09/20/2018
Date Made Active in Reports: 10/17/2018
Number of Days to Update: 27

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 09/10/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA SANTA BARBARA: CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Varies

SANTA CLARA COUNTY:

CUPA SANTA CLARA: Cupa Facility List
Cupa facility list

Date of Government Version: 08/17/2018
Date Data Arrived at EDR: 08/22/2018
Date Made Active in Reports: 09/07/2018
Number of Days to Update: 16

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Varies

HIST LUST SANTA CLARA: HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LUST SANTA CLARA: LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13
Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 11/21/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Annually

SAN JOSE HAZMAT: Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 08/01/2018
Date Data Arrived at EDR: 08/06/2018
Date Made Active in Reports: 09/11/2018
Number of Days to Update: 36
Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 11/01/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA SANTA CRUZ: CUPA Facility List
CUPA facility listing.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 90
Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA SHASTA: CUPA Facility List
Cupa Facility List.

Date of Government Version: 06/15/2017
Date Data Arrived at EDR: 06/19/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 51
Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Varies

SOLANO COUNTY:

LUST SOLANO: Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 08/29/2018
Date Data Arrived at EDR: 09/04/2018
Date Made Active in Reports: 10/17/2018
Number of Days to Update: 43
Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 08/29/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Quarterly

UST SOLANO: Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 08/29/2018
Date Data Arrived at EDR: 09/04/2018
Date Made Active in Reports: 10/18/2018
Number of Days to Update: 44
Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 08/29/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Quarterly

SONOMA COUNTY:

CUPA SONOMA: Cupa Facility List
Cupa Facility list

Date of Government Version: 09/24/2018
Date Data Arrived at EDR: 09/25/2018
Date Made Active in Reports: 10/16/2018
Number of Days to Update: 21

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 09/24/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Varies

LUST SONOMA: Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 10/02/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 10/25/2018
Number of Days to Update: 21

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 09/24/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Quarterly

STANISLAUS COUNTY:

CUPA STANISLAUS: CUPA Facility List
Cupa facility list

Date of Government Version: 08/14/2018
Date Data Arrived at EDR: 08/16/2018
Date Made Active in Reports: 08/24/2018
Number of Days to Update: 8

Source: Stanislaus County Department of Ennvironmental Protection
Telephone: 209-525-6751
Last EDR Contact: 10/15/2018
Next Scheduled EDR Contact: 01/28/2019
Data Release Frequency: Varies

SUTTER COUNTY:

UST SUTTER: Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 09/18/2018
Date Data Arrived at EDR: 09/20/2018
Date Made Active in Reports: 10/25/2018
Number of Days to Update: 35

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 09/17/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Semi-Annually

TEHAMA COUNTY:

CUPA TEHAMA: CUPA Facility List
Cupa facilities

Date of Government Version: 07/17/2018
Date Data Arrived at EDR: 08/02/2018
Date Made Active in Reports: 09/07/2018
Number of Days to Update: 36

Source: Tehama County Department of Environmental Health
Telephone: 530-527-8020
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Varies

TRINITY COUNTY:

CUPA TRINITY: CUPA Facility List
Cupa facility list

Date of Government Version: 10/22/2018
Date Data Arrived at EDR: 10/25/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 20

Source: Department of Toxic Substances Control
Telephone: 760-352-0381
Last EDR Contact: 10/22/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

TULARE COUNTY:

CUPA TULARE: CUPA Facility List
Cupa program facilities

Date of Government Version: 09/13/2018
Date Data Arrived at EDR: 09/14/2018
Date Made Active in Reports: 09/19/2018
Number of Days to Update: 5

Source: Tulare County Environmental Health Services Division
Telephone: 559-624-7400
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Varies

TUOLUMNE COUNTY:

CUPA TUOLUMNE: CUPA Facility List
Cupa facility list

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/25/2018
Date Made Active in Reports: 06/25/2018
Number of Days to Update: 61

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 10/22/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

VENTURA COUNTY:

BWT VENTURA: Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 07/02/2018
Date Data Arrived at EDR: 07/26/2018
Date Made Active in Reports: 09/05/2018
Number of Days to Update: 41

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 10/22/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Quarterly

LF VENTURA: Inventory of Illegal Abandoned and Inactive Sites
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 10/01/2018
Next Scheduled EDR Contact: 01/14/2019
Data Release Frequency: Annually

LUST VENTURA: Listing of Underground Tank Cleanup Sites
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 11/07/2018
Next Scheduled EDR Contact: 02/25/2019
Data Release Frequency: Quarterly

MED WASTE VENTURA: Medical Waste Program List
To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 07/02/2018
Date Data Arrived at EDR: 07/26/2018
Date Made Active in Reports: 08/24/2018
Number of Days to Update: 29
Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 10/22/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Quarterly

UST VENTURA: Underground Tank Closed Sites List
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 09/04/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/04/2018
Number of Days to Update: 22
Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 09/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Quarterly

YOLO COUNTY:

UST YOLO: Underground Storage Tank Comprehensive Facility Report
Underground storage tank sites located in Yolo county.

Date of Government Version: 10/15/2018
Date Data Arrived at EDR: 10/19/2018
Date Made Active in Reports: 11/05/2018
Number of Days to Update: 17
Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 10/15/2018
Next Scheduled EDR Contact: 01/14/2019
Data Release Frequency: Annually

YUBA COUNTY:

CUPA YUBA: CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 11/05/2018
Date Data Arrived at EDR: 11/07/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 7
Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 10/25/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: Varies

**OTHER DATABASE(S)**

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 08/10/2018
Date Data Arrived at EDR: 08/10/2018
Date Made Active in Reports: 09/10/2018
Number of Days to Update: 31
Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 02/25/2019
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 07/13/2018
Date Made Active in Reports: 08/01/2018
Number of Days to Update: 19

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 10/09/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 07/01/2018
Date Data Arrived at EDR: 08/01/2018
Date Made Active in Reports: 08/31/2018
Number of Days to Update: 30

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 10/31/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 10/23/2018
Date Made Active in Reports: 11/27/2018
Number of Days to Update: 35

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 10/15/2018
Next Scheduled EDR Contact: 01/28/2019
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 02/23/2018
Date Made Active in Reports: 04/09/2018
Number of Days to Update: 45

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 11/16/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 06/15/2018
Date Made Active in Reports: 07/09/2018
Number of Days to Update: 24

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 09/06/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: PennWell Corporation
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data
Source: PennWell Corporation
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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

**STREET AND ADDRESS INFORMATION**

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# GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

**TARGET PROPERTY ADDRESS**

GINOCHIO - EASTERN PARCELS
BALFOUR ROAD
BRENTWOOD, CA 94513

**TARGET PROPERTY COORDINATES**

| | |
|---|---|
| Latitude (North): | 37.929886 - 37° 55' 47.59'' |
| Longitude (West): | 121.7671 - 121° 46' 1.56'' |
| Universal Tranverse Mercator: | Zone 10 |
| UTM X (Meters): | 608353.1 |
| UTM Y (Meters): | 4198547.0 |
| Elevation: | 221 ft. above sea level |

**USGS TOPOGRAPHIC MAP**

| | |
|---|---|
| Target Property Map: | 5640044 ANTIOCH SOUTH, CA |
| Version Date: | 2012 |
| East Map: | 5640376 BRENTWOOD, CA |
| Version Date: | 2012 |

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

**GROUNDWATER FLOW DIRECTION INFORMATION**

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

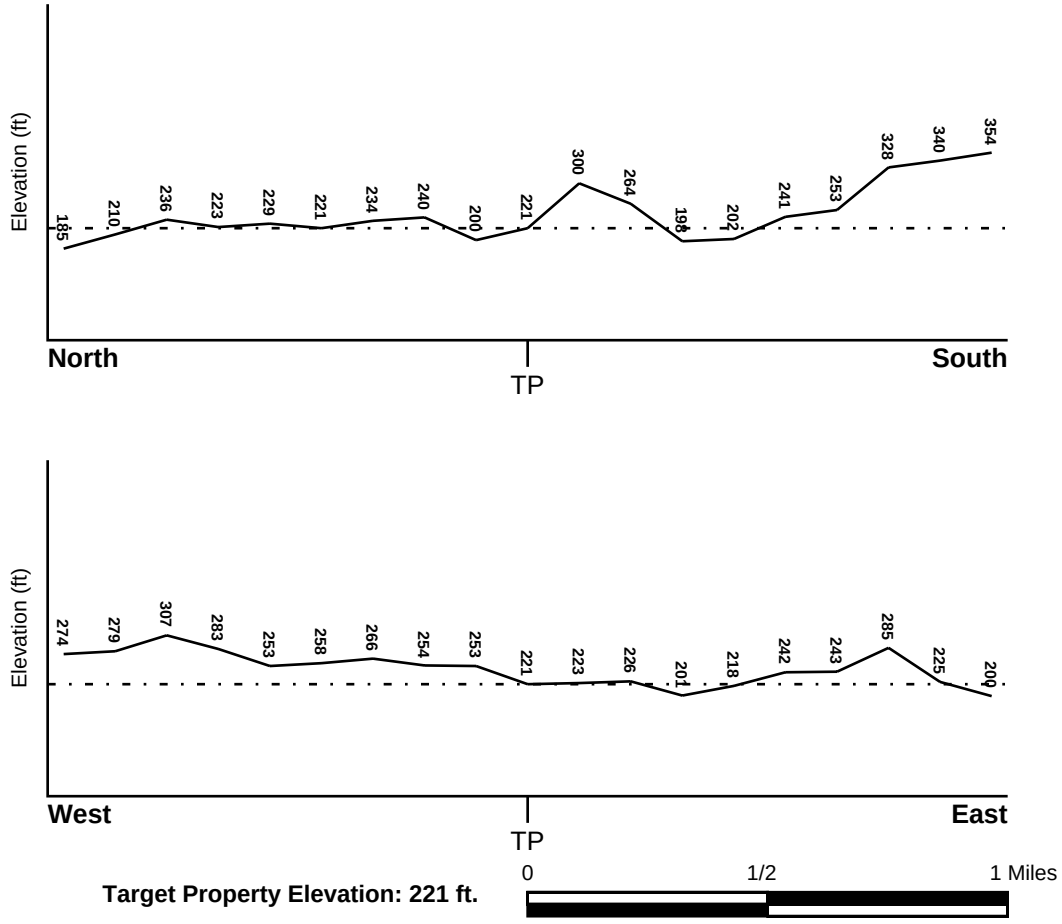
**TOPOGRAPHIC INFORMATION**

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

**TARGET PROPERTY TOPOGRAPHY**

General Topographic Gradient: General ENE

**SURROUNDING TOPOGRAPHY: ELEVATION PROFILES**




Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

## HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

### FEMA FLOOD ZONE

| Flood Plain Panel at Target Property | FEMA Source Type |
|---|---|
| 06013C0345F | FEMA FIRM Flood data |

| Additional Panels in search area: | FEMA Source Type |
|---|---|
| 06013C0335F | FEMA FIRM Flood data |
| 06013C0361F | FEMA FIRM Flood data |

### NATIONAL WETLAND INVENTORY

| NWI Quad at Target Property | NWI Electronic Data Coverage |
|---|---|
| ANTIOCH SOUTH | YES - refer to the Overview Map and Detail Map |

## HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

***Site-Specific Hydrogeological Data*:***

| | |
|---|---|
| Search Radius: | 1.25 miles |
| Status: | Not found |

## AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

| MAP ID | LOCATION FROM TP | GENERAL DIRECTION GROUNDWATER FLOW |
|---|---|---|
| Not Reported | | |

* ©1996 Site−specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

**GROUNDWATER FLOW VELOCITY INFORMATION**

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

**GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY**

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

**ROCK STRATIGRAPHIC UNIT**

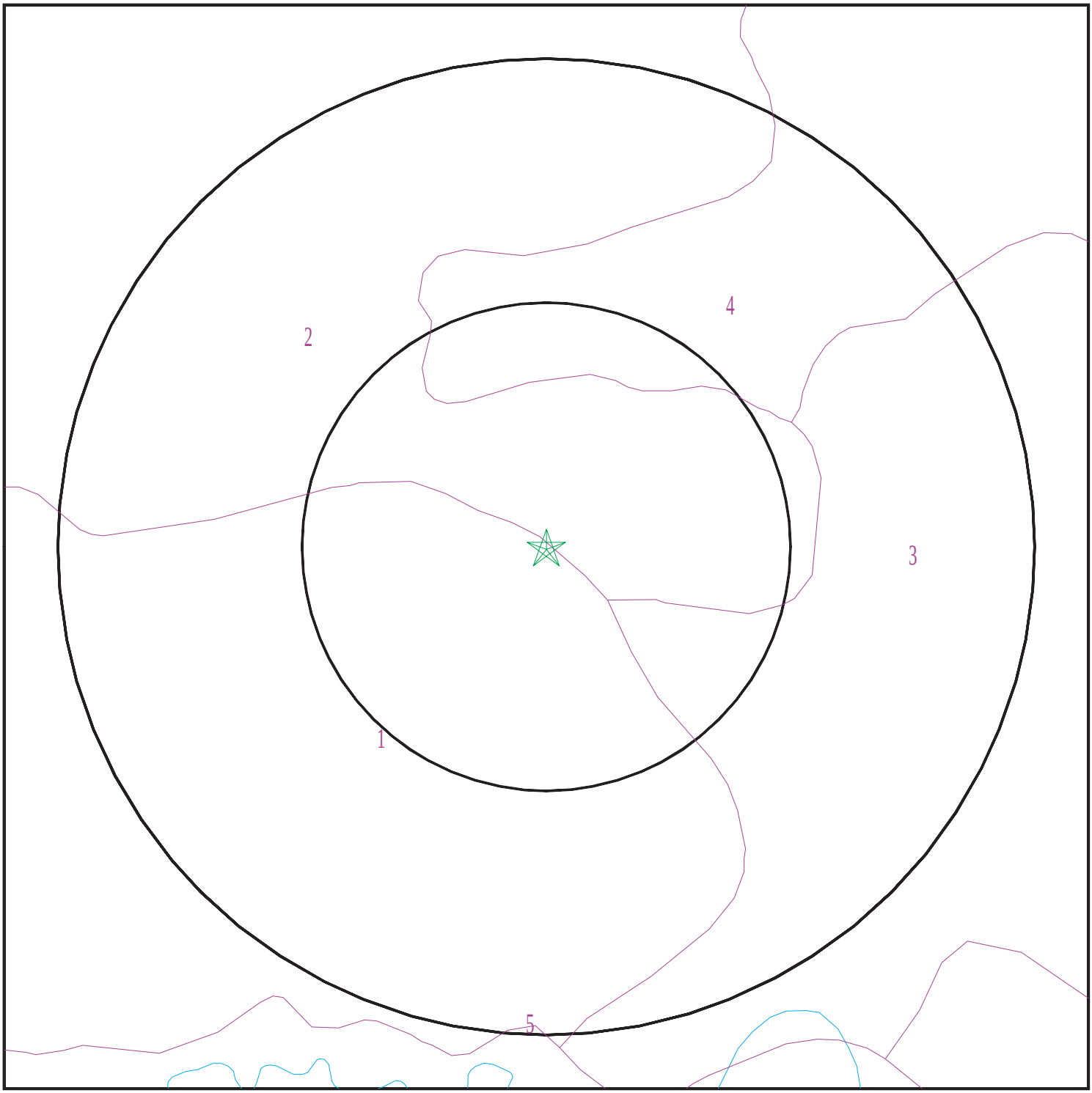
| | |
|---|---|
| Era: | Cenozoic |
| System: | Tertiary |
| Series: | Eocene |
| Code: | Te *(decoded above as Era, System & Series)* |

**GEOLOGIC AGE IDENTIFICATION**

Category: Stratifed Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

# SSURGO SOIL MAP - 05498334.11r




| | | | |
|---|---|---|---|
| SITE NAME: | Ginochio - Eastern Parcels | CLIENT: | Engeo Inc. |
| ADDRESS: | Balfour Road<br>Brentwood CA 94513 | CONTACT: | Ana Lua |
| | | INQUIRY #: | 05498334.11r |
| LAT/LONG: | 37.929886 / 121.7671 | DATE: | November 29, 2018 5:09 pm |

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# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

**DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY**

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

---

**Soil Map ID: 1**

Soil Component Name: ALTAMONT

Soil Surface Texture: clay

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

| Soil Layer Information | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Boundary | | | Classification | | Saturated hydraulic conductivity micro m/sec | Soil Reaction (pH) |
| Layer | Upper | Lower | Soil Texture Class | AASHTO Group | Unified Soil | | |
| 1 | 0 inches | 25 inches | clay | Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils. | Not reported | Max: 1.4 Min: 0 | Max: Min: |
| 2 | 25 inches | 48 inches | clay | Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils. | Not reported | Max: 1.4 Min: 0 | Max: Min: |
| 3 | 48 inches | 51 inches | weathered bedrock | Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils. | Not reported | Max: 1.4 Min: 0 | Max: Min: |

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

**Soil Map ID: 2**

Soil Component Name: BRIONES

Soil Surface Texture: loamy sand

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

| Soil Layer Information | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Boundary | | | Classification | | Saturated hydraulic conductivity micro m/sec | Soil Reaction (pH) |
| Layer | Upper | Lower | Soil Texture Class | AASHTO Group | Unified Soil | | |
| 1 | 0 inches | 12 inches | loamy sand | Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand. | Not reported | Max: 4<br>Min: 1.4 | Max: Min: |
| 2 | 12 inches | 31 inches | loamy sand | Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand. | Not reported | Max: 4<br>Min: 1.4 | Max: Min: |
| 3 | 31 inches | 35 inches | weathered bedrock | Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand. | Not reported | Max: 4<br>Min: 1.4 | Max: Min: |

**Soil Map ID: 3**

Soil Component Name: ALTAMONT

Soil Surface Texture: clay

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

| Soil Layer Information | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Boundary | | | Classification | | Saturated hydraulic conductivity micro m/sec | Soil Reaction (pH) |
| Layer | Upper | Lower | Soil Texture Class | AASHTO Group | Unified Soil | | |
| 1 | 0 inches | 25 inches | clay | Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils. | Not reported | Max: 1.4 Min: 0 | Max: Min: |
| 2 | 25 inches | 48 inches | clay | Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils. | Not reported | Max: 1.4 Min: 0 | Max: Min: |
| 3 | 48 inches | 51 inches | weathered bedrock | Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils. | Not reported | Max: 1.4 Min: 0 | Max: Min: |

**Soil Map ID: 4**

Soil Component Name: PESCADERO

Soil Surface Texture: clay loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Poorly drained

Hydric Status: All hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 168 inches

| Soil Layer Information | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Boundary | | | Classification | | Saturated hydraulic conductivity micro m/sec | Soil Reaction (pH) |
| Layer | Upper | Lower | Soil Texture Class | AASHTO Group | Unified Soil | | |
| 1 | 0 inches | 5 inches | clay loam | Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils. | FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay | Max: 4 Min: 1.4 | Max: 9 Min: 7.9 |
| 2 | 5 inches | 42 inches | clay | Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils. | FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay | Max: 4 Min: 1.4 | Max: 9 Min: 7.9 |
| 3 | 42 inches | 66 inches | stratified silt loam to silty clay | Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils. | FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay | Max: 4 Min: 1.4 | Max: 9 Min: 7.9 |

---

**Soil Map ID: 5**

Soil Component Name: RINCON

Soil Surface Texture: clay loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

| Soil Layer Information | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Boundary | | | Classification | | Saturated hydraulic conductivity micro m/sec | Soil Reaction (pH) |
| Layer | Upper | Lower | Soil Texture Class | AASHTO Group | Unified Soil | | |
| 1 | 0 inches | 11 inches | clay loam | Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils. | COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. | Max: 4<br>Min: 1.4 | Max: 8.4<br>Min: 7.9 |
| 2 | 11 inches | 29 inches | clay | Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils. | COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. | Max: 4<br>Min: 1.4 | Max: 8.4<br>Min: 7.9 |
| 3 | 29 inches | 59 inches | silty clay loam | Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils. | COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. | Max: 4<br>Min: 1.4 | Max: 8.4<br>Min: 7.9 |

**LOCAL / REGIONAL WATER AGENCY RECORDS**

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

**WELL SEARCH DISTANCE INFORMATION**

| DATABASE | SEARCH DISTANCE (miles) |
|---|---|
| Federal USGS | 1.000 |
| Federal FRDS PWS | Nearest PWS within 0.001 miles |
| State Database | 1.000 |

**FEDERAL USGS WELL INFORMATION**

| MAP ID | WELL ID | LOCATION FROM TP |
|---|---|---|
| No Wells Found | | |

**FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION**

| MAP ID | WELL ID | LOCATION FROM TP |
|---|---|---|

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

**FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION**

| MAP ID | WELL ID | LOCATION FROM TP |
|---|---|---|
| No PWS System Found | | |

Note: PWS System location is not always the same as well location.

**STATE DATABASE WELL INFORMATION**

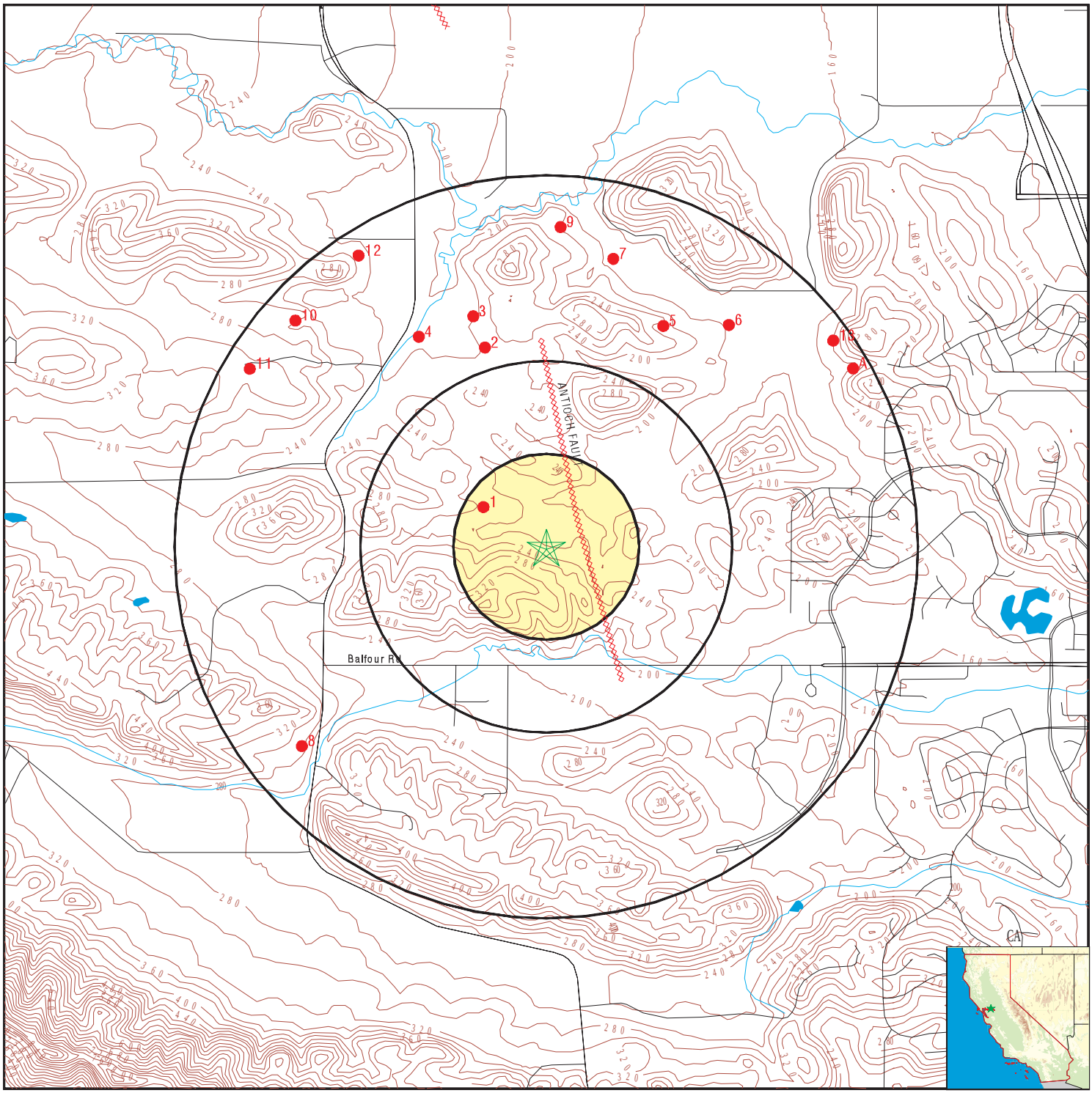
| MAP ID | WELL ID | LOCATION FROM TP |
|---|---|---|
| No Wells Found | | |

**OTHER STATE DATABASE INFORMATION**

**STATE OIL/GAS WELL INFORMATION**

| MAP ID | WELL ID | LOCATION FROM TP |
|---|---|---|
| 1 | CAOG11000232370 | 1/8 - 1/4 Mile WNW |
| 2 | CAOG11000232600 | 1/2 - 1 Mile NNW |
| 3 | CAOG11000232861 | 1/2 - 1 Mile NNW |
| 4 | CAOG11000232857 | 1/2 - 1 Mile NNW |
| 5 | CAOG11000232382 | 1/2 - 1 Mile NNE |
| 6 | CAOG11000232387 | 1/2 - 1 Mile NE |
| 7 | CAOG11000232410 | 1/2 - 1 Mile NNE |
| 8 | CAOG11000232884 | 1/2 - 1 Mile SW |
| 9 | CAOG11000232409 | 1/2 - 1 Mile North |
| 10 | CAOG11000232090 | 1/2 - 1 Mile NW |
| 11 | CAOG11000232369 | 1/2 - 1 Mile WNW |
| 12 | CAOG11000232406 | 1/2 - 1 Mile NNW |
| 13 | CAOG11000232385 | 1/2 - 1 Mile NE |
| A15 | CAOG11000232389 | 1/2 - 1 Mile ENE |
| A14 | CAOG11000232388 | 1/2 - 1 Mile ENE |

# PHYSICAL SETTING SOURCE MAP - 05498334.11r




- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location
- HD Closest Hydrogeological Data
- Oil, gas or related wells

| | | | |
|---|---|---|---|
| SITE NAME: | Ginochio - Eastern Parcels | CLIENT: | Engeo Inc. |
| ADDRESS: | Balfour Road<br>Brentwood CA 94513 | CONTACT: | Ana Lua |
| | | INQUIRY #: | 05498334.11r |
| LAT/LONG: | 37.929886 / 121.7671 | DATE: | November 29, 2018 5:09 pm |

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# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance

Database EDR ID Number

**1**
**WNW**
**1/8 - 1/4 Mile**

**OIL_GAS** **CAOG11000232370**

| | | | |
|---|---|---|---|
| Districtnu: | 6 | Apinumber: | 01300025 |
| Blmwell: | N | Redrillcan: | Not Reported |
| Dryhole: | N | Wellstatus: | P |
| Operatorna: | Occidental Petroleum Corporation | Countyname: | Contra Costa |
| Fieldname: | Brentwood (ABD) | Areaname: | Any Area |
| Section: | 17 | Township: | 01N |
| Range: | 02E | Basemeridi: | MD |
| Elevation: | Not Reported | Locationde: | Not Reported |
| Gissourcec: | hud | Comments: | Status Code 007 |
| Leasename: | Ginochio | Wellnumber: | 85-17 |
| Epawell: | N | Hydraulica: | N |
| Confidenti: | N | Spuddate: | 23-OCT-63 |
| Welldeptha: | 4483 | Redrillfoo: | 0 |
| Abandonedd: | 05-NOV-63 | Completion: | Not Reported |
| Directiona: | Directionally drilled | Gissymbol: | PDH |
| Site id: | CAOG11000232370 | | |

---

**2**
**NNW**
**1/2 - 1 Mile**

**OIL_GAS** **CAOG11000232600**

| | | | |
|---|---|---|---|
| Districtnu: | 6 | Apinumber: | 01320364 |
| Blmwell: | N | Redrillcan: | Not Reported |
| Dryhole: | Y | Wellstatus: | P |
| Operatorna: | Sunset Exploration Inc. | Countyname: | Contra Costa |
| Fieldname: | Brentwood (ABD) | Areaname: | Main |
| Section: | 17 | Township: | 01N |
| Range: | 02E | Basemeridi: | MD |
| Elevation: | 448 | Locationde: | Not Reported |
| Gissourcec: | gps | Comments: | GPS Date 11/18/2005, Status Code 007 |
| Leasename: | Ginochio | Wellnumber: | 3 |
| Epawell: | N | Hydraulica: | N |
| Confidenti: | N | Spuddate: | 26-OCT-05 |
| Welldeptha: | 4553 | Redrillfoo: | 0 |
| Abandonedd: | 02-NOV-05 | Completion: | Not Reported |
| Directiona: | Directionally drilled | Gissymbol: | PDH |
| Site id: | CAOG11000232600 | | |

---

**3**
**NNW**
**1/2 - 1 Mile**

**OIL_GAS** **CAOG11000232861**

| | | | |
|---|---|---|---|
| Districtnu: | 6 | Apinumber: | 01320271 |
| Blmwell: | N | Redrillcan: | Not Reported |
| Dryhole: | N | Wellstatus: | P |
| Operatorna: | Venturini Associates Inc. | Countyname: | Contra Costa |
| Fieldname: | Brentwood (ABD) | Areaname: | West |
| Section: | 17 | Township: | 01N |
| Range: | 02E | Basemeridi: | MD |
| Elevation: | Not Reported | Locationde: | Not Reported |
| Gissourcec: | hud | Comments: | Status Code 014 |
| Leasename: | Ginochio | Wellnumber: | 2 |

| | | | |
|---|---|---|---|
| Epawell: | N | Hydraulica: | N |
| Confidenti: | N | Spuddate: | 05-JUL-87 |
| Welldeptha: | 4300 | Redrillfoo: | 0 |
| Abandonedd: | 22-APR-93 | Completion: | 15-AUG-87 |
| Directiona: | Unknown | Gissymbol: | POG |
| Site id: | CAOG11000232861 | | |

---

**4**
**NNW** **OIL_GAS** **CAOG11000232857**
**1/2 - 1 Mile**

| | | | |
|---|---|---|---|
| Districtnu: | 6 | Apinumber: | 01320268 |
| Blmwell: | N | Redrillcan: | Not Reported |
| Dryhole: | N | Wellstatus: | P |
| Operatorna: | Venturini Associates Inc. | Countyname: | Contra Costa |
| Fieldname: | Brentwood (ABD) | Areaname: | West |
| Section: | 17 | Township: | 01N |
| Range: | 02E | Basemeridi: | MD |
| Elevation: | Not Reported | Locationde: | Not Reported |
| Gissourcec: | hud | Comments: | Status Code 014 |
| Leasename: | Ginochio | Wellnumber: | 1 |
| Epawell: | N | Hydraulica: | N |
| Confidenti: | N | Spuddate: | 31-MAR-87 |
| Welldeptha: | 4337 | Redrillfoo: | 0 |
| Abandonedd: | 26-JUN-90 | Completion: | 24-APR-87 |
| Directiona: | Unknown | Gissymbol: | POG |
| Site id: | CAOG11000232857 | | |

---

**5**
**NNE** **OIL_GAS** **CAOG11000232382**
**1/2 - 1 Mile**

| | | | |
|---|---|---|---|
| Districtnu: | 6 | Apinumber: | 01300037 |
| Blmwell: | N | Redrillcan: | Not Reported |
| Dryhole: | N | Wellstatus: | P |
| Operatorna: | Occidental Petroleum Corporation | Countyname: | Contra Costa |
| Fieldname: | Brentwood (ABD) | Areaname: | West |
| Section: | 16 | Township: | 01N |
| Range: | 02E | Basemeridi: | MD |
| Elevation: | Not Reported | Locationde: | Not Reported |
| Gissourcec: | hud | Comments: | Status Code 006 |
| Leasename: | Ginochio | Wellnumber: | 1-16 |
| Epawell: | N | Hydraulica: | N |
| Confidenti: | N | Spuddate: | 17-MAY-63 |
| Welldeptha: | 4535 | Redrillfoo: | 0 |
| Abandonedd: | 14-MAY-92 | Completion: | Not Reported |
| Directiona: | Unknown | Gissymbol: | POG |
| Site id: | CAOG11000232382 | | |

---

**6**
**NE** **OIL_GAS** **CAOG11000232387**
**1/2 - 1 Mile**

| | | | |
|---|---|---|---|
| Districtnu: | 6 | Apinumber: | 01300042 |
| Blmwell: | N | Redrillcan: | Not Reported |
| Dryhole: | Y | Wellstatus: | P |

| | | | |
|---|---|---|---|
| Operatorna: | Shell Western Exploration & Production Inc. | | |
| Countyname: | Contra Costa | Fieldname: | Brentwood (ABD) |
| Areaname: | Any Area | Section: | 16 |
| Township: | 01N | Range: | 02E |
| Basemeridi: | MD | Elevation: | Not Reported |
| Locationde: | Not Reported | Gissourcec: | hud |
| Comments: | Status Code 006 | Leasename: | Ginochio-Shellenberger |
| Wellnumber: | 21-16 | Epawell: | N |
| Hydraulica: | N | Confidenti: | N |
| Spuddate: | 17-JUL-63 | Welldeptha: | 4780 |
| Redrillfoo: | 0 | Abandonedd: | 29-JUL-63 |
| Completion: | Not Reported | Directiona: | Unknown |
| Gissymbol: | PDH | Site id: | CAOG11000232387 |

---

**7**
**NNE** **OIL_GAS** **CAOG11000232410**
**1/2 - 1 Mile**

| | | | |
|---|---|---|---|
| Districtnu: | 6 | Apinumber: | 01300064 |
| Blmwell: | N | Redrillcan: | Not Reported |
| Dryhole: | Y | Wellstatus: | P |
| Operatorna: | Shell Western Exploration & Production Inc. | | |
| Countyname: | Contra Costa | Fieldname: | Brentwood (ABD) |
| Areaname: | Any Area | Section: | 9 |
| Township: | 01N | Range: | 02E |
| Basemeridi: | MD | Elevation: | Not Reported |
| Locationde: | Not Reported | Gissourcec: | hud |
| Comments: | Status Code 006 | Leasename: | Sullenger |
| Wellnumber: | 33-9 | Epawell: | N |
| Hydraulica: | N | Confidenti: | N |
| Spuddate: | 03-APR-64 | Welldeptha: | 4351 |
| Redrillfoo: | 0 | Abandonedd: | 12-APR-64 |
| Completion: | Not Reported | Directiona: | Unknown |
| Gissymbol: | PDH | Site id: | CAOG11000232410 |

---

**8**
**SW** **OIL_GAS** **CAOG11000232884**
**1/2 - 1 Mile**

| | | | |
|---|---|---|---|
| Districtnu: | 6 | Apinumber: | 01320291 |
| Blmwell: | N | Redrillcan: | Not Reported |
| Dryhole: | Y | Wellstatus: | P |
| Operatorna: | Western Continental Operating Company | | |
| Countyname: | Contra Costa | Fieldname: | Any Field |
| Areaname: | Any Area | Section: | 20 |
| Township: | 01N | Range: | 02E |
| Basemeridi: | MD | Elevation: | 302 |
| Locationde: | Not Reported | Gissourcec: | hud |
| Comments: | Status Code 007 | Leasename: | Deer Valley |
| Wellnumber: | 1-20 | Epawell: | N |
| Hydraulica: | N | Confidenti: | N |
| Spuddate: | 03-AUG-89 | Welldeptha: | 5430 |
| Redrillfoo: | 0 | Abandonedd: | 18-AUG-89 |
| Completion: | Not Reported | Directiona: | Directionally drilled |
| Gissymbol: | PDH | Site id: | CAOG11000232884 |

Map ID
Direction
Distance

Database EDR ID Number

**9**
**North**
**1/2 - 1 Mile**

**OIL_GAS** **CAOG11000232409**

| | | | |
|---|---|---|---|
| Districtnu: | 6 | Apinumber: | 01300062 |
| Blmwell: | N | Redrillcan: | Not Reported |
| Dryhole: | Y | Wellstatus: | P |
| Operatorna: | Shell Western Exploration & Production Inc. | | |
| Countyname: | Contra Costa | Fieldname: | Brentwood (ABD) |
| Areaname: | Any Area | Section: | 9 |
| Township: | 01N | Range: | 02E |
| Basemeridi: | MD | Elevation: | Not Reported |
| Locationde: | Not Reported | Gissourcec: | hud |
| Comments: | Status Code 006 | Leasename: | Sullenger |
| Wellnumber: | 31-9 | Epawell: | N |
| Hydraulica: | N | Confidenti: | N |
| Spuddate: | 16-AUG-63 | Welldeptha: | 5000 |
| Redrillfoo: | 0 | Abandonedd: | 28-AUG-63 |
| Completion: | Not Reported | Directiona: | Unknown |
| Gissymbol: | PDH | Site id: | CAOG11000232409 |

---

**10**
**NW**
**1/2 - 1 Mile**

**OIL_GAS** **CAOG11000232090**

| | | | |
|---|---|---|---|
| Districtnu: | 6 | Apinumber: | 01300019 |
| Blmwell: | N | Redrillcan: | Not Reported |
| Dryhole: | N | Wellstatus: | P |
| Operatorna: | Venturini Associates Inc. | Countyname: | Contra Costa |
| Fieldname: | Brentwood (ABD) | Areaname: | Any Area |
| Section: | 17 | Township: | 01N |
| Range: | 02E | Basemeridi: | MD |
| Elevation: | Not Reported | Locationde: | Not Reported |
| Gissourcec: | hud | Comments: | Status Code 024 |
| Leasename: | Ginochio | Wellnumber: | 41-17 |
| Epawell: | N | Hydraulica: | N |
| Confidenti: | N | Spuddate: | 01-OCT-63 |
| Welldeptha: | 4293 | Redrillfoo: | 0 |
| Abandonedd: | 06-AUG-84 | Completion: | Not Reported |
| Directiona: | Unknown | Gissymbol: | PDG |
| Site id: | CAOG11000232090 | | |

---

**11**
**WNW**
**1/2 - 1 Mile**

**OIL_GAS** **CAOG11000232369**

| | | | |
|---|---|---|---|
| Districtnu: | 6 | Apinumber: | 01300023 |
| Blmwell: | N | Redrillcan: | Not Reported |
| Dryhole: | N | Wellstatus: | P |
| Operatorna: | Sinco Oil Corp. | Countyname: | Contra Costa |
| Fieldname: | Brentwood (ABD) | Areaname: | Any Area |
| Section: | 17 | Township: | 01N |
| Range: | 02E | Basemeridi: | MD |
| Elevation: | Not Reported | Locationde: | Not Reported |
| Gissourcec: | hud | Comments: | Status Code 007 |
| Leasename: | Ginochio | Wellnumber: | 32-17 |

| | | | |
|---|---|---|---|
| Epawell: | N | Hydraulica: | N |
| Confidenti: | N | Spuddate: | 07-FEB-64 |
| Welldeptha: | 4296 | Redrillfoo: | 0 |
| Abandonedd: | 27-FEB-64 | Completion: | Not Reported |
| Directiona: | Directionally drilled | Gissymbol: | PDH |
| Site id: | CAOG11000232369 | | |

---

**12**
**NNW**
**1/2 - 1 Mile**

**OIL_GAS** **CAOG11000232406**

| | | | |
|---|---|---|---|
| Districtnu: | 6 | Apinumber: | 01300059 |
| Blmwell: | N | Redrillcan: | Not Reported |
| Dryhole: | Y | Wellstatus: | P |
| Operatorna: | Shell Western Exploration & Production Inc. | | |
| Countyname: | Contra Costa | Fieldname: | Brentwood (ABD) |
| Areaname: | Any Area | Section: | 8 |
| Township: | 01N | Range: | 02E |
| Basemeridi: | MD | Elevation: | Not Reported |
| Locationde: | Not Reported | Gissourcec: | hud |
| Comments: | Status Code 006 | Leasename: | Qvale |
| Wellnumber: | 41-8 | Epawell: | N |
| Hydraulica: | N | Confidenti: | N |
| Spuddate: | 28-NOV-63 | Welldeptha: | 4500 |
| Redrillfoo: | 0 | Abandonedd: | 06-DEC-63 |
| Completion: | Not Reported | Directiona: | Unknown |
| Gissymbol: | PDH | Site id: | CAOG11000232406 |

---

**13**
**NE**
**1/2 - 1 Mile**

**OIL_GAS** **CAOG11000232385**

| | | | |
|---|---|---|---|
| Districtnu: | 6 | Apinumber: | 01300040 |
| Blmwell: | N | Redrillcan: | Not Reported |
| Dryhole: | N | Wellstatus: | P |
| Operatorna: | Occidental Petroleum Corporation | Countyname: | Contra Costa |
| Fieldname: | Brentwood (ABD) | Areaname: | Main |
| Section: | 16 | Township: | 01N |
| Range: | 02E | Basemeridi: | MD |
| Elevation: | Not Reported | Locationde: | Not Reported |
| Gissourcec: | hud | Comments: | Status Code 116 |
| Leasename: | Ginochio-Shellenberger | Wellnumber: | 2-16 |
| Epawell: | N | Hydraulica: | N |
| Confidenti: | N | Spuddate: | 01-DEC-62 |
| Welldeptha: | 4746 | Redrillfoo: | 0 |
| Abandonedd: | 17-DEC-93 | Completion: | Not Reported |
| Directiona: | Unknown | Gissymbol: | PWD |
| Site id: | CAOG11000232385 | | |

---

**A15**
**ENE**
**1/2 - 1 Mile**

**OIL_GAS** **CAOG11000232389**

| | | | |
|---|---|---|---|
| Districtnu: | 6 | Apinumber: | 01300043 |
| Blmwell: | N | Redrillcan: | Not Reported |
| Dryhole: | N | Wellstatus: | P |

| | | | |
|---|---|---|---|
| Operatorna: | Occidental Petroleum Corporation | Countyname: | Contra Costa |
| Fieldname: | Brentwood (ABD) | Areaname: | Main |
| Section: | 16 | Township: | 01N |
| Range: | 02E | Basemeridi: | MD |
| Elevation: | Not Reported | Locationde: | Not Reported |
| Gissourcec: | hud | Comments: | Status Code 116 |
| Leasename: | Ginochio-Shellenberger | Wellnumber: | 22-16 |
| Epawell: | N | Hydraulica: | N |
| Confidenti: | N | Spuddate: | 11-SEP-63 |
| Welldeptha: | 4500 | Redrillfoo: | 0 |
| Abandonedd: | 01-OCT-91 | Completion: | Not Reported |
| Directiona: | Unknown | Gissymbol: | PWD |
| Site id: | CAOG11000232389 | | |

---

**A14**
**ENE**
**1/2 - 1 Mile**

**OIL_GAS** **CAOG11000232388**

| | | | |
|---|---|---|---|
| Districtnu: | 6 | Apinumber: | 01300043 |
| Blmwell: | N | Redrillcan: | Not Reported |
| Dryhole: | N | Wellstatus: | P |
| Operatorna: | Occidental Petroleum Corporation | Countyname: | Contra Costa |
| Fieldname: | Brentwood (ABD) | Areaname: | Main |
| Section: | 16 | Township: | 01N |
| Range: | 02E | Basemeridi: | MD |
| Elevation: | Not Reported | Locationde: | Not Reported |
| Gissourcec: | hud | Comments: | Status Code 116 |
| Leasename: | Ginochio-Shellenberger | Wellnumber: | 22-16 |
| Epawell: | N | Hydraulica: | N |
| Confidenti: | N | Spuddate: | 11-SEP-63 |
| Welldeptha: | 4500 | Redrillfoo: | 0 |
| Abandonedd: | 01-OCT-91 | Completion: | Not Reported |
| Directiona: | Unknown | Gissymbol: | PWD |
| Site id: | CAOG11000232388 | | |

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
# RADON

**AREA RADON INFORMATION**

State Database: CA Radon

Radon Test Results

| Zipcode | Num Tests | > 4 pCi/L |
|---|---|---|
| 94513 | 5 | 0 |

Federal EPA Radon Zone for CONTRA COSTA County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

---

Federal Area Radon Information for CONTRA COSTA COUNTY, CA

Number of sites tested: 55

| Area | Average Activity | % <4 pCi/L | % 4-20 pCi/L | % >20 pCi/L |
|---|---|---|---|---|
| Living Area - 1st Floor | 0.760 pCi/L | 100% | 0% | 0% |
| Living Area - 2nd Floor | 0.300 pCi/L | 100% | 0% | 0% |
| Basement | 0.525 pCi/L | 100% | 0% | 0% |

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

## HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

## HYDROGEOLOGIC INFORMATION

AQUIFLOW$^{R}$ Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

## GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

## OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: Department of Conservation
Telephone: 916-323-1779
Oil and Gas well locations in the state.

RADON

State Database: CA Radon
Source: Department of Health Services
Telephone: 916-324-2208
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

**STREET AND ADDRESS INFORMATION**

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**Ginochio - Western Parcels**
Balfour Road
Brentwood, CA 94513

Inquiry Number: 05498334.2r
November 29, 2018

# The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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**GEOCHECK ADDENDUM**

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***Thank you for your business.***
Please contact EDR at 1-800-352-0050
with any questions or comments.


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# EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

## TARGET PROPERTY INFORMATION

### ADDRESS

BALFOUR ROAD
BRENTWOOD, CA 94513

### COORDINATES

| | |
|---|---|
| Latitude (North): | 37.9311050 - 37° 55' 51.97'' |
| Longitude (West): | 121.7731940 - 121° 46' 23.49'' |
| Universal Tranverse Mercator: | Zone 10 |
| UTM X (Meters): | 607815.7 |
| UTM Y (Meters): | 4198675.0 |
| Elevation: | 252 ft. above sea level |

### USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

| | |
|---|---|
| Target Property Map: | 5640044 ANTIOCH SOUTH, CA |
| Version Date: | 2012 |
| East Map: | 5640376 BRENTWOOD, CA |
| Version Date: | 2012 |

### AERIAL PHOTOGRAPHY IN THIS REPORT

| | |
|---|---|
| Portions of Photo from: | 20140606 |
| Source: | USDA |

## MAPPED SITES SUMMARY

Target Property Address:
BALFOUR ROAD
BRENTWOOD, CA 94513

Click on Map ID to see full detail.

| MAP ID | SITE NAME | ADDRESS | DATABASE ACRONYMS | RELATIVE ELEVATION | DIST (ft. & mi.) DIRECTION |
|---|---|---|---|---|---|
| A1 | BALFOUR ROAD CULVERT | | CIWQS | Lower | 1 ft. |
| A2 | BALFOUR ROAD CULVERT | | CERS | Lower | 1 ft. |

# EXECUTIVE SUMMARY

## TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

## DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

## STANDARD ENVIRONMENTAL RECORDS

### *Federal NPL site list*

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

### *Federal Delisted NPL site list*

Delisted NPL ---------- National Priority List Deletions

### *Federal CERCLIS list*

FEDERAL FACILITY ---------- Federal Facility Site Information listing
SEMS ---------- Superfund Enterprise Management System

### *Federal CERCLIS NFRAP site list*

SEMS-ARCHIVE ---------- Superfund Enterprise Management System Archive

### *Federal RCRA CORRACTS facilities list*

CORRACTS ---------- Corrective Action Report

### *Federal RCRA non-CORRACTS TSD facilities list*

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

### *Federal RCRA generators list*

RCRA-LQG ---------- RCRA - Large Quantity Generators
RCRA-SQG ---------- RCRA - Small Quantity Generators
RCRA-CESQG ---------- RCRA - Conditionally Exempt Small Quantity Generator

### *Federal institutional controls / engineering controls registries*

LUCIS ---------- Land Use Control Information System
US ENG CONTROLS ---------- Engineering Controls Sites List

US INST CONTROL ---------- Sites with Institutional Controls

***Federal ERNS list***

ERNS ---------- Emergency Response Notification System

***State- and tribal - equivalent NPL***

RESPONSE ---------- State Response Sites

***State- and tribal - equivalent CERCLIS***

ENVIROSTOR ---------- EnviroStor Database

***State and tribal landfill and/or solid waste disposal site lists***

SWF/LF ---------- Solid Waste Information System

***State and tribal leaking storage tank lists***

LUST ---------- Geotracker's Leaking Underground Fuel Tank Report
INDIAN LUST ---------- Leaking Underground Storage Tanks on Indian Land
CPS-SLIC ---------- Statewide SLIC Cases

***State and tribal registered storage tank lists***

FEMA UST ---------- Underground Storage Tank Listing
UST ---------- Active UST Facilities
AST ---------- Aboveground Petroleum Storage Tank Facilities
INDIAN UST ---------- Underground Storage Tanks on Indian Land

***State and tribal voluntary cleanup sites***

INDIAN VCP ---------- Voluntary Cleanup Priority Listing
VCP ---------- Voluntary Cleanup Program Properties

***State and tribal Brownfields sites***

BROWNFIELDS ---------- Considered Brownfieds Sites Listing

**ADDITIONAL ENVIRONMENTAL RECORDS**

***Local Brownfield lists***

US BROWNFIELDS ---------- A Listing of Brownfields Sites

***Local Lists of Landfill / Solid Waste Disposal Sites***

WMUDS/SWAT ---------- Waste Management Unit Database
SWRCY ---------- Recycler Database
HAULERS ---------- Registered Waste Tire Haulers Listing
INDIAN ODI ---------- Report on the Status of Open Dumps on Indian Lands
ODI ---------- Open Dump Inventory
DEBRIS REGION 9 ---------- Torres Martinez Reservation Illegal Dump Site Locations

IHS OPEN DUMPS ---- Open Dumps on Indian Land

***Local Lists of Hazardous waste / Contaminated Sites***

US HIST CDL ---- Delisted National Clandestine Laboratory Register
HIST Cal-Sites ---- Historical Calsites Database
SCH ---- School Property Evaluation Program
CDL ---- Clandestine Drug Labs
Toxic Pits ---- Toxic Pits Cleanup Act Sites
US CDL ---- National Clandestine Laboratory Register
CERS HAZ WASTE ---- CERS HAZ WASTE

***Local Lists of Registered Storage Tanks***

SWEEPS UST ---- SWEEPS UST Listing
HIST UST ---- Hazardous Substance Storage Container Database
CA FID UST ---- Facility Inventory Database
CERS TANKS ---- California Environmental Reporting System (CERS) Tanks

***Local Land Records***

LIENS ---- Environmental Liens Listing
LIENS 2 ---- CERCLA Lien Information
DEED ---- Deed Restriction Listing

***Records of Emergency Release Reports***

HMIRS ---- Hazardous Materials Information Reporting System
CHMIRS ---- California Hazardous Material Incident Report System
LDS ---- Land Disposal Sites Listing
MCS ---- Military Cleanup Sites Listing
SPILLS 90 ---- SPILLS 90 data from FirstSearch

***Other Ascertainable Records***

RCRA NonGen / NLR ---- RCRA - Non Generators / No Longer Regulated
FUDS ---- Formerly Used Defense Sites
DOD ---- Department of Defense Sites
SCRD DRYCLEANERS ---- State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR ---- Financial Assurance Information
EPA WATCH LIST ---- EPA WATCH LIST
2020 COR ACTION ---- 2020 Corrective Action Program List
TSCA ---- Toxic Substances Control Act
TRIS ---- Toxic Chemical Release Inventory System
SSTS ---- Section 7 Tracking Systems
ROD ---- Records Of Decision
RMP ---- Risk Management Plans
RAATS ---- RCRA Administrative Action Tracking System
PRP ---- Potentially Responsible Parties
PADS ---- PCB Activity Database System
ICIS ---- Integrated Compliance Information System
FTTS ---- FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS ---- Material Licensing Tracking System
COAL ASH DOE ---- Steam-Electric Plant Operation Data

| | |
|---|---|
| COAL ASH EPA | Coal Combustion Residues Surface Impoundments List |
| PCB TRANSFORMER | PCB Transformer Registration Database |
| RADINFO | Radiation Information Database |
| HIST FTTS | FIFRA/TSCA Tracking System Administrative Case Listing |
| DOT OPS | Incident and Accident Data |
| CONSENT | Superfund (CERCLA) Consent Decrees |
| INDIAN RESERV | Indian Reservations |
| FUSRAP | Formerly Utilized Sites Remedial Action Program |
| UMTRA | Uranium Mill Tailings Sites |
| LEAD SMELTERS | Lead Smelter Sites |
| US AIRS | Aerometric Information Retrieval System Facility Subsystem |
| US MINES | Mines Master Index File |
| ABANDONED MINES | Abandoned Mines |
| FINDS | Facility Index System/Facility Registry System |
| UXO | Unexploded Ordnance Sites |
| ECHO | Enforcement & Compliance History Information |
| DOCKET HWC | Hazardous Waste Compliance Docket Listing |
| FUELS PROGRAM | EPA Fuels Program Registered Listing |
| CA BOND EXP. PLAN | Bond Expenditure Plan |
| Cortese | "Cortese" Hazardous Waste & Substances Sites List |
| CUPA Listings | CUPA Resources List |
| DRYCLEANERS | Cleaner Facilities |
| EMI | Emissions Inventory Data |
| ENF | Enforcement Action Listing |
| Financial Assurance | Financial Assurance Information Listing |
| HAZNET | Facility and Manifest Data |
| ICE | ICE |
| HIST CORTESE | Hazardous Waste & Substance Site List |
| HWP | EnviroStor Permitted Facilities Listing |
| HWT | Registered Hazardous Waste Transporter Database |
| MINES | Mines Site Location Listing |
| MWMP | Medical Waste Management Program Listing |
| NPDES | NPDES Permits Listing |
| PEST LIC | Pesticide Regulation Licenses Listing |
| PROC | Certified Processors Database |
| Notify 65 | Proposition 65 Records |
| CONTRA COSTA CO. SITE LIST | Site List |
| UIC | UIC Listing |
| WASTEWATER PITS | Oil Wastewater Pits Listing |
| WDS | Waste Discharge System |
| WIP | Well Investigation Program Case List |
| SAMPLING POINT | SAMPLING POINT (GEOTRACKER) |
| OTHER OIL GAS | OTHER OIL & GAS (GEOTRACKER) |
| MILITARY PRIV SITES | MILITARY PRIV SITES (GEOTRACKER) |
| NON-CASE INFO | NON-CASE INFO (GEOTRACKER) |
| UIC GEO | UIC GEO (GEOTRACKER) |
| PROJECT | PROJECT (GEOTRACKER) |
| WDR | Waste Discharge Requirements Listing |
| WELL STIM PROJ | Well Stimulation Project (GEOTRACKER) |
| PROD WATER PONDS | PROD WATER PONDS (GEOTRACKER) |

**EDR HIGH RISK HISTORICAL RECORDS**

***EDR Exclusive Records***

| | |
|---|---|
| EDR MGP | EDR Proprietary Manufactured Gas Plants |

# EXECUTIVE SUMMARY

EDR Hist Auto---------- EDR Exclusive Historical Auto Stations
EDR Hist Cleaner---------- EDR Exclusive Historical Cleaners

**EDR RECOVERED GOVERNMENT ARCHIVES**

***Exclusive Recovered Govt. Archives***

RGA LF---------- Recovered Government Archive Solid Waste Facilities List
RGA LUST---------- Recovered Government Archive Leaking Underground Storage Tank

**SURROUNDING SITES: SEARCH RESULTS**

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

**ADDITIONAL ENVIRONMENTAL RECORDS**

***Other Ascertainable Records***

CIWQS: The California Integrated Water Quality System (CIWQS) is a computer system used by the State and Regional Water Quality Control Boards to track information about places of environmental interest, manage permits and other orders, track inspections, and manage violations and enforcement activities.

A review of the CIWQS list, as provided by EDR, and dated 09/04/2018 has revealed that there is 1 CIWQS site within approximately 0.001 miles of the target property.

| Lower Elevation | Address | Direction / Distance | Map ID | Page |
|---|---|---|---|---|
| BALFOUR ROAD CULVERT | | 0 - 1/8 (0.000 mi.) | A1 | 8 |

CERS: The CalEPA Regulated Site Portal database combines data about environmentally regulated sites and facilities in California into a single database. It combines data from a variety of state and federal databases, and provides an overview of regulated activities across the spectrum of environmental programs for any given location in California. These activities include hazardous materials and waste, state and federal cleanups, impacted ground and surface waters, and toxic materials

A review of the CERS list, as provided by EDR, and dated 07/23/2018 has revealed that there is 1 CERS site within approximately 0.001 miles of the target property.

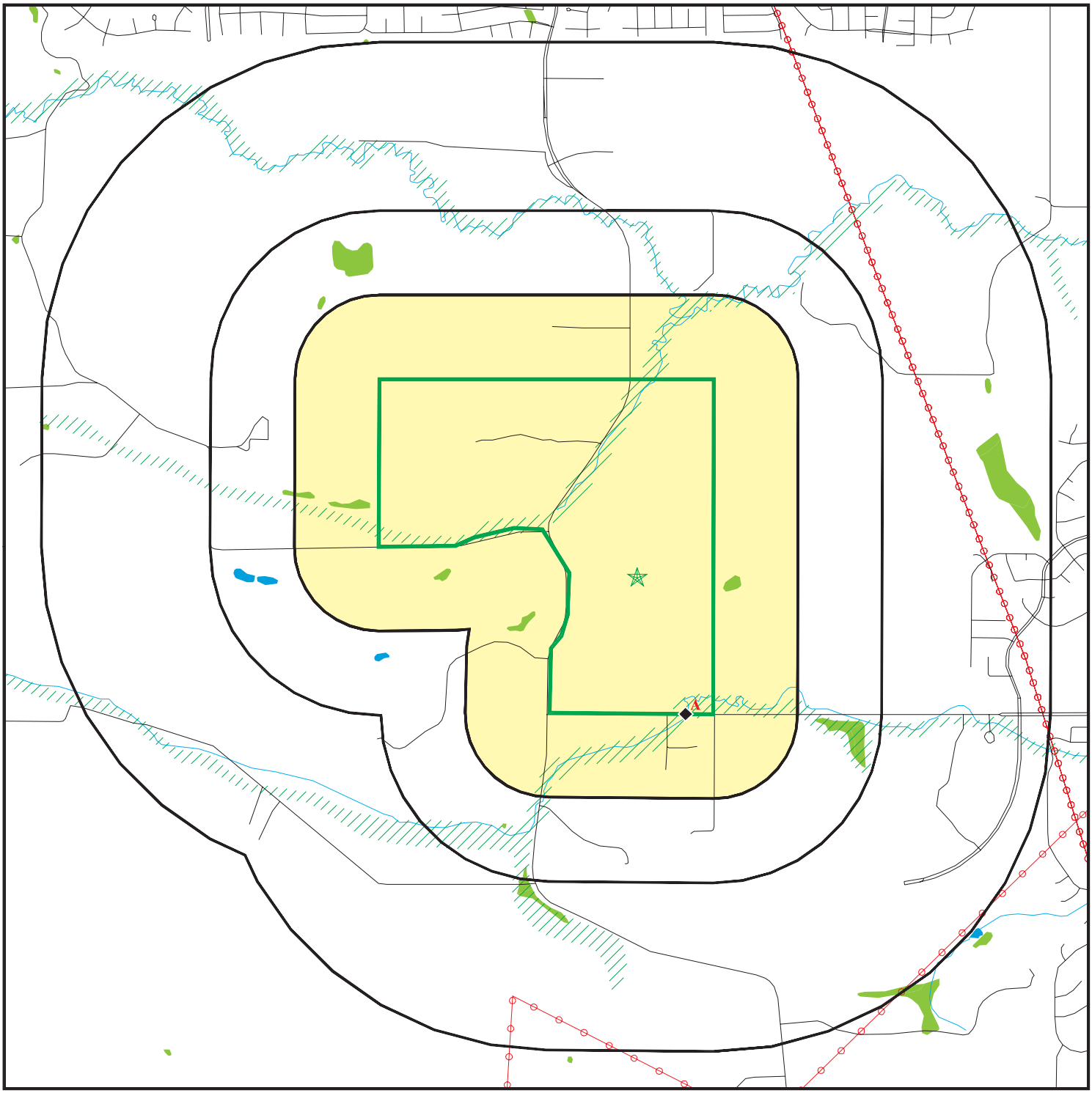
| Lower Elevation | Address | Direction / Distance | Map ID | Page |
|---|---|---|---|---|
| BALFOUR ROAD CULVERT | | 0 - 1/8 (0.000 mi.) | A2 | 8 |

# EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 3 records.

| Site Name | Database(s) |
|---|---|
| SANTA FE PACIFIC PIPELINE PARTNERS | SEMS-ARCHIVE |
| VENTURINI LEASE SITE (BRENTWOOD OI | CPS-SLIC |
| OXY USA INC. (BRENTWOOD OIL & GAS | CPS-SLIC |

# OVERVIEW MAP - 05498334.2R



Target Property
Sites at elevations higher than or equal to the target property
Sites at elevations lower than the target property
Manufactured Gas Plants
National Priority List Sites
Dept. Defense Sites

0 1/4 1/2 1 Miles

Indian Reservations BIA
Power transmission lines
100-year flood zone
500-year flood zone
National Wetland Inventory
State Wetlands

Areas of Concern

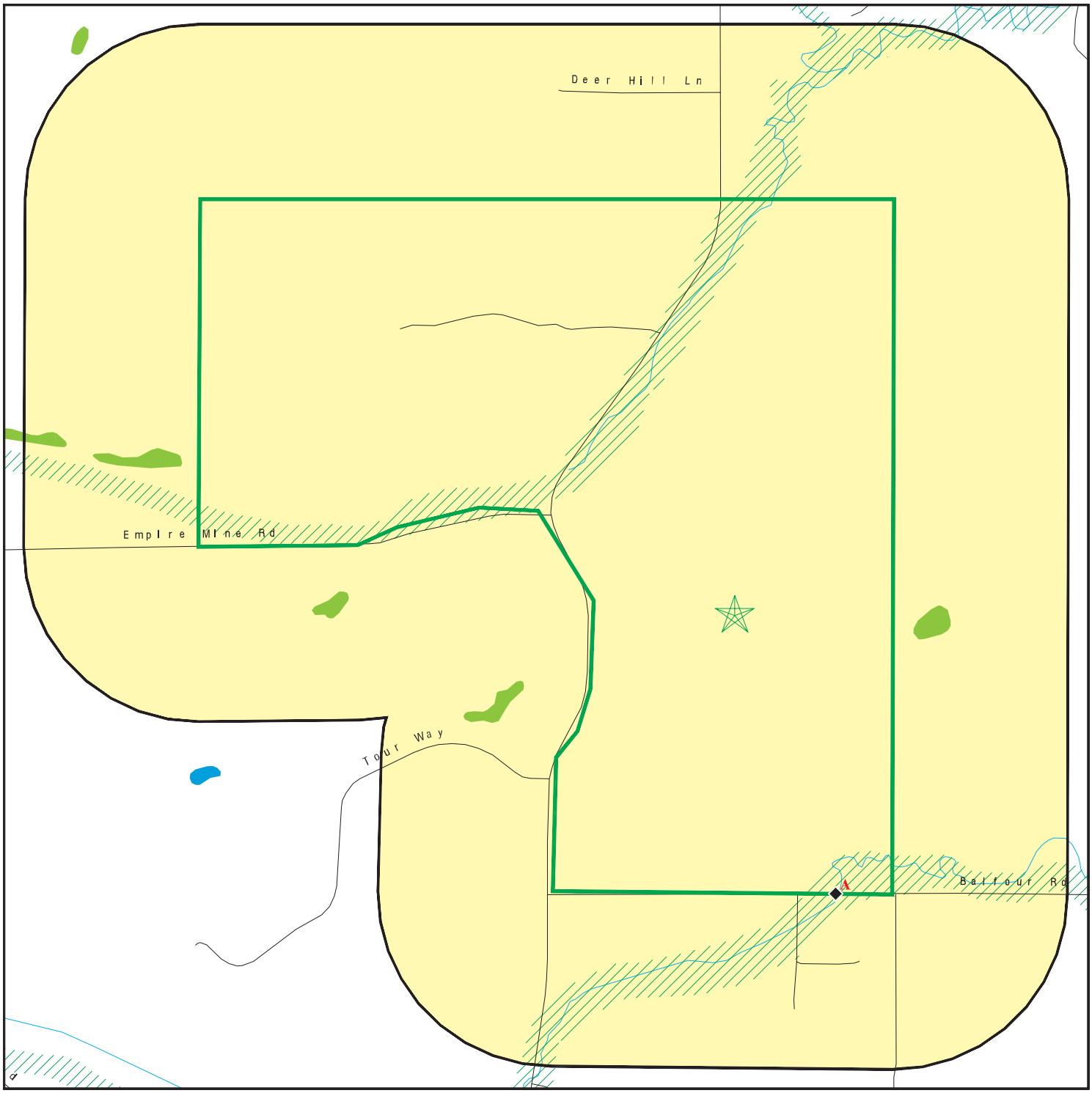
N

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

| | | | |
|---|---|---|---|
| SITE NAME: | Ginochio - Western Parcels | CLIENT: | Engeo Inc. |
| ADDRESS: | Balfour Road<br>Brentwood CA 94513 | CONTACT: | Ana Lua |
| | | INQUIRY #: | 05498334.2r |
| LAT/LONG: | 37.931105 / 121.773194 | DATE: | November 29, 2018 5:03 pm |

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# DETAIL MAP - 05498334.2R




0 1/8 1/4 1/2 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

| | | | |
|---|---|---|---|
| SITE NAME: | Ginochio - Western Parcels | CLIENT: | Engeo Inc. |
| ADDRESS: | Balfour Road<br>Brentwood CA 94513 | CONTACT: | Ana Lua |
| | | INQUIRY #: | 05498334.2r |
| LAT/LONG: | 37.931105 / 121.773194 | DATE: | November 29, 2018 5:07 pm |

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# MAP FINDINGS SUMMARY

| Database | Search Distance (Miles) | Target Property | < 1/8 | 1/8 - 1/4 | 1/4 - 1/2 | 1/2 - 1 | > 1 | Total Plotted |
|---|---|---|---|---|---|---|---|---|
| **STANDARD ENVIRONMENTAL RECORDS** | | | | | | | | |
| ***Federal NPL site list*** | | | | | | | | |
| NPL | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| Proposed NPL | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| NPL LIENS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| ***Federal Delisted NPL site list*** | | | | | | | | |
| Delisted NPL | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| ***Federal CERCLIS list*** | | | | | | | | |
| FEDERAL FACILITY | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| SEMS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Federal CERCLIS NFRAP site list*** | | | | | | | | |
| SEMS-ARCHIVE | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Federal RCRA CORRACTS facilities list*** | | | | | | | | |
| CORRACTS | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| ***Federal RCRA non-CORRACTS TSD facilities list*** | | | | | | | | |
| RCRA-TSDF | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Federal RCRA generators list*** | | | | | | | | |
| RCRA-LQG | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| RCRA-SQG | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| RCRA-CESQG | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| ***Federal institutional controls / engineering controls registries*** | | | | | | | | |
| LUCIS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| US ENG CONTROLS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| US INST CONTROL | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Federal ERNS list*** | | | | | | | | |
| ERNS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| ***State- and tribal - equivalent NPL*** | | | | | | | | |
| RESPONSE | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| ***State- and tribal - equivalent CERCLIS*** | | | | | | | | |
| ENVIROSTOR | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| ***State and tribal landfill and/or solid waste disposal site lists*** | | | | | | | | |
| SWF/LF | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***State and tribal leaking storage tank lists*** | | | | | | | | |
| LUST | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |

# MAP FINDINGS SUMMARY

| Database | Search Distance (Miles) | Target Property | < 1/8 | 1/8 - 1/4 | 1/4 - 1/2 | 1/2 - 1 | > 1 | Total Plotted |
|---|---|---|---|---|---|---|---|---|
| INDIAN LUST | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| CPS-SLIC | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***State and tribal registered storage tank lists*** | | | | | | | | |
| FEMA UST | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| UST | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| AST | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| INDIAN UST | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| ***State and tribal voluntary cleanup sites*** | | | | | | | | |
| INDIAN VCP | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| VCP | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***State and tribal Brownfields sites*** | | | | | | | | |
| BROWNFIELDS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| **ADDITIONAL ENVIRONMENTAL RECORDS** | | | | | | | | |
| ***Local Brownfield lists*** | | | | | | | | |
| US BROWNFIELDS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Local Lists of Landfill / Solid Waste Disposal Sites*** | | | | | | | | |
| WMUDS/SWAT | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| SWRCY | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| HAULERS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| INDIAN ODI | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ODI | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| DEBRIS REGION 9 | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| IHS OPEN DUMPS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Local Lists of Hazardous waste / Contaminated Sites*** | | | | | | | | |
| US HIST CDL | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| HIST Cal-Sites | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| SCH | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| CDL | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| Toxic Pits | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| US CDL | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| CERS HAZ WASTE | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| ***Local Lists of Registered Storage Tanks*** | | | | | | | | |
| SWEEPS UST | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| HIST UST | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| CA FID UST | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| CERS TANKS | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| ***Local Land Records*** | | | | | | | | |
| LIENS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| LIENS 2 | 0.001 | | 0 | NR | NR | NR | NR | 0 |

# MAP FINDINGS SUMMARY

| Database | Search Distance (Miles) | Target Property | < 1/8 | 1/8 - 1/4 | 1/4 - 1/2 | 1/2 - 1 | > 1 | Total Plotted |
|---|---|---|---|---|---|---|---|---|
| DEED | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Records of Emergency Release Reports*** | | | | | | | | |
| HMIRS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| CHMIRS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| LDS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| MCS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| SPILLS 90 | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| ***Other Ascertainable Records*** | | | | | | | | |
| RCRA NonGen / NLR | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| FUDS | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| DOD | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| SCRD DRYCLEANERS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| US FIN ASSUR | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| EPA WATCH LIST | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| 2020 COR ACTION | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| TSCA | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| TRIS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| SSTS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| ROD | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| RMP | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| RAATS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| PRP | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| PADS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| ICIS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| FTTS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| MLTS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| COAL ASH DOE | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| COAL ASH EPA | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| PCB TRANSFORMER | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| RADINFO | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| HIST FTTS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| DOT OPS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| CONSENT | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| INDIAN RESERV | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| FUSRAP | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| UMTRA | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| LEAD SMELTERS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| US AIRS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| US MINES | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| ABANDONED MINES | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| FINDS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| UXO | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| ECHO | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| DOCKET HWC | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| FUELS PROGRAM | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| CA BOND EXP. PLAN | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| Cortese | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| CUPA Listings | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| DRYCLEANERS | 0.250 | | 0 | 0 | NR | NR | NR | 0 |

# MAP FINDINGS SUMMARY

| Database | Search Distance (Miles) | Target Property | < 1/8 | 1/8 - 1/4 | 1/4 - 1/2 | 1/2 - 1 | > 1 | Total Plotted |
|---|---|---|---|---|---|---|---|---|
| EMI | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| ENF | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| Financial Assurance | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| HAZNET | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| ICE | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| HIST CORTESE | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| HWP | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| HWT | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| MINES | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| MWMP | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| NPDES | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| PEST LIC | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| PROC | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| Notify 65 | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| CONTRA COSTA CO. SITE LIST | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| UIC | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| WASTEWATER PITS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| WDS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| WIP | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| CIWQS | 0.001 | | 1 | NR | NR | NR | NR | 1 |
| SAMPLING POINT | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| OTHER OIL GAS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| CERS | 0.001 | | 1 | NR | NR | NR | NR | 1 |
| MILITARY PRIV SITES | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| NON-CASE INFO | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| UIC GEO | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| PROJECT | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| WDR | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| WELL STIM PROJ | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| PROD WATER PONDS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| **EDR HIGH RISK HISTORICAL RECORDS** | | | | | | | | |
| ***EDR Exclusive Records*** | | | | | | | | |
| EDR MGP | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| EDR Hist Auto | 0.125 | | 0 | NR | NR | NR | NR | 0 |
| EDR Hist Cleaner | 0.125 | | 0 | NR | NR | NR | NR | 0 |
| **EDR RECOVERED GOVERNMENT ARCHIVES** | | | | | | | | |
| ***Exclusive Recovered Govt. Archives*** | | | | | | | | |
| RGA LF | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| RGA LUST | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| - Totals -- | | 0 | 2 | 0 | 0 | 0 | 0 | 2 |

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

**A1** **BALFOUR ROAD CULVERT REPAIR** **CIWQS** **S121622227**
**N/A**

**< 1/8** **CONTRA COSTA (County), CA**
**1 ft.**

**Site 1 of 2 in cluster A**

**Relative:** CIWQS:
**Lower**

| | |
|---|---|
| **Actual:** Agency: | Contra Costa County PWD |
| **202 ft.** Agency Address: | 255 Glacier Drive, Martinez, CA 94553 |
| Place/Project Type: | Dredge/Fill Site |
| SIC/NAICS: | Not reported |
| Region: | 5S |
| Program: | CERFILLEXC |
| Regulatory Measure Status: | Historical |
| Regulatory Measure Type: | 401 Certification |
| Order Number: | Not reported |
| WDID: | 5B07CR00123 |
| NPDES Number: | Not reported |
| Adoption Date: | Not reported |
| Effective Date: | 06/08/2011 |
| Termination Date: | 06/08/2016 |
| Expiration/Review Date: | 06/08/2016 |
| Design Flow: | Not reported |
| Major/Minor: | Not reported |
| Complexity: | Not reported |
| TTWQ: | Not reported |
| Enforcement Actions within 5 years: | 0 |
| Violations within 5 years: | 0 |
| Latitude: | 37.925278 |
| Longitude: | -121.770558 |

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**A2** **BALFOUR ROAD CULVERT REPAIR** **CERS** **S121755559**
**N/A**

**< 1/8** **, CA**
**1 ft.**

**Site 2 of 2 in cluster A**

**Relative:** CERS TANKS:
**Lower**

| | |
|---|---|
| **Actual:** Site ID: | 262149 |
| **202 ft.** CERS ID: | 785046 |
| CERS Description: | Wetlands - Fill and Dredge Material |

Count: 3 records. ORPHAN SUMMARY

| City | EDR ID | Site Name | Site Address | Zip | Database(s) |
|---|---|---|---|---|---|
| BRENTWOOD | 1003879687 | SANTA FE PACIFIC PIPELINE PARTNERS | SE CORNER OF BALFOUR RD & FAIR | 94513 | SEMS-ARCHIVE |
| BRENTWOOD | S106230275 | VENTURINI LEASE SITE (BRENTWOOD OI | DEER VALLEY RD & LONE TREE WAY | | CPS-SLIC |
| BRENTWOOD | S106112407 | OXY USA INC. (BRENTWOOD OIL & GAS | LONE TREE WAY & DEER VALLEY RD | | CPS-SLIC |

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

**Number of Days to Update:** Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

**STANDARD ENVIRONMENTAL RECORDS**

***Federal NPL site list***

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 08/13/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 36

Source: EPA
Telephone: N/A
Last EDR Contact: 11/27/2018
Next Scheduled EDR Contact: 01/14/2019
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 08/13/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 36

Source: EPA
Telephone: N/A
Last EDR Contact: 11/27/2018
Next Scheduled EDR Contact: 01/14/2019
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

***Federal Delisted NPL site list***

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 08/13/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 36

Source: EPA
Telephone: N/A
Last EDR Contact: 11/27/2018
Next Scheduled EDR Contact: 01/14/2019
Data Release Frequency: Quarterly

***Federal CERCLIS list***

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 11/07/2016
Date Data Arrived at EDR: 01/05/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 92

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 07/06/2018
Next Scheduled EDR Contact: 10/15/2018
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 08/13/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 43

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 11/27/2018
Next Scheduled EDR Contact: 01/28/2019
Data Release Frequency: Quarterly

***Federal CERCLIS NFRAP site list***

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 08/13/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 43

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 11/28/2018
Next Scheduled EDR Contact: 01/28/2019
Data Release Frequency: Quarterly

***Federal RCRA CORRACTS facilities list***

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 09/19/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Quarterly

***Federal RCRA non-CORRACTS TSD facilities list***

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/19/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Quarterly

***Federal RCRA generators list***

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/19/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/19/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/19/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Quarterly

***Federal institutional controls / engineering controls registries***

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 05/14/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 10/15/2018
Next Scheduled EDR Contact: 02/25/2019
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 07/31/2018
Date Data Arrived at EDR: 08/28/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 17

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 11/28/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 07/31/2018
Date Data Arrived at EDR: 08/28/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 17

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 11/28/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Varies

***Federal ERNS list***

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 09/24/2018
Date Data Arrived at EDR: 09/25/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 45

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 09/25/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Quarterly

***State- and tribal - equivalent NPL***

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 07/30/2018
Date Data Arrived at EDR: 07/31/2018
Date Made Active in Reports: 09/07/2018
Number of Days to Update: 38

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 10/30/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: Quarterly

***State- and tribal - equivalent CERCLIS***

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 07/30/2018
Date Data Arrived at EDR: 07/31/2018
Date Made Active in Reports: 09/07/2018
Number of Days to Update: 38

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 10/30/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: Quarterly

***State and tribal landfill and/or solid waste disposal site lists***

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 08/08/2018
Date Data Arrived at EDR: 08/10/2018
Date Made Active in Reports: 08/24/2018
Number of Days to Update: 14

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 02/25/2019
Data Release Frequency: Quarterly

***State and tribal leaking storage tank lists***

LUST REG 1: Active Toxic Site Investigation

Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 7: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST: Leaking Underground Fuel Tank Report (GEOTRACKER)

Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/08/2018
Number of Days to Update: 26

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 09/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Quarterly

LUST REG 9: Leaking Underground Storage Tank Report

Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing

For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List

Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

LUST REG 3: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List

Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks

California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 04/12/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 04/10/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 04/25/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 04/24/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 04/01/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63
Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 05/08/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 04/13/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63
Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 04/12/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63
Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

CPS-SLIC: Statewide SLIC Cases (GEOTRACKER)
Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/09/2018
Number of Days to Update: 27
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35
Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36
Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11
Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Annually

***State and tribal registered storage tank lists***

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 05/15/2017
Date Data Arrived at EDR: 05/30/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 136
Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 10/10/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: Varies

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/03/2018
Number of Days to Update: 21
Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 09/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Semi-Annually

UST CLOSURE: Proposed Closure of Underground Storage Tank (UST) Cases

UST cases that are being considered for closure by either the State Water Resources Control Board or the Executive Director have been posted for a 60-day public comment period. UST Case Closures being proposed for consideration by the State Water Resources Control Board. These are primarily UST cases that meet closure criteria under the decisional framework in State Water Board Resolution No. 92-49 and other Board orders. UST Case Closures proposed for consideration by the Executive Director pursuant to State Water Board Resolution No. 2012-0061. These are cases that meet the criteria of the Low-Threat UST Case Closure Policy. UST Case Closure Review Denials and Approved Orders.

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/03/2018
Number of Days to Update: 21

Source: State Water Resources Control Board
Telephone: 916-327-7844
Last EDR Contact: 09/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Varies

MILITARY UST SITES: Military UST Sites (GEOTRACKER)

Military ust sites

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/09/2018
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Varies

AST: Aboveground Petroleum Storage Tank Facilities

A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 07/06/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 09/19/2016
Number of Days to Update: 69

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 09/17/2018
Next Scheduled EDR Contact: 12/31/2018
Data Release Frequency: Quarterly

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 05/08/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 04/12/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 04/10/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 04/12/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 04/13/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 04/24/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 04/01/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 04/25/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

***State and tribal voluntary cleanup sites***

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Properties

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 07/30/2018
Date Data Arrived at EDR: 07/31/2018
Date Made Active in Reports: 09/07/2018
Number of Days to Update: 38

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 10/30/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: Quarterly

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 09/24/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Varies

***State and tribal Brownfields sites***

BROWNFIELDS: Considered Brownfieds Sites Listing

A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 09/24/2018
Date Data Arrived at EDR: 09/25/2018
Date Made Active in Reports: 10/15/2018
Number of Days to Update: 20

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 09/25/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Quarterly

**ADDITIONAL ENVIRONMENTAL RECORDS**

***Local Brownfield lists***

US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 09/18/2018
Date Data Arrived at EDR: 09/18/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 09/18/2018
Next Scheduled EDR Contact: 12/31/2018
Data Release Frequency: Semi-Annually

***Local Lists of Landfill / Solid Waste Disposal Sites***

WMUDS/SWAT: Waste Management Unit Database

Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 10/25/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/15/2018
Number of Days to Update: 33

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 09/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 09/26/2018
Date Data Arrived at EDR: 09/28/2018
Date Made Active in Reports: 11/01/2018
Number of Days to Update: 34

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 08/07/2018
Next Scheduled EDR Contact: 02/25/2019
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 10/25/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: Varies

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 10/22/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land
A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 11/02/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

***Local Lists of Hazardous waste / Contaminated Sites***

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 09/21/2018
Date Data Arrived at EDR: 09/21/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 49

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 11/26/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: No Update Planned

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 07/30/2018
Date Data Arrived at EDR: 07/31/2018
Date Made Active in Reports: 09/07/2018
Number of Days to Update: 38

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 10/30/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: Quarterly

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 06/12/2018
Date Made Active in Reports: 08/06/2018
Number of Days to Update: 55

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 11/01/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: Varies

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 09/21/2018
Date Data Arrived at EDR: 09/21/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 49

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 11/26/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Quarterly

CERS HAZ WASTE: CERS HAZ WASTE

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA LQ HW Generator programs.

Date of Government Version: 07/23/2018
Date Data Arrived at EDR: 07/25/2018
Date Made Active in Reports: 09/05/2018
Number of Days to Update: 42

Source: CalEPA
Telephone: 916-323-2514
Last EDR Contact: 10/23/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Quarterly

***Local Lists of Registered Storage Tanks***

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 03/28/2018
Date Data Arrived at EDR: 05/25/2018
Date Made Active in Reports: 07/10/2018
Number of Days to Update: 46

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 11/26/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SAN FRANCISCO AST: Aboveground Storage Tank Site Listing

Aboveground storage tank sites

Date of Government Version: 09/11/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/11/2018
Number of Days to Update: 29

Source: San Francisco County Department of Public Health
Telephone: 415-252-3896
Last EDR Contact: 11/01/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Varies

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CERS TANKS: California Environmental Reporting System (CERS) Tanks

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Aboveground Petroleum Storage and Underground Storage Tank regulatory programs.

Date of Government Version: 07/23/2018
Date Data Arrived at EDR: 07/25/2018
Date Made Active in Reports: 09/05/2018
Number of Days to Update: 42

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 10/23/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Quarterly

***Local Land Records***

LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 08/29/2018
Date Data Arrived at EDR: 08/30/2018
Date Made Active in Reports: 10/01/2018
Number of Days to Update: 32

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/29/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 08/13/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 43

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 11/27/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Semi-Annually

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 09/04/2018
Date Data Arrived at EDR: 09/05/2018
Date Made Active in Reports: 10/02/2018
Number of Days to Update: 27

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 09/05/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Semi-Annually

***Records of Emergency Release Reports***

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 03/26/2018
Date Data Arrived at EDR: 03/27/2018
Date Made Active in Reports: 06/08/2018
Number of Days to Update: 73

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 09/25/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Quarterly

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 04/06/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 51

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Semi-Annually

LDS: Land Disposal Sites Listing (GEOTRACKER)

Land Disposal sites (Landfills) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/08/2018
Number of Days to Update: 26

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing (GEOTRACKER)

Military sites (consisting of: Military UST sites; Military Privatized sites; and Military Cleanup sites [formerly known as DoD non UST]) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/09/2018
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

***Other Ascertainable Records***

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/19/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 01/31/2015
Date Data Arrived at EDR: 07/08/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 97

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 11/19/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 10/12/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 10/12/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 01/01/2017
Date Data Arrived at EDR: 02/03/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 11/16/2018
Next Scheduled EDR Contact: 02/25/2019
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 08/31/2018
Date Data Arrived at EDR: 09/25/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 45

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 09/25/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Quarterly

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 11/05/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 05/08/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 11/09/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 06/21/2017
Date Made Active in Reports: 01/05/2018
Number of Days to Update: 198

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 09/21/2018
Next Scheduled EDR Contact: 12/31/2018
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 01/10/2018
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 2

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 11/16/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 10/24/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Annually

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 08/13/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 43

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 11/27/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 08/01/2018
Date Data Arrived at EDR: 08/22/2018
Date Made Active in Reports: 10/05/2018
Number of Days to Update: 44

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 10/23/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 08/13/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 36

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 10/04/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 06/01/2017
Date Data Arrived at EDR: 06/09/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 126

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 10/11/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: Annually

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 10/09/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Quarterly

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 08/30/2016
Date Data Arrived at EDR: 09/08/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 43

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 10/11/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 09/07/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 09/04/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 05/24/2017
Date Data Arrived at EDR: 11/30/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 15
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 10/02/2018
Date Data Arrived at EDR: 10/03/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 37
Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 10/03/2018
Next Scheduled EDR Contact: 01/14/2019
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data
Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42
Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 10/30/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees
Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 06/30/2018
Date Data Arrived at EDR: 07/17/2018
Date Made Active in Reports: 10/05/2018
Number of Days to Update: 80

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 10/01/2018
Next Scheduled EDR Contact: 12/31/2018
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 09/28/2017
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 11/21/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 10/09/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 08/08/2017
Date Data Arrived at EDR: 09/11/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 3

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 11/01/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 06/23/2017
Date Data Arrived at EDR: 10/11/2017
Date Made Active in Reports: 11/03/2017
Number of Days to Update: 23

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 11/16/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 08/13/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 43

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 11/27/2018
Next Scheduled EDR Contact: 01/14/2019
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/01/2018
Date Data Arrived at EDR: 08/29/2018
Date Made Active in Reports: 10/05/2018
Number of Days to Update: 37

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 08/29/2018
Next Scheduled EDR Contact: 12/10/2018
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 08/31/2018
Next Scheduled EDR Contact: 12/10/2018
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 08/31/2018
Next Scheduled EDR Contact: 12/10/2018
Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/11/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 3

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 09/10/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 08/07/2018
Date Data Arrived at EDR: 09/05/2018
Date Made Active in Reports: 10/05/2018
Number of Days to Update: 30

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 09/18/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Quarterly

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 06/19/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 87

Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 10/15/2018
Next Scheduled EDR Contact: 01/28/2019
Data Release Frequency: Varies

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 09/02/2018
Date Data Arrived at EDR: 09/05/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 9

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 09/05/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 07/26/2018
Date Made Active in Reports: 10/05/2018
Number of Days to Update: 71

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 08/31/2018
Next Scheduled EDR Contact: 12/10/2018
Data Release Frequency: Varies

FUELS PROGRAM: EPA Fuels Program Registered Listing

This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 08/22/2018
Date Data Arrived at EDR: 08/22/2018
Date Made Active in Reports: 10/05/2018
Number of Days to Update: 44

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 11/19/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Quarterly

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CORTESE: "Cortese" Hazardous Waste & Substances Sites List

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 09/24/2018
Date Data Arrived at EDR: 09/25/2018
Date Made Active in Reports: 10/16/2018
Number of Days to Update: 21

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 09/25/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Quarterly

CUPA LIVERMORE-PLEASANTON: CUPA Facility Listing

list of facilities associated with the various CUPA programs in Livermore-Pleasanton

Date of Government Version: 08/28/2018
Date Data Arrived at EDR: 08/30/2018
Date Made Active in Reports: 11/01/2018
Number of Days to Update: 63

Source: Livermore-Pleasanton Fire Department
Telephone: 925-454-2361
Last EDR Contact: 11/26/2018
Next Scheduled EDR Contact: 02/25/2019
Data Release Frequency: Varies

CUPA SAN FRANCISCO CO: CUPA Facility Listing

Cupa facilities

Date of Government Version: 09/11/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 09/19/2018
Number of Days to Update: 7

Source: San Francisco County Department of Environmental Health
Telephone: 415-252-3896
Last EDR Contact: 11/01/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Varies

DRYCLEAN AVAQMD: Antelope Valley Air Quality Management District Drycleaner Listing

A listing of dry cleaners in the Antelope Valley Air Quality Management District.

Date of Government Version: 10/15/2018
Date Data Arrived at EDR: 10/16/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 31

Source: Antelope Valley Air Quality Management District
Telephone: 661-723-8070
Last EDR Contact: 10/15/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Varies

DRYCLEAN SOUTH COAST: South Coast Air Quality Management District Drycleaner Listing

A listing of dry cleaners in the South Coast Air Quality Management District

Date of Government Version: 10/04/2018
Date Data Arrived at EDR: 10/05/2018
Date Made Active in Reports: 11/01/2018
Number of Days to Update: 27

Source: South Coast Air Quality Management District
Telephone: 909-396-3211
Last EDR Contact: 11/26/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Varies

DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 08/30/2018
Date Data Arrived at EDR: 09/27/2018
Date Made Active in Reports: 11/01/2018
Number of Days to Update: 35

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 08/29/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Annually

EMI: Emissions Inventory Data

Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 06/20/2018
Date Made Active in Reports: 08/06/2018
Number of Days to Update: 47

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 09/21/2018
Next Scheduled EDR Contact: 12/31/2018
Data Release Frequency: Varies

ENF: Enforcement Action Listing

A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 08/01/2018
Date Data Arrived at EDR: 08/02/2018
Date Made Active in Reports: 09/07/2018
Number of Days to Update: 36

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 11/01/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing

Financial Assurance information

Date of Government Version: 07/17/2018
Date Data Arrived at EDR: 07/24/2018
Date Made Active in Reports: 09/10/2018
Number of Days to Update: 48

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 10/22/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing

A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 08/14/2018
Date Data Arrived at EDR: 08/16/2018
Date Made Active in Reports: 09/10/2018
Number of Days to Update: 25

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 11/07/2018
Next Scheduled EDR Contact: 02/25/2019
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 10/10/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 37

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 10/10/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: Annually

ICE: ICE
Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 08/20/2018
Date Data Arrived at EDR: 08/21/2018
Date Made Active in Reports: 09/10/2018
Number of Days to Update: 20

Source: Department of Toxic Subsances Control
Telephone: 877-786-9427
Last EDR Contact: 11/19/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List
The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HWP: EnviroStor Permitted Facilities Listing
Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 08/20/2018
Date Data Arrived at EDR: 08/21/2018
Date Made Active in Reports: 09/10/2018
Number of Days to Update: 20

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 11/19/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database
A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 10/09/2018
Date Data Arrived at EDR: 10/10/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 37

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 10/10/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: Quarterly

MINES: Mines Site Location Listing
A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/09/2018
Number of Days to Update: 27

Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 09/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Quarterly

MWMP: Medical Waste Management Program Listing
The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 08/28/2018
Date Data Arrived at EDR: 09/05/2018
Date Made Active in Reports: 10/03/2018
Number of Days to Update: 28

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 09/05/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Varies

NPDES: NPDES Permits Listing
A listing of NPDES permits, including stormwater.

Date of Government Version: 08/09/2018
Date Data Arrived at EDR: 08/10/2018
Date Made Active in Reports: 09/10/2018
Number of Days to Update: 31
Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 02/25/2019
Data Release Frequency: Quarterly

PEST LIC: Pesticide Regulation Licenses Listing
A listing of licenses and certificates issued by the Department of Pesticide Regulation. The DPR issues licenses and/or certificates to: Persons and businesses that apply or sell pesticides; Pest control dealers and brokers; Persons who advise on agricultural pesticide applications.

Date of Government Version: 09/04/2018
Date Data Arrived at EDR: 09/05/2018
Date Made Active in Reports: 10/03/2018
Number of Days to Update: 28
Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 09/05/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Quarterly

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/15/2018
Number of Days to Update: 33
Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 09/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Quarterly

NOTIFY 65: Proposition 65 Records
Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 09/19/2018
Date Data Arrived at EDR: 09/20/2018
Date Made Active in Reports: 10/19/2018
Number of Days to Update: 29
Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 09/17/2018
Next Scheduled EDR Contact: 12/31/2018
Data Release Frequency: No Update Planned

UIC: UIC Listing
A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 04/27/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/17/2018
Number of Days to Update: 34
Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 09/13/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Varies

WASTEWATER PITS: Oil Wastewater Pits Listing
Water officials discovered that oil producers have been dumping chemical-laden wastewater into hundreds of unlined pits that are operating without proper permits. Inspections completed by the Central Valley Regional Water Quality Control Board revealed the existence of previously unidentified waste sites. The water boards review found that more than one-third of the region's active disposal pits are operating without permission.

Date of Government Version: 05/08/2018
Date Data Arrived at EDR: 07/11/2018
Date Made Active in Reports: 09/13/2018
Number of Days to Update: 64
Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 10/12/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: Varies

WDS: Waste Discharge System
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9
Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Quarterly

WIP: Well Investigation Program Case List
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13
Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 09/25/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Varies

OTHER OIL GAS: Other Oil & Gas Projects Sites (GEOTRACKER)
Other Oil & Gas Projects sites

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/09/2018
Number of Days to Update: 27
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Varies

CIWQS: California Integrated Water Quality System
The California Integrated Water Quality System (CIWQS) is a computer system used by the State and Regional Water Quality Control Boards to track information about places of environmental interest, manage permits and other orders, track inspections, and manage violations and enforcement activities.

Date of Government Version: 09/04/2018
Date Data Arrived at EDR: 09/05/2018
Date Made Active in Reports: 10/02/2018
Number of Days to Update: 27
Source: State Water Resources Control Board
Telephone: 866-794-4977
Last EDR Contact: 09/05/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Varies

WDR: Waste Discharge Requirements Listing
In general, the Waste Discharge Requirements (WDRs) Program (sometimes also referred to as the "Non Chapter 15 (Non 15) Program") regulates point discharges that are exempt pursuant to Subsection 20090 of Title 27 and not subject to the Federal Water Pollution Control Act. Exemptions from Title 27 may be granted for nine categories of discharges (e.g., sewage, wastewater, etc.) that meet, and continue to meet, the preconditions listed for each specific exemption. The scope of the WDRs Program also includes the discharge of wastes classified as inert, pursuant to section 20230 of Title 27.

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/09/2018
Number of Days to Update: 27
Source: State Water Resources Control Board
Telephone: 916-341-5810
Last EDR Contact: 09/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Quarterly

WELL STIM PROJ: Well Stimulation Project (GEOTRACKER)
Includes areas of groundwater monitoring plans, a depiction of the monitoring network, and the facilities, boundaries, and subsurface characteristics of the oilfield and the features (oil and gas wells, produced water ponds, UIC wells, water supply wells, etc?) being monitored

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/09/2018
Number of Days to Update: 27
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

PROJECT: Project Sites (GEOTRACKER)
Projects sites

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/09/2018
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Varies

UIC GEO: Underground Injection Control Sites (GEOTRACKER)
Underground control injection sites

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/09/2018
Number of Days to Update: 27

Source: State Water Resource Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Varies

NON-CASE INFO: Non-Case Information Sites (GEOTRACKER)
Non-Case Information sites

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/09/2018
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Varies

CERS: CalEPA Regulated Site Portal Data
The CalEPA Regulated Site Portal database combines data about environmentally regulated sites and facilities in California into a single database. It combines data from a variety of state and federal databases, and provides an overview of regulated activities across the spectrum of environmental programs for any given location in California. These activities include hazardous materials and waste, state and federal cleanups, impacted ground and surface waters, and toxic materials

Date of Government Version: 07/23/2018
Date Data Arrived at EDR: 07/25/2018
Date Made Active in Reports: 09/05/2018
Number of Days to Update: 42

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 10/23/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

SAMPLING POINT: Sampling Point ? Public Sites (GEOTRACKER)
Sampling point - public sites

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/09/2018
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Varies

PROD WATER PONDS: Produced Water Ponds Sites (GEOTRACKER)
Produced water ponds sites

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/09/2018
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Varies

MILITARY PRIV SITES: Military Privatized Sites (GEOTRACKER)
Military privatized sites

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/09/2018
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Varies

**EDR HIGH RISK HISTORICAL RECORDS**

***EDR Exclusive Records***

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

**EDR RECOVERED GOVERNMENT ARCHIVES**

***Exclusive Recovered Govt. Archives***

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

**COUNTY RECORDS**

ALAMEDA COUNTY:

CS ALAMEDA: Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 10/05/2018
Date Data Arrived at EDR: 10/10/2018
Date Made Active in Reports: 11/01/2018
Number of Days to Update: 22

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 10/05/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: Semi-Annually

UST ALAMEDA: Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 10/05/2018
Date Data Arrived at EDR: 10/10/2018
Date Made Active in Reports: 11/02/2018
Number of Days to Update: 23

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 10/05/2018
Next Scheduled EDR Contact: 04/24/2047
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA AMADOR: CUPA Facility List

Cupa Facility List

Date of Government Version: 07/01/2018
Date Data Arrived at EDR: 07/24/2018
Date Made Active in Reports: 08/20/2018
Number of Days to Update: 27

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 08/29/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Varies

BUTTE COUNTY:

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA BUTTE: CUPA Facility Listing
Cupa facility list.

Date of Government Version: 04/21/2017
Date Data Arrived at EDR: 04/25/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 106

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 10/05/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA CALVERAS: CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 08/02/2018
Date Data Arrived at EDR: 08/06/2018
Date Made Active in Reports: 08/20/2018
Number of Days to Update: 14

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 09/24/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA COLUSA: CUPA Facility List
Cupa facility list.

Date of Government Version: 05/23/2018
Date Data Arrived at EDR: 05/24/2018
Date Made Active in Reports: 07/13/2018
Number of Days to Update: 50

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

SL CONTRA COSTA: Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 08/20/2018
Date Data Arrived at EDR: 08/21/2018
Date Made Active in Reports: 09/11/2018
Number of Days to Update: 21

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 10/29/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA DEL NORTE: CUPA Facility List
Cupa Facility list

Date of Government Version: 08/16/2018
Date Data Arrived at EDR: 11/06/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 8

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 10/25/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA EL DORADO: CUPA Facility List
CUPA facility list.

Date of Government Version: 09/04/2018
Date Data Arrived at EDR: 09/05/2018
Date Made Active in Reports: 09/18/2018
Number of Days to Update: 13

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 11/16/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA FRESNO: CUPA Resources List
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 10/16/2018
Date Data Arrived at EDR: 10/18/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 27

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 10/15/2018
Next Scheduled EDR Contact: 01/14/2019
Data Release Frequency: Semi-Annually

GLENN COUNTY:

CUPA GLENN: CUPA Facility List
Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 49

Source: Glenn County Air Pollution Control District
Telephone: 830-934-6500
Last EDR Contact: 10/22/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

HUMBOLDT COUNTY:

CUPA HUMBOLDT: CUPA Facility List
CUPA facility list.

Date of Government Version: 07/11/2018
Date Data Arrived at EDR: 07/13/2018
Date Made Active in Reports: 08/22/2018
Number of Days to Update: 40

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 11/19/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Semi-Annually

IMPERIAL COUNTY:

CUPA IMPERIAL: CUPA Facility List
Cupa facility list.

Date of Government Version: 10/22/2018
Date Data Arrived at EDR: 10/25/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 20

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 10/22/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INYO COUNTY:

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA INYO: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/03/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 72

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Varies

KERN COUNTY:

UST KERN: Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 07/20/2018
Date Data Arrived at EDR: 07/25/2018
Date Made Active in Reports: 09/12/2018
Number of Days to Update: 49

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 11/01/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA KINGS: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 08/23/2018
Date Data Arrived at EDR: 08/24/2018
Date Made Active in Reports: 09/18/2018
Number of Days to Update: 25

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Varies

LAKE COUNTY:

CUPA LAKE: CUPA Facility List
Cupa facility list

Date of Government Version: 11/07/2018
Date Data Arrived at EDR: 11/08/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 6

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 10/15/2018
Next Scheduled EDR Contact: 01/28/2019
Data Release Frequency: Varies

LASSEN COUNTY:

CUPA LASSEN: CUPA Facility List
Cupa facility list

Date of Government Version: 10/15/2018
Date Data Arrived at EDR: 10/23/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 22

Source: Lassen County Environmental Health
Telephone: 530-251-8528
Last EDR Contact: 10/22/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

LOS ANGELES COUNTY:

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

AOCONCERN: San Gabriel Valley Areas of Concern
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 09/17/2018
Next Scheduled EDR Contact: 12/31/2018
Data Release Frequency: No Update Planned

HMS LOS ANGELES: HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 09/20/2018
Date Data Arrived at EDR: 10/12/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 35

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 10/05/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: Semi-Annually

LF LOS ANGELES: List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 10/15/2018
Date Data Arrived at EDR: 10/16/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 31

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 10/16/2018
Next Scheduled EDR Contact: 01/28/2019
Data Release Frequency: Varies

LF LOS ANGELES CITY: City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2018
Date Data Arrived at EDR: 05/01/2018
Date Made Active in Reports: 05/14/2018
Number of Days to Update: 13

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 10/15/2018
Next Scheduled EDR Contact: 01/28/2019
Data Release Frequency: Varies

SITE MIT LOS ANGELES: Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 07/01/2018
Date Data Arrived at EDR: 10/16/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 31

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 10/16/2018
Next Scheduled EDR Contact: 01/28/2019
Data Release Frequency: Annually

UST EL SEGUNDO: City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 04/19/2017
Date Made Active in Reports: 05/10/2017
Number of Days to Update: 21

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 10/15/2018
Next Scheduled EDR Contact: 01/28/2019
Data Release Frequency: Semi-Annually

UST LONG BEACH: City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/09/2017
Date Data Arrived at EDR: 03/10/2017
Date Made Active in Reports: 05/03/2017
Number of Days to Update: 54

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 10/22/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Annually

UST TORRANCE: City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 10/02/2018
Date Data Arrived at EDR: 10/05/2018
Date Made Active in Reports: 11/02/2018
Number of Days to Update: 28

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 10/05/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA MADERA: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 08/30/2018
Date Data Arrived at EDR: 09/04/2018
Date Made Active in Reports: 09/19/2018
Number of Days to Update: 15

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Varies

MARIN COUNTY:

UST MARIN: Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 09/26/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/02/2018
Number of Days to Update: 29

Source: Public Works Department Waste Management
Telephone: 415-473-6647
Last EDR Contact: 10/01/2018
Next Scheduled EDR Contact: 01/14/2019
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA MERCED: CUPA Facility List
CUPA facility list.

Date of Government Version: 08/29/2018
Date Data Arrived at EDR: 08/31/2018
Date Made Active in Reports: 09/19/2018
Number of Days to Update: 19

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Varies

MONO COUNTY:

CUPA MONO: CUPA Facility List
CUPA Facility List

Date of Government Version: 07/18/2018
Date Data Arrived at EDR: 09/04/2018
Date Made Active in Reports: 09/19/2018
Number of Days to Update: 15

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 11/26/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA MONTEREY: CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 10/29/2018
Date Data Arrived at EDR: 11/01/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 15

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 10/01/2018
Next Scheduled EDR Contact: 01/14/2019
Data Release Frequency: Varies

NAPA COUNTY:

LUST NAPA: Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 01/09/2017
Date Data Arrived at EDR: 01/11/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 50

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 11/21/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: No Update Planned

UST NAPA: Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 08/27/2018
Date Data Arrived at EDR: 08/28/2018
Date Made Active in Reports: 10/03/2018
Number of Days to Update: 36

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 11/26/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA NEVADA: CUPA Facility List
CUPA facility list.

Date of Government Version: 11/06/2018
Date Data Arrived at EDR: 11/08/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 6

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 10/25/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: Varies

ORANGE COUNTY:

IND_SITE ORANGE: List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 07/13/2018
Date Data Arrived at EDR: 08/08/2018
Date Made Active in Reports: 09/10/2018
Number of Days to Update: 33

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 11/05/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Annually

LUST ORANGE: List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 07/13/2018
Date Data Arrived at EDR: 08/08/2018
Date Made Active in Reports: 09/10/2018
Number of Days to Update: 33

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 11/05/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Quarterly

UST ORANGE: List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 07/13/2018
Date Data Arrived at EDR: 08/06/2018
Date Made Active in Reports: 09/12/2018
Number of Days to Update: 37

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 11/06/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Quarterly

PLACER COUNTY:

MS PLACER: Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 09/04/2018
Date Data Arrived at EDR: 09/06/2018
Date Made Active in Reports: 10/03/2018
Number of Days to Update: 27

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 08/29/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Semi-Annually

PLUMAS COUNTY:

CUPA PLUMAS: CUPA Facility List
Plumas County CUPA Program facilities.

Date of Government Version: 07/19/2018
Date Data Arrived at EDR: 07/25/2018
Date Made Active in Reports: 09/05/2018
Number of Days to Update: 42

Source: Plumas County Environmental Health
Telephone: 530-283-6355
Last EDR Contact: 10/22/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

RIVERSIDE COUNTY:

LUST RIVERSIDE: Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 10/10/2018
Date Data Arrived at EDR: 10/12/2018
Date Made Active in Reports: 10/16/2018
Number of Days to Update: 4

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 09/17/2018
Next Scheduled EDR Contact: 12/31/2018
Data Release Frequency: Quarterly

UST RIVERSIDE: Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 10/10/2018
Date Data Arrived at EDR: 10/12/2018
Date Made Active in Reports: 11/05/2018
Number of Days to Update: 24

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 09/17/2018
Next Scheduled EDR Contact: 12/31/2018
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

CS SACRAMENTO: Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 08/03/2018
Date Data Arrived at EDR: 10/02/2018
Date Made Active in Reports: 11/01/2018
Number of Days to Update: 30

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 10/02/2018
Next Scheduled EDR Contact: 01/14/2019
Data Release Frequency: Quarterly

ML SACRAMENTO: Master Hazardous Materials Facility List

Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 08/23/2018
Date Data Arrived at EDR: 10/02/2018
Date Made Active in Reports: 11/02/2018
Number of Days to Update: 31

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 10/02/2018
Next Scheduled EDR Contact: 01/14/2019
Data Release Frequency: Quarterly

SAN BENITO COUNTY:

CUPA SAN BENITO: CUPA Facility List

Cupa facility list

Date of Government Version: 08/07/2018
Date Data Arrived at EDR: 08/09/2018
Date Made Active in Reports: 09/05/2018
Number of Days to Update: 27

Source: San Benito County Environmental Health
Telephone: N/A
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Varies

SAN BERNARDINO COUNTY:

PERMITS SAN BERNARDINO: Hazardous Material Permits

This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 07/27/2018
Date Data Arrived at EDR: 07/31/2018
Date Made Active in Reports: 09/10/2018
Number of Days to Update: 41

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 11/05/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

HMMD SAN DIEGO: Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 06/04/2018
Date Data Arrived at EDR: 06/06/2018
Date Made Active in Reports: 07/17/2018
Number of Days to Update: 41

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 09/06/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Quarterly

LF SAN DIEGO: Solid Waste Facilities
San Diego County Solid Waste Facilities.

Date of Government Version: 04/18/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 06/19/2018
Number of Days to Update: 56
Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 10/22/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

SAN DIEGO CO LOP: Local Oversight Program Listing
A listing of all LOP release sites that are or were under the County of San Diego's jurisdiction. Included are closed or transferred cases, open cases, and cases that did not have a case type indicated. The cases without a case type are mostly complaints; however, some of them could be LOP cases.

Date of Government Version: 07/17/2018
Date Data Arrived at EDR: 07/24/2018
Date Made Active in Reports: 08/24/2018
Number of Days to Update: 31
Source: Department of Environmental Health
Telephone: 858-505-6874
Last EDR Contact: 10/22/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

SAN DIEGO CO. SAM: Environmental Case Listing
The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24
Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 08/29/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

LUST SAN FRANCISCO: Local Oversite Facilities
A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10
Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 11/01/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Quarterly

UST SAN FRANCISCO: Underground Storage Tank Information
Underground storage tank sites located in San Francisco county.

Date of Government Version: 09/17/2018
Date Data Arrived at EDR: 09/18/2018
Date Made Active in Reports: 10/03/2018
Number of Days to Update: 15
Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 11/01/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

UST SAN JOAQUIN: San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 06/22/2018
Date Data Arrived at EDR: 06/26/2018
Date Made Active in Reports: 07/11/2018
Number of Days to Update: 15
Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 09/17/2018
Next Scheduled EDR Contact: 12/31/2018
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA SAN LUIS OBISPO: CUPA Facility List
Cupa Facility List.

Date of Government Version: 08/20/2018
Date Data Arrived at EDR: 08/21/2018
Date Made Active in Reports: 09/07/2018
Number of Days to Update: 17

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Varies

SAN MATEO COUNTY:

BI SAN MATEO: Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 09/18/2018
Date Data Arrived at EDR: 09/20/2018
Date Made Active in Reports: 11/01/2018
Number of Days to Update: 42

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 09/10/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Annually

LUST SAN MATEO: Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 09/18/2018
Date Data Arrived at EDR: 09/20/2018
Date Made Active in Reports: 10/17/2018
Number of Days to Update: 27

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 09/10/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA SANTA BARBARA: CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Varies

SANTA CLARA COUNTY:

CUPA SANTA CLARA: Cupa Facility List
Cupa facility list

Date of Government Version: 08/17/2018
Date Data Arrived at EDR: 08/22/2018
Date Made Active in Reports: 09/07/2018
Number of Days to Update: 16

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Varies

HIST LUST SANTA CLARA: HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LUST SANTA CLARA: LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13
Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 11/21/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Annually

SAN JOSE HAZMAT: Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 08/01/2018
Date Data Arrived at EDR: 08/06/2018
Date Made Active in Reports: 09/11/2018
Number of Days to Update: 36
Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 11/01/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA SANTA CRUZ: CUPA Facility List
CUPA facility listing.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 90
Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA SHASTA: CUPA Facility List
Cupa Facility List.

Date of Government Version: 06/15/2017
Date Data Arrived at EDR: 06/19/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 51
Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Varies

SOLANO COUNTY:

LUST SOLANO: Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 08/29/2018
Date Data Arrived at EDR: 09/04/2018
Date Made Active in Reports: 10/17/2018
Number of Days to Update: 43
Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 08/29/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Quarterly

UST SOLANO: Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 08/29/2018
Date Data Arrived at EDR: 09/04/2018
Date Made Active in Reports: 10/18/2018
Number of Days to Update: 44
Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 08/29/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Quarterly

SONOMA COUNTY:

CUPA SONOMA: Cupa Facility List
Cupa Facility list

Date of Government Version: 09/24/2018
Date Data Arrived at EDR: 09/25/2018
Date Made Active in Reports: 10/16/2018
Number of Days to Update: 21

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 09/24/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Varies

LUST SONOMA: Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 10/02/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 10/25/2018
Number of Days to Update: 21

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 09/24/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Quarterly

STANISLAUS COUNTY:

CUPA STANISLAUS: CUPA Facility List
Cupa facility list

Date of Government Version: 08/14/2018
Date Data Arrived at EDR: 08/16/2018
Date Made Active in Reports: 08/24/2018
Number of Days to Update: 8

Source: Stanislaus County Department of Ennvironmental Protection
Telephone: 209-525-6751
Last EDR Contact: 10/15/2018
Next Scheduled EDR Contact: 01/28/2019
Data Release Frequency: Varies

SUTTER COUNTY:

UST SUTTER: Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 09/18/2018
Date Data Arrived at EDR: 09/20/2018
Date Made Active in Reports: 10/25/2018
Number of Days to Update: 35

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 09/17/2018
Next Scheduled EDR Contact: 12/17/2018
Data Release Frequency: Semi-Annually

TEHAMA COUNTY:

CUPA TEHAMA: CUPA Facility List
Cupa facilities

Date of Government Version: 07/17/2018
Date Data Arrived at EDR: 08/02/2018
Date Made Active in Reports: 09/07/2018
Number of Days to Update: 36

Source: Tehama County Department of Environmental Health
Telephone: 530-527-8020
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Varies

TRINITY COUNTY:

CUPA TRINITY: CUPA Facility List
Cupa facility list

Date of Government Version: 10/22/2018
Date Data Arrived at EDR: 10/25/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 20

Source: Department of Toxic Substances Control
Telephone: 760-352-0381
Last EDR Contact: 10/22/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

TULARE COUNTY:

CUPA TULARE: CUPA Facility List
Cupa program facilities

Date of Government Version: 09/13/2018
Date Data Arrived at EDR: 09/14/2018
Date Made Active in Reports: 09/19/2018
Number of Days to Update: 5

Source: Tulare County Environmental Health Services Division
Telephone: 559-624-7400
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Varies

TUOLUMNE COUNTY:

CUPA TUOLUMNE: CUPA Facility List
Cupa facility list

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/25/2018
Date Made Active in Reports: 06/25/2018
Number of Days to Update: 61

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 10/22/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

VENTURA COUNTY:

BWT VENTURA: Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 07/02/2018
Date Data Arrived at EDR: 07/26/2018
Date Made Active in Reports: 09/05/2018
Number of Days to Update: 41

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 10/22/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Quarterly

LF VENTURA: Inventory of Illegal Abandoned and Inactive Sites
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 10/01/2018
Next Scheduled EDR Contact: 01/14/2019
Data Release Frequency: Annually

LUST VENTURA: Listing of Underground Tank Cleanup Sites
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 11/07/2018
Next Scheduled EDR Contact: 02/25/2019
Data Release Frequency: Quarterly

MED WASTE VENTURA: Medical Waste Program List
To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 07/02/2018
Date Data Arrived at EDR: 07/26/2018
Date Made Active in Reports: 08/24/2018
Number of Days to Update: 29
Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 10/22/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Quarterly

UST VENTURA: Underground Tank Closed Sites List
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 09/04/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/04/2018
Number of Days to Update: 22
Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 09/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Quarterly

YOLO COUNTY:

UST YOLO: Underground Storage Tank Comprehensive Facility Report
Underground storage tank sites located in Yolo county.

Date of Government Version: 10/15/2018
Date Data Arrived at EDR: 10/19/2018
Date Made Active in Reports: 11/05/2018
Number of Days to Update: 17
Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 10/15/2018
Next Scheduled EDR Contact: 01/14/2019
Data Release Frequency: Annually

YUBA COUNTY:

CUPA YUBA: CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 11/05/2018
Date Data Arrived at EDR: 11/07/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 7
Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 10/25/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: Varies

**OTHER DATABASE(S)**

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 08/10/2018
Date Data Arrived at EDR: 08/10/2018
Date Made Active in Reports: 09/10/2018
Number of Days to Update: 31
Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 02/25/2019
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 07/13/2018
Date Made Active in Reports: 08/01/2018
Number of Days to Update: 19

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 10/09/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 07/01/2018
Date Data Arrived at EDR: 08/01/2018
Date Made Active in Reports: 08/31/2018
Number of Days to Update: 30

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 10/31/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 10/23/2018
Date Made Active in Reports: 11/27/2018
Number of Days to Update: 35

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 10/15/2018
Next Scheduled EDR Contact: 01/28/2019
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 02/23/2018
Date Made Active in Reports: 04/09/2018
Number of Days to Update: 45

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 11/16/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 06/15/2018
Date Made Active in Reports: 07/09/2018
Number of Days to Update: 24

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 09/06/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: PennWell Corporation
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data
Source: PennWell Corporation
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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

**STREET AND ADDRESS INFORMATION**

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# GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

**TARGET PROPERTY ADDRESS**

GINOCHIO - WESTERN PARCELS
BALFOUR ROAD
BRENTWOOD, CA 94513

**TARGET PROPERTY COORDINATES**

| | |
|---|---|
| Latitude (North): | 37.931105 - 37° 55' 51.98'' |
| Longitude (West): | 121.773194 - 121° 46' 23.50'' |
| Universal Tranverse Mercator: | Zone 10 |
| UTM X (Meters): | 607815.7 |
| UTM Y (Meters): | 4198675.0 |
| Elevation: | 252 ft. above sea level |

**USGS TOPOGRAPHIC MAP**

| | |
|---|---|
| Target Property Map: | 5640044 ANTIOCH SOUTH, CA |
| Version Date: | 2012 |
| East Map: | 5640376 BRENTWOOD, CA |
| Version Date: | 2012 |

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

**GROUNDWATER FLOW DIRECTION INFORMATION**

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

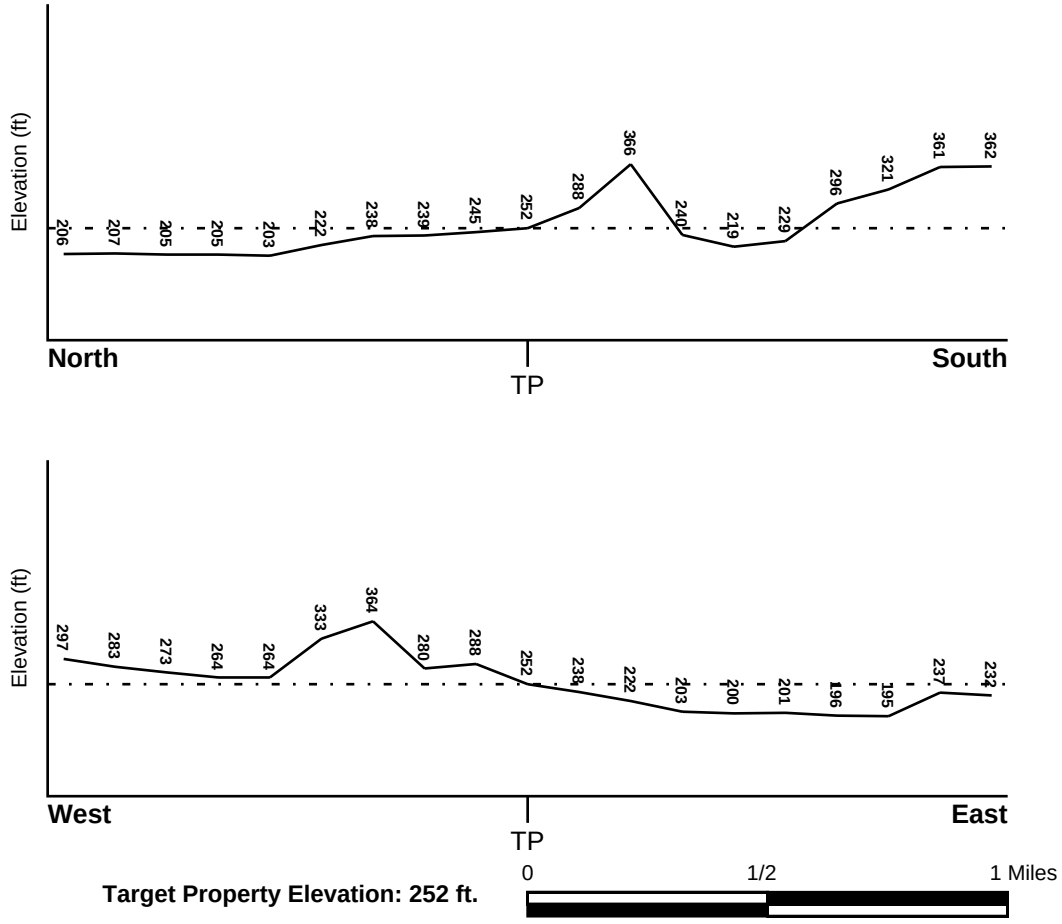
**TOPOGRAPHIC INFORMATION**

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

**TARGET PROPERTY TOPOGRAPHY**

General Topographic Gradient: General NE

**SURROUNDING TOPOGRAPHY: ELEVATION PROFILES**




Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

**HYDROLOGIC INFORMATION**

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

**FEMA FLOOD ZONE**

| Flood Plain Panel at Target Property | FEMA Source Type |
|---|---|
| 06013C0345F | FEMA FIRM Flood data |

| Additional Panels in search area: | FEMA Source Type |
|---|---|
| 06013C0335F | FEMA FIRM Flood data |

**NATIONAL WETLAND INVENTORY**

| NWI Quad at Target Property | NWI Electronic Data Coverage |
|---|---|
| ANTIOCH SOUTH | YES - refer to the Overview Map and Detail Map |

**HYDROGEOLOGIC INFORMATION**

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

***Site-Specific Hydrogeological Data*:***

| | |
|---|---|
| Search Radius: | 1.25 miles |
| Status: | Not found |

**AQUIFLOW®**

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

| MAP ID | LOCATION FROM TP | GENERAL DIRECTION GROUNDWATER FLOW |
|---|---|---|
| Not Reported | | |

* ©1996 Site−specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

**GROUNDWATER FLOW VELOCITY INFORMATION**

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

**GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY**

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

**ROCK STRATIGRAPHIC UNIT**

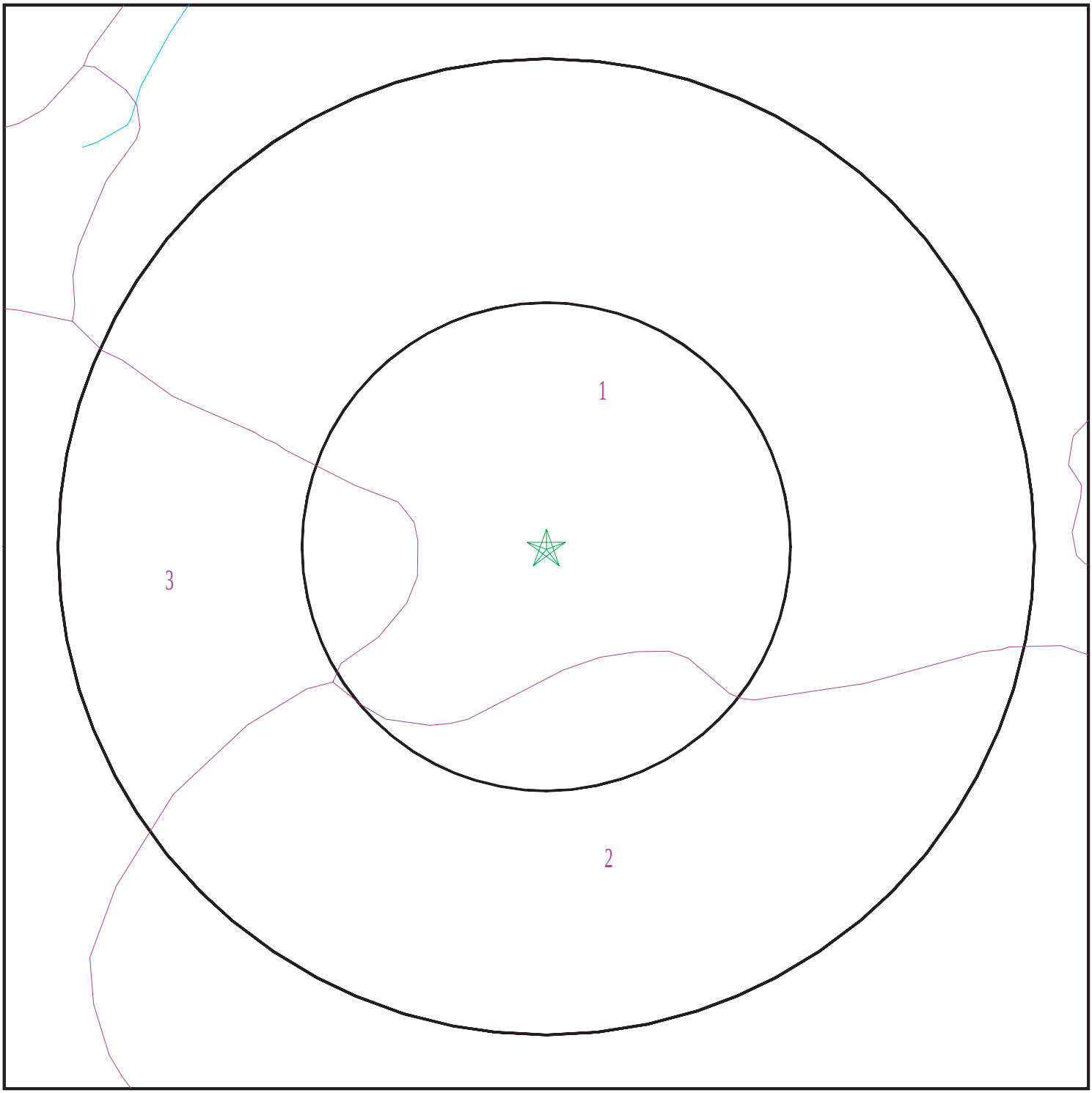
| | |
|---|---|
| Era: | Cenozoic |
| System: | Tertiary |
| Series: | Eocene |
| Code: | Te *(decoded above as Era, System & Series)* |

**GEOLOGIC AGE IDENTIFICATION**

Category: Stratifed Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

# SSURGO SOIL MAP - 05498334.2r




Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

| | | | |
|---|---|---|---|
| SITE NAME: | Ginochio - Western Parcels | CLIENT: | Engeo Inc. |
| ADDRESS: | Balfour Road<br>Brentwood CA 94513 | CONTACT: | Ana Lua |
| LAT/LONG: | 37.931105 / 121.773194 | INQUIRY #: | 05498334.2r |
| | | DATE: | November 29, 2018 5:09 pm |

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# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

**DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY**

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

---

**Soil Map ID: 1**

Soil Component Name: BRIONES

Soil Surface Texture: loamy sand

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

| Soil Layer Information | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Boundary | | | Classification | | Saturated hydraulic conductivity micro m/sec | Soil Reaction (pH) |
| Layer | Upper | Lower | Soil Texture Class | AASHTO Group | Unified Soil | | |
| 1 | 0 inches | 12 inches | loamy sand | Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand. | Not reported | Max: 4<br>Min: 1.4 | Max: Min: |
| 2 | 12 inches | 31 inches | loamy sand | Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand. | Not reported | Max: 4<br>Min: 1.4 | Max: Min: |
| 3 | 31 inches | 35 inches | weathered bedrock | Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand. | Not reported | Max: 4<br>Min: 1.4 | Max: Min: |

**Soil Map ID: 2**

Soil Component Name: ALTAMONT

Soil Surface Texture: clay

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

**Soil Layer Information**

| | Boundary | | | Classification | | Saturated hydraulic conductivity micro m/sec | Soil Reaction (pH) |
|---|---|---|---|---|---|---|---|
| Layer | Upper | Lower | Soil Texture Class | AASHTO Group | Unified Soil | | |
| 1 | 0 inches | 25 inches | clay | Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils. | Not reported | Max: 1.4<br>Min: 0 | Max: Min: |
| 2 | 25 inches | 48 inches | clay | Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils. | Not reported | Max: 1.4<br>Min: 0 | Max: Min: |
| 3 | 48 inches | 51 inches | weathered bedrock | Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils. | Not reported | Max: 1.4<br>Min: 0 | Max: Min: |

**Soil Map ID: 3**

Soil Component Name: ALTAMONT

Soil Surface Texture: clay

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Well drained

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

| Soil Layer Information | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Boundary | | | Classification | | Saturated hydraulic conductivity micro m/sec | Soil Reaction (pH) |
| Layer | Upper | Lower | Soil Texture Class | AASHTO Group | Unified Soil | | |
| 1 | 0 inches | 25 inches | clay | Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils. | Not reported | Max: 1.4 Min: 0 | Max: Min: |
| 2 | 25 inches | 48 inches | clay | Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils. | Not reported | Max: 1.4 Min: 0 | Max: Min: |
| 3 | 48 inches | 51 inches | weathered bedrock | Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils. | Not reported | Max: 1.4 Min: 0 | Max: Min: |

**LOCAL / REGIONAL WATER AGENCY RECORDS**

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

**WELL SEARCH DISTANCE INFORMATION**

| DATABASE | SEARCH DISTANCE (miles) |
|---|---|
| Federal USGS | 1.000 |
| Federal FRDS PWS | Nearest PWS within 0.001 miles |
| State Database | 1.000 |

**FEDERAL USGS WELL INFORMATION**

| MAP ID | WELL ID | LOCATION FROM TP |
|---|---|---|

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

**FEDERAL USGS WELL INFORMATION**

| MAP ID | WELL ID | LOCATION FROM TP |
|---|---|---|
| No Wells Found | | |

**FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION**

| MAP ID | WELL ID | LOCATION FROM TP |
|---|---|---|
| No PWS System Found | | |

Note: PWS System location is not always the same as well location.

**STATE DATABASE WELL INFORMATION**

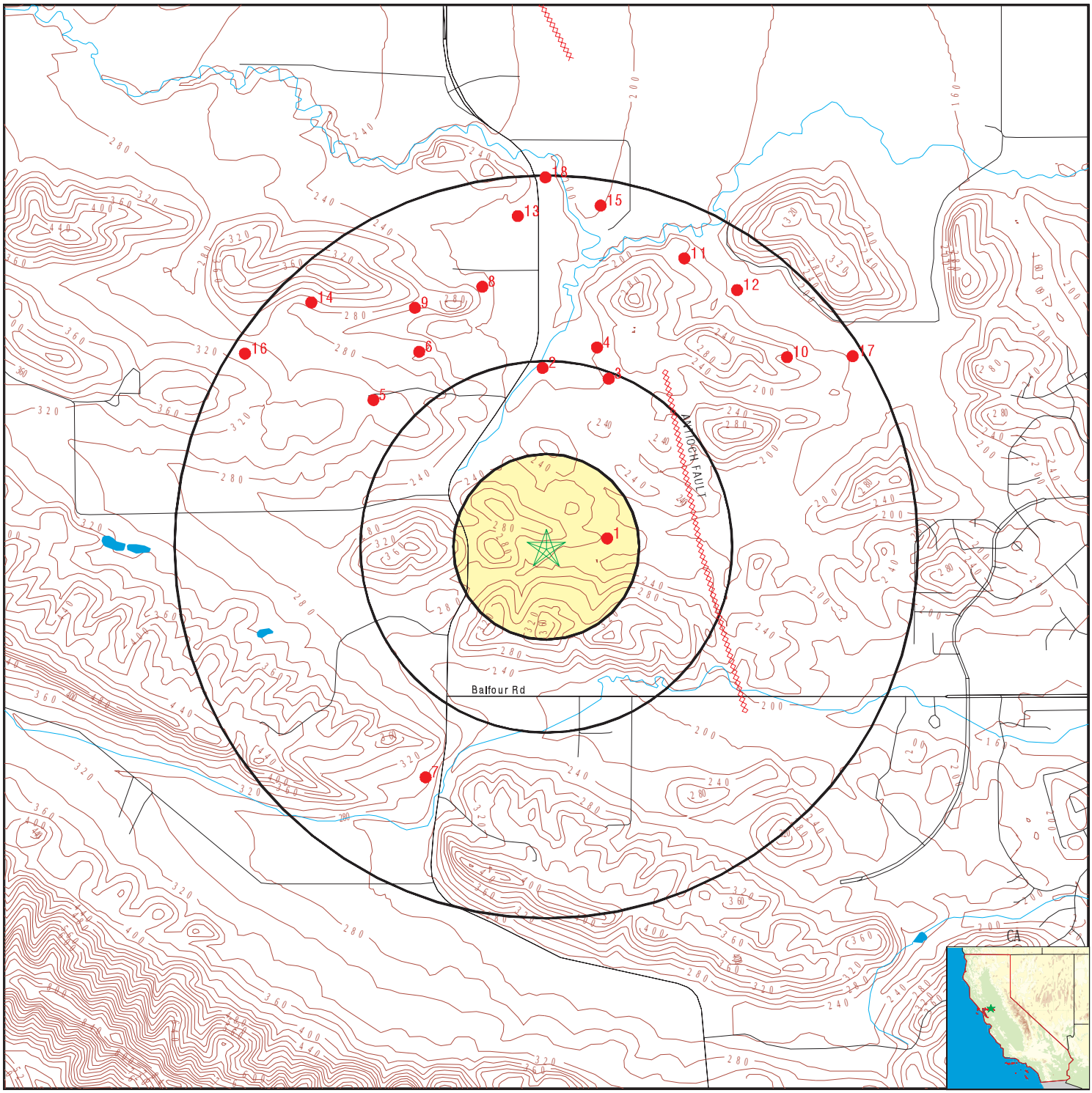
| MAP ID | WELL ID | LOCATION FROM TP |
|---|---|---|
| No Wells Found | | |

**OTHER STATE DATABASE INFORMATION**

**STATE OIL/GAS WELL INFORMATION**

| MAP ID | WELL ID | LOCATION FROM TP |
|---|---|---|
| 1 | CAOG11000232370 | 1/8 - 1/4 Mile East |
| 2 | CAOG11000232857 | 1/4 - 1/2 Mile North |
| 3 | CAOG11000232600 | 1/4 - 1/2 Mile NNE |
| 4 | CAOG11000232861 | 1/2 - 1 Mile NNE |
| 5 | CAOG11000232369 | 1/2 - 1 Mile NW |
| 6 | CAOG11000232090 | 1/2 - 1 Mile NNW |
| 7 | CAOG11000232884 | 1/2 - 1 Mile SSW |
| 8 | CAOG11000232406 | 1/2 - 1 Mile NNW |
| 9 | CAOG11000232405 | 1/2 - 1 Mile NNW |
| 10 | CAOG11000232382 | 1/2 - 1 Mile NE |
| 11 | CAOG11000232409 | 1/2 - 1 Mile NNE |
| 12 | CAOG11000232410 | 1/2 - 1 Mile NE |
| 13 | CAOG11000232411 | 1/2 - 1 Mile North |
| 14 | CAOG11000232673 | 1/2 - 1 Mile NW |
| 15 | CAOG11000232408 | 1/2 - 1 Mile North |
| 16 | CAOG11000232880 | 1/2 - 1 Mile WNW |
| 17 | CAOG11000232387 | 1/2 - 1 Mile ENE |
| 18 | CAOG11000232669 | 1/2 - 1 Mile North |

# PHYSICAL SETTING SOURCE MAP - 05498334.2r




- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location
- HD Closest Hydrogeological Data
- Oil, gas or related wells

| | | | |
|---|---|---|---|
| SITE NAME: | Ginochio - Western Parcels | CLIENT: | Engeo Inc. |
| ADDRESS: | Balfour Road<br>Brentwood CA 94513 | CONTACT: | Ana Lua |
| | | INQUIRY #: | 05498334.2r |
| LAT/LONG: | 37.931105 / 121.773194 | DATE: | November 29, 2018 5:08 pm |

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# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance

Database EDR ID Number

**1**
**East** **OIL_GAS** **CAOG11000232370**
**1/8 - 1/4 Mile**

| | | | |
|---|---|---|---|
| Districtnu: | 6 | Apinumber: | 01300025 |
| Blmwell: | N | Redrillcan: | Not Reported |
| Dryhole: | N | Wellstatus: | P |
| Operatorna: | Occidental Petroleum Corporation | Countyname: | Contra Costa |
| Fieldname: | Brentwood (ABD) | Areaname: | Any Area |
| Section: | 17 | Township: | 01N |
| Range: | 02E | Basemeridi: | MD |
| Elevation: | Not Reported | Locationde: | Not Reported |
| Gissourcec: | hud | Comments: | Status Code 007 |
| Leasename: | Ginochio | Wellnumber: | 85-17 |
| Epawell: | N | Hydraulica: | N |
| Confidenti: | N | Spuddate: | 23-OCT-63 |
| Welldeptha: | 4483 | Redrillfoo: | 0 |
| Abandonedd: | 05-NOV-63 | Completion: | Not Reported |
| Directiona: | Directionally drilled | Gissymbol: | PDH |
| Site id: | CAOG11000232370 | | |

---

**2**
**North** **OIL_GAS** **CAOG11000232857**
**1/4 - 1/2 Mile**

| | | | |
|---|---|---|---|
| Districtnu: | 6 | Apinumber: | 01320268 |
| Blmwell: | N | Redrillcan: | Not Reported |
| Dryhole: | N | Wellstatus: | P |
| Operatorna: | Venturini Associates Inc. | Countyname: | Contra Costa |
| Fieldname: | Brentwood (ABD) | Areaname: | West |
| Section: | 17 | Township: | 01N |
| Range: | 02E | Basemeridi: | MD |
| Elevation: | Not Reported | Locationde: | Not Reported |
| Gissourcec: | hud | Comments: | Status Code 014 |
| Leasename: | Ginochio | Wellnumber: | 1 |
| Epawell: | N | Hydraulica: | N |
| Confidenti: | N | Spuddate: | 31-MAR-87 |
| Welldeptha: | 4337 | Redrillfoo: | 0 |
| Abandonedd: | 26-JUN-90 | Completion: | 24-APR-87 |
| Directiona: | Unknown | Gissymbol: | POG |
| Site id: | CAOG11000232857 | | |

---

**3**
**NNE** **OIL_GAS** **CAOG11000232600**
**1/4 - 1/2 Mile**

| | | | |
|---|---|---|---|
| Districtnu: | 6 | Apinumber: | 01320364 |
| Blmwell: | N | Redrillcan: | Not Reported |
| Dryhole: | Y | Wellstatus: | P |
| Operatorna: | Sunset Exploration Inc. | Countyname: | Contra Costa |
| Fieldname: | Brentwood (ABD) | Areaname: | Main |
| Section: | 17 | Township: | 01N |
| Range: | 02E | Basemeridi: | MD |
| Elevation: | 448 | Locationde: | Not Reported |
| Gissourcec: | gps | Comments: | GPS Date 11/18/2005, Status Code 007 |
| Leasename: | Ginochio | Wellnumber: | 3 |

| | | | |
|---|---|---|---|
| Epawell: | N | Hydraulica: | N |
| Confidenti: | N | Spuddate: | 26-OCT-05 |
| Welldeptha: | 4553 | Redrillfoo: | 0 |
| Abandonedd: | 02-NOV-05 | Completion: | Not Reported |
| Directiona: | Directionally drilled | Gissymbol: | PDH |
| Site id: | CAOG11000232600 | | |

---

**4**
**NNE** **OIL_GAS** **CAOG11000232861**
**1/2 - 1 Mile**

| | | | |
|---|---|---|---|
| Districtnu: | 6 | Apinumber: | 01320271 |
| Blmwell: | N | Redrillcan: | Not Reported |
| Dryhole: | N | Wellstatus: | P |
| Operatorna: | Venturini Associates Inc. | Countyname: | Contra Costa |
| Fieldname: | Brentwood (ABD) | Areaname: | West |
| Section: | 17 | Township: | 01N |
| Range: | 02E | Basemeridi: | MD |
| Elevation: | Not Reported | Locationde: | Not Reported |
| Gissourcec: | hud | Comments: | Status Code 014 |
| Leasename: | Ginochio | Wellnumber: | 2 |
| Epawell: | N | Hydraulica: | N |
| Confidenti: | N | Spuddate: | 05-JUL-87 |
| Welldeptha: | 4300 | Redrillfoo: | 0 |
| Abandonedd: | 22-APR-93 | Completion: | 15-AUG-87 |
| Directiona: | Unknown | Gissymbol: | POG |
| Site id: | CAOG11000232861 | | |

---

**5**
**NW** **OIL_GAS** **CAOG11000232369**
**1/2 - 1 Mile**

| | | | |
|---|---|---|---|
| Districtnu: | 6 | Apinumber: | 01300023 |
| Blmwell: | N | Redrillcan: | Not Reported |
| Dryhole: | N | Wellstatus: | P |
| Operatorna: | Sinco Oil Corp. | Countyname: | Contra Costa |
| Fieldname: | Brentwood (ABD) | Areaname: | Any Area |
| Section: | 17 | Township: | 01N |
| Range: | 02E | Basemeridi: | MD |
| Elevation: | Not Reported | Locationde: | Not Reported |
| Gissourcec: | hud | Comments: | Status Code 007 |
| Leasename: | Ginochio | Wellnumber: | 32-17 |
| Epawell: | N | Hydraulica: | N |
| Confidenti: | N | Spuddate: | 07-FEB-64 |
| Welldeptha: | 4296 | Redrillfoo: | 0 |
| Abandonedd: | 27-FEB-64 | Completion: | Not Reported |
| Directiona: | Directionally drilled | Gissymbol: | PDH |
| Site id: | CAOG11000232369 | | |

---

**6**
**NNW** **OIL_GAS** **CAOG11000232090**
**1/2 - 1 Mile**

| | | | |
|---|---|---|---|
| Districtnu: | 6 | Apinumber: | 01300019 |
| Blmwell: | N | Redrillcan: | Not Reported |
| Dryhole: | N | Wellstatus: | P |

| | | | |
|---|---|---|---|
| Operatorna: | Venturini Associates Inc. | Countyname: | Contra Costa |
| Fieldname: | Brentwood (ABD) | Areaname: | Any Area |
| Section: | 17 | Township: | 01N |
| Range: | 02E | Basemeridi: | MD |
| Elevation: | Not Reported | Locationde: | Not Reported |
| Gissourcec: | hud | Comments: | Status Code 024 |
| Leasename: | Ginochio | Wellnumber: | 41-17 |
| Epawell: | N | Hydraulica: | N |
| Confidenti: | N | Spuddate: | 01-OCT-63 |
| Welldeptha: | 4293 | Redrillfoo: | 0 |
| Abandonedd: | 06-AUG-84 | Completion: | Not Reported |
| Directiona: | Unknown | Gissymbol: | PDG |
| Site id: | CAOG11000232090 | | |

---

**7**
**SSW** **OIL_GAS** **CAOG11000232884**
**1/2 - 1 Mile**

| | | | |
|---|---|---|---|
| Districtnu: | 6 | Apinumber: | 01320291 |
| Blmwell: | N | Redrillcan: | Not Reported |
| Dryhole: | Y | Wellstatus: | P |
| Operatorna: | Western Continental Operating Company | | |
| Countyname: | Contra Costa | Fieldname: | Any Field |
| Areaname: | Any Area | Section: | 20 |
| Township: | 01N | Range: | 02E |
| Basemeridi: | MD | Elevation: | 302 |
| Locationde: | Not Reported | Gissourcec: | hud |
| Comments: | Status Code 007 | Leasename: | Deer Valley |
| Wellnumber: | 1-20 | Epawell: | N |
| Hydraulica: | N | Confidenti: | N |
| Spuddate: | 03-AUG-89 | Welldeptha: | 5430 |
| Redrillfoo: | 0 | Abandonedd: | 18-AUG-89 |
| Completion: | Not Reported | Directiona: | Directionally drilled |
| Gissymbol: | PDH | Site id: | CAOG11000232884 |

---

**8**
**NNW** **OIL_GAS** **CAOG11000232406**
**1/2 - 1 Mile**

| | | | |
|---|---|---|---|
| Districtnu: | 6 | Apinumber: | 01300059 |
| Blmwell: | N | Redrillcan: | Not Reported |
| Dryhole: | Y | Wellstatus: | P |
| Operatorna: | Shell Western Exploration & Production Inc. | | |
| Countyname: | Contra Costa | Fieldname: | Brentwood (ABD) |
| Areaname: | Any Area | Section: | 8 |
| Township: | 01N | Range: | 02E |
| Basemeridi: | MD | Elevation: | Not Reported |
| Locationde: | Not Reported | Gissourcec: | hud |
| Comments: | Status Code 006 | Leasename: | Qvale |
| Wellnumber: | 41-8 | Epawell: | N |
| Hydraulica: | N | Confidenti: | N |
| Spuddate: | 28-NOV-63 | Welldeptha: | 4500 |
| Redrillfoo: | 0 | Abandonedd: | 06-DEC-63 |
| Completion: | Not Reported | Directiona: | Unknown |
| Gissymbol: | PDH | Site id: | CAOG11000232406 |

Map ID
Direction
Distance

Database EDR ID Number

**9**
**NNW**
**1/2 - 1 Mile**

**OIL_GAS** **CAOG11000232405**

| | | | |
|---|---|---|---|
| Districtnu: | 6 | Apinumber: | 01300058 |
| Blmwell: | N | Redrillcan: | Not Reported |
| Dryhole: | N | Wellstatus: | P |
| Operatorna: | Sinco Oil Corp. | Countyname: | Contra Costa |
| Fieldname: | Brentwood (ABD) | Areaname: | Any Area |
| Section: | 8 | Township: | 01N |
| Range: | 02E | Basemeridi: | MD |
| Elevation: | Not Reported | Locationde: | Not Reported |
| Gissourcec: | hud | Comments: | Status Code 024 |
| Leasename: | Qvale | Wellnumber: | 2 |
| Epawell: | N | Hydraulica: | N |
| Confidenti: | N | Spuddate: | 05-JAN-64 |
| Welldeptha: | 4425 | Redrillfoo: | 0 |
| Abandonedd: | 13-JUN-88 | Completion: | Not Reported |
| Directiona: | Unknown | Gissymbol: | PDG |
| Site id: | CAOG11000232405 | | |

---

**10**
**NE**
**1/2 - 1 Mile**

**OIL_GAS** **CAOG11000232382**

| | | | |
|---|---|---|---|
| Districtnu: | 6 | Apinumber: | 01300037 |
| Blmwell: | N | Redrillcan: | Not Reported |
| Dryhole: | N | Wellstatus: | P |
| Operatorna: | Occidental Petroleum Corporation | Countyname: | Contra Costa |
| Fieldname: | Brentwood (ABD) | Areaname: | West |
| Section: | 16 | Township: | 01N |
| Range: | 02E | Basemeridi: | MD |
| Elevation: | Not Reported | Locationde: | Not Reported |
| Gissourcec: | hud | Comments: | Status Code 006 |
| Leasename: | Ginochio | Wellnumber: | 1-16 |
| Epawell: | N | Hydraulica: | N |
| Confidenti: | N | Spuddate: | 17-MAY-63 |
| Welldeptha: | 4535 | Redrillfoo: | 0 |
| Abandonedd: | 14-MAY-92 | Completion: | Not Reported |
| Directiona: | Unknown | Gissymbol: | POG |
| Site id: | CAOG11000232382 | | |

---

**11**
**NNE**
**1/2 - 1 Mile**

**OIL_GAS** **CAOG11000232409**

| | | | |
|---|---|---|---|
| Districtnu: | 6 | Apinumber: | 01300062 |
| Blmwell: | N | Redrillcan: | Not Reported |
| Dryhole: | Y | Wellstatus: | P |
| Operatorna: | Shell Western Exploration & Production Inc. | | |
| Countyname: | Contra Costa | Fieldname: | Brentwood (ABD) |
| Areaname: | Any Area | Section: | 9 |
| Township: | 01N | Range: | 02E |
| Basemeridi: | MD | Elevation: | Not Reported |
| Locationde: | Not Reported | Gissourcec: | hud |
| Comments: | Status Code 006 | Leasename: | Sullenger |

| | | | |
|---|---|---|---|
| Wellnumber: | 31-9 | Epawell: | N |
| Hydraulica: | N | Confidenti: | N |
| Spuddate: | 16-AUG-63 | Welldeptha: | 5000 |
| Redrillfoo: | 0 | Abandonedd: | 28-AUG-63 |
| Completion: | Not Reported | Directiona: | Unknown |
| Gissymbol: | PDH | Site id: | CAOG11000232409 |

---

**12**
**NE**
**1/2 - 1 Mile**

**OIL_GAS** **CAOG11000232410**

| | | | |
|---|---|---|---|
| Districtnu: | 6 | Apinumber: | 01300064 |
| Blmwell: | N | Redrillcan: | Not Reported |
| Dryhole: | Y | Wellstatus: | P |
| Operatorna: | Shell Western Exploration & Production Inc. | | |
| Countyname: | Contra Costa | Fieldname: | Brentwood (ABD) |
| Areaname: | Any Area | Section: | 9 |
| Township: | 01N | Range: | 02E |
| Basemeridi: | MD | Elevation: | Not Reported |
| Locationde: | Not Reported | Gissourcec: | hud |
| Comments: | Status Code 006 | Leasename: | Sullenger |
| Wellnumber: | 33-9 | Epawell: | N |
| Hydraulica: | N | Confidenti: | N |
| Spuddate: | 03-APR-64 | Welldeptha: | 4351 |
| Redrillfoo: | 0 | Abandonedd: | 12-APR-64 |
| Completion: | Not Reported | Directiona: | Unknown |
| Gissymbol: | PDH | Site id: | CAOG11000232410 |

---

**13**
**North**
**1/2 - 1 Mile**

**OIL_GAS** **CAOG11000232411**

| | | | |
|---|---|---|---|
| Districtnu: | 6 | Apinumber: | 01300065 |
| Blmwell: | N | Redrillcan: | Not Reported |
| Dryhole: | N | Wellstatus: | P |
| Operatorna: | Occidental Petroleum Corporation | Countyname: | Contra Costa |
| Fieldname: | Brentwood (ABD) | Areaname: | West |
| Section: | 8 | Township: | 01N |
| Range: | 02E | Basemeridi: | MD |
| Elevation: | Not Reported | Locationde: | Not Reported |
| Gissourcec: | hud | Comments: | Status Code 014 |
| Leasename: | Sullenger | Wellnumber: | 42-8 |
| Epawell: | N | Hydraulica: | N |
| Confidenti: | N | Spuddate: | 16-JAN-64 |
| Welldeptha: | 4396 | Redrillfoo: | 0 |
| Abandonedd: | 08-DEC-93 | Completion: | Not Reported |
| Directiona: | Unknown | Gissymbol: | POG |
| Site id: | CAOG11000232411 | | |

---

**14**
**NW**
**1/2 - 1 Mile**

**OIL_GAS** **CAOG11000232673**

| | | | |
|---|---|---|---|
| Districtnu: | 6 | Apinumber: | 01320083 |
| Blmwell: | N | Redrillcan: | Not Reported |
| Dryhole: | N | Wellstatus: | P |

| | | | |
|---|---|---|---|
| Operatorna: | Sinco Oil Corp. | Countyname: | Contra Costa |
| Fieldname: | Brentwood (ABD) | Areaname: | Any Area |
| Section: | 8 | Township: | 01N |
| Range: | 02E | Basemeridi: | MD |
| Elevation: | Not Reported | Locationde: | Not Reported |
| Gissourcec: | hud | Comments: | Status Code 024 |
| Leasename: | Qvale | Wellnumber: | 1 |
| Epawell: | N | Hydraulica: | N |
| Confidenti: | N | Spuddate: | 22-JAN-72 |
| Welldeptha: | 4347 | Redrillfoo: | 0 |
| Abandonedd: | 10-JUN-88 | Completion: | Not Reported |
| Directiona: | Unknown | Gissymbol: | PDG |
| Site id: | CAOG11000232673 | | |

---

**15**
**North** **OIL_GAS** **CAOG11000232408**
**1/2 - 1 Mile**

| | | | |
|---|---|---|---|
| Districtnu: | 6 | Apinumber: | 01300061 |
| Blmwell: | N | Redrillcan: | Not Reported |
| Dryhole: | N | Wellstatus: | P |
| Operatorna: | Occidental Petroleum Corporation | Countyname: | Contra Costa |
| Fieldname: | Brentwood (ABD) | Areaname: | West |
| Section: | 8 | Township: | 01N |
| Range: | 02E | Basemeridi: | MD |
| Elevation: | Not Reported | Locationde: | Not Reported |
| Gissourcec: | hud | Comments: | Status Code 014 |
| Leasename: | Sullenger | Wellnumber: | 4-8 |
| Epawell: | N | Hydraulica: | N |
| Confidenti: | N | Spuddate: | 05-OCT-63 |
| Welldeptha: | 5000 | Redrillfoo: | 0 |
| Abandonedd: | 06-DEC-93 | Completion: | Not Reported |
| Directiona: | Unknown | Gissymbol: | POG |
| Site id: | CAOG11000232408 | | |

---

**16**
**WNW** **OIL_GAS** **CAOG11000232880**
**1/2 - 1 Mile**

| | | | |
|---|---|---|---|
| Districtnu: | 6 | Apinumber: | 01320287 |
| Blmwell: | N | Redrillcan: | Not Reported |
| Dryhole: | Y | Wellstatus: | P |
| Operatorna: | Baker Oil and Gas Co. | Countyname: | Contra Costa |
| Fieldname: | Any Field | Areaname: | Any Area |
| Section: | 18 | Township: | 01N |
| Range: | 02E | Basemeridi: | MD |
| Elevation: | 314 | Locationde: | Not Reported |
| Gissourcec: | hud | Comments: | Status Code 007 |
| Leasename: | Fleet-Oak Hill Park | Wellnumber: | 1-18 |
| Epawell: | N | Hydraulica: | N |
| Confidenti: | N | Spuddate: | 04-MAR-89 |
| Welldeptha: | 4201 | Redrillfoo: | 0 |
| Abandonedd: | 18-JUL-89 | Completion: | Not Reported |
| Directiona: | Directionally drilled | Gissymbol: | PDH |
| Site id: | CAOG11000232880 | | |

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance

Database EDR ID Number

**17**
**ENE**
**1/2 - 1 Mile**

**OIL_GAS** **CAOG11000232387**

| | | | |
|---|---|---|---|
| Districtnu: | 6 | Apinumber: | 01300042 |
| Blmwell: | N | Redrillcan: | Not Reported |
| Dryhole: | Y | Wellstatus: | P |
| Operatorna: | Shell Western Exploration & Production Inc. | | |
| Countyname: | Contra Costa | Fieldname: | Brentwood (ABD) |
| Areaname: | Any Area | Section: | 16 |
| Township: | 01N | Range: | 02E |
| Basemeridi: | MD | Elevation: | Not Reported |
| Locationde: | Not Reported | Gissourcec: | hud |
| Comments: | Status Code 006 | Leasename: | Ginochio-Shellenberger |
| Wellnumber: | 21-16 | Epawell: | N |
| Hydraulica: | N | Confidenti: | N |
| Spuddate: | 17-JUL-63 | Welldeptha: | 4780 |
| Redrillfoo: | 0 | Abandonedd: | 29-JUL-63 |
| Completion: | Not Reported | Directiona: | Unknown |
| Gissymbol: | PDH | Site id: | CAOG11000232387 |

---

**18**
**North**
**1/2 - 1 Mile**

**OIL_GAS** **CAOG11000232669**

| | | | |
|---|---|---|---|
| Districtnu: | 6 | Apinumber: | 01320079 |
| Blmwell: | N | Redrillcan: | Not Reported |
| Dryhole: | N | Wellstatus: | P |
| Operatorna: | Sinco Oil Corp. | Countyname: | Contra Costa |
| Fieldname: | Brentwood (ABD) | Areaname: | Any Area |
| Section: | 8 | Township: | 01N |
| Range: | 02E | Basemeridi: | MD |
| Elevation: | Not Reported | Locationde: | Not Reported |
| Gissourcec: | hud | Comments: | Status Code 007 |
| Leasename: | Sullenger | Wellnumber: | 2 |
| Epawell: | N | Hydraulica: | N |
| Confidenti: | N | Spuddate: | 16-DEC-71 |
| Welldeptha: | 4264 | Redrillfoo: | 0 |
| Abandonedd: | 31-DEC-71 | Completion: | Not Reported |
| Directiona: | Directionally drilled | Gissymbol: | PDH |
| Site id: | CAOG11000232669 | | |

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
# RADON

**AREA RADON INFORMATION**

State Database: CA Radon

Radon Test Results

| Zipcode | Num Tests | > 4 pCi/L |
|---|---|---|
| 94513 | 5 | 0 |

Federal EPA Radon Zone for CONTRA COSTA County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

---

Federal Area Radon Information for CONTRA COSTA COUNTY, CA

Number of sites tested: 55

| Area | Average Activity | % <4 pCi/L | % 4-20 pCi/L | % >20 pCi/L |
|---|---|---|---|---|
| Living Area - 1st Floor | 0.760 pCi/L | 100% | 0% | 0% |
| Living Area - 2nd Floor | 0.300 pCi/L | 100% | 0% | 0% |
| Basement | 0.525 pCi/L | 100% | 0% | 0% |

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

## HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

## HYDROGEOLOGIC INFORMATION

AQUIFLOW$^{R}$ Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

## GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

## OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: Department of Conservation
Telephone: 916-323-1779
Oil and Gas well locations in the state.

RADON

State Database: CA Radon
Source: Department of Health Services
Telephone: 916-324-2208
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

**STREET AND ADDRESS INFORMATION**

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# APPENDIX B

## ENVIRONMENTAL DATA RESOURCES, INC.

## Sanborn Map Report

Ginochio - Eastern Parcels

Balfour Road

Brentwood, CA 94513

Inquiry Number: 5498334.12

November 29, 2018

# Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

# Certified Sanborn® Map Report

11/29/18

**Site Name:**

Ginochio - Eastern Parcels
Balfour Road
Brentwood, CA 94513
EDR Inquiry # 5498334.12

**Client Name:**

Engeo Inc.
2010 Crow Canyon Place
San Ramon, CA 94583
Contact: Ana Lua

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Engeo Inc. were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

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## *Certified Sanborn Results:*

**Certification #** 9AE6-4D04-BCE0

**PO #** 4894.002.000

**Project** Ginochio - Eastern Parcels

### UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

Sanborn® Library search results

Certification #: 9AE6-4D04-BCE0

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

*The Sanborn Library LLC Since 1866™*

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Ginochio - Western Parcels

Balfour Road

Brentwood, CA 94513

Inquiry Number: 5498334.3

November 29, 2018

# Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

# Certified Sanborn® Map Report

11/29/18

**Site Name:**

Ginochio - Western Parcels
Balfour Road
Brentwood, CA 94513
EDR Inquiry # 5498334.3

**Client Name:**

Engeo Inc.
2010 Crow Canyon Place
San Ramon, CA 94583
Contact: Ana Lua

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Engeo Inc. were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

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## *Certified Sanborn Results:*

**Certification #** 5049-452B-98D4

**PO #** 4894.002.000

**Project** Ginochio - Western Parcels

### UNMAPPED PROPERTY

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Sanborn® Library search results

Certification #: 5049-452B-98D4

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

*The Sanborn Library LLC Since 1866™*

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# APPENDIX C

## ENVIRONMENTAL DATA RESOURCES, INC.

## Historical Topographic Map Report

Ginochio - Eastern Parcels

Balfour Road

Brentwood, CA 94513

Inquiry Number: 5498334.13

November 29, 2018

# EDR Historical Topo Map Report

## with QuadMatch™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

# EDR Historical Topo Map Report

11/29/18

**Site Name:**

Ginochio - Eastern Parcels
Balfour Road
Brentwood, CA 94513
EDR Inquiry # 5498334.13

**Client Name:**

Engeo Inc.
2010 Crow Canyon Place
San Ramon, CA 94583
Contact: Ana Lua

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Engeo Inc. were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

***Search Results:***

**P.O.#** 4894.002.000
**Project:** Ginochio - Eastern Parcels

***Coordinates:***

| | |
|---|---|
| **Latitude:** | 37.929886 37° 55' 48" North |
| **Longitude:** | -121.7671 -121° 46' 2" West |
| **UTM Zone:** | Zone 10 North |
| **UTM X Meters:** | 608350.37 |
| **UTM Y Meters:** | 4198752.42 |
| **Elevation:** | 220.77' above sea level |

**Maps Provided:**

| | |
|---|---|
| 2012 | 1898 |
| 1978, 1980 | 1896 |
| 1973 | |
| 1968 | |
| 1953, 1954 | |
| 1943 | |
| 1914, 1916 | |
| 1912, 1916 | |

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## *Topo Sheet Key*

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

### 2012 Source Sheets



Antioch South
2012
7.5-minute, 24000

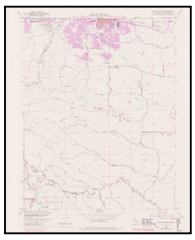


Brentwood
2012
7.5-minute, 24000

### 1978, 1980 Source Sheets



Brentwood
1978
7.5-minute, 24000
Aerial Photo Revised 1974



Antioch South
1980
7.5-minute, 24000
Aerial Photo Revised 1978

### 1973 Source Sheets



Antioch South
1973
7.5-minute, 24000
Aerial Photo Revised 1973

### 1968 Source Sheets



Antioch South
1968
7.5-minute, 24000
Aerial Photo Revised 1968



Brentwood
1968
7.5-minute, 24000
Aerial Photo Revised 1968

## *Topo Sheet Key*

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

### 1953, 1954 Source Sheets

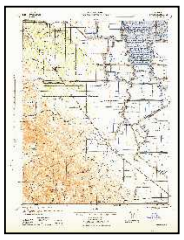


Antioch South
1953
7.5-minute, 24000
Aerial Photo Revised 1949



Brentwood
1954
7.5-minute, 24000
Aerial Photo Revised 1949

### 1943 Source Sheets

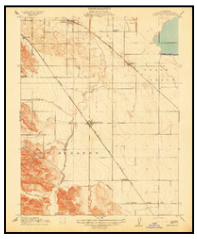


BYRON
1943
15-minute, 62500



Mt. Diablo
1943
15-minute, 62500
Aerial Photo Revised 1937

### 1914, 1916 Source Sheets



Brentwood
1914
7.5-minute, 31680



Lone Tree Valley
1916
7.5-minute, 31680

## *Topo Sheet Key*

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

### 1912, 1916 Source Sheets



Byron
1916
15-minute, 62500

### 1898 Source Sheets



Mt. Diablo
1898
15-minute, 62500

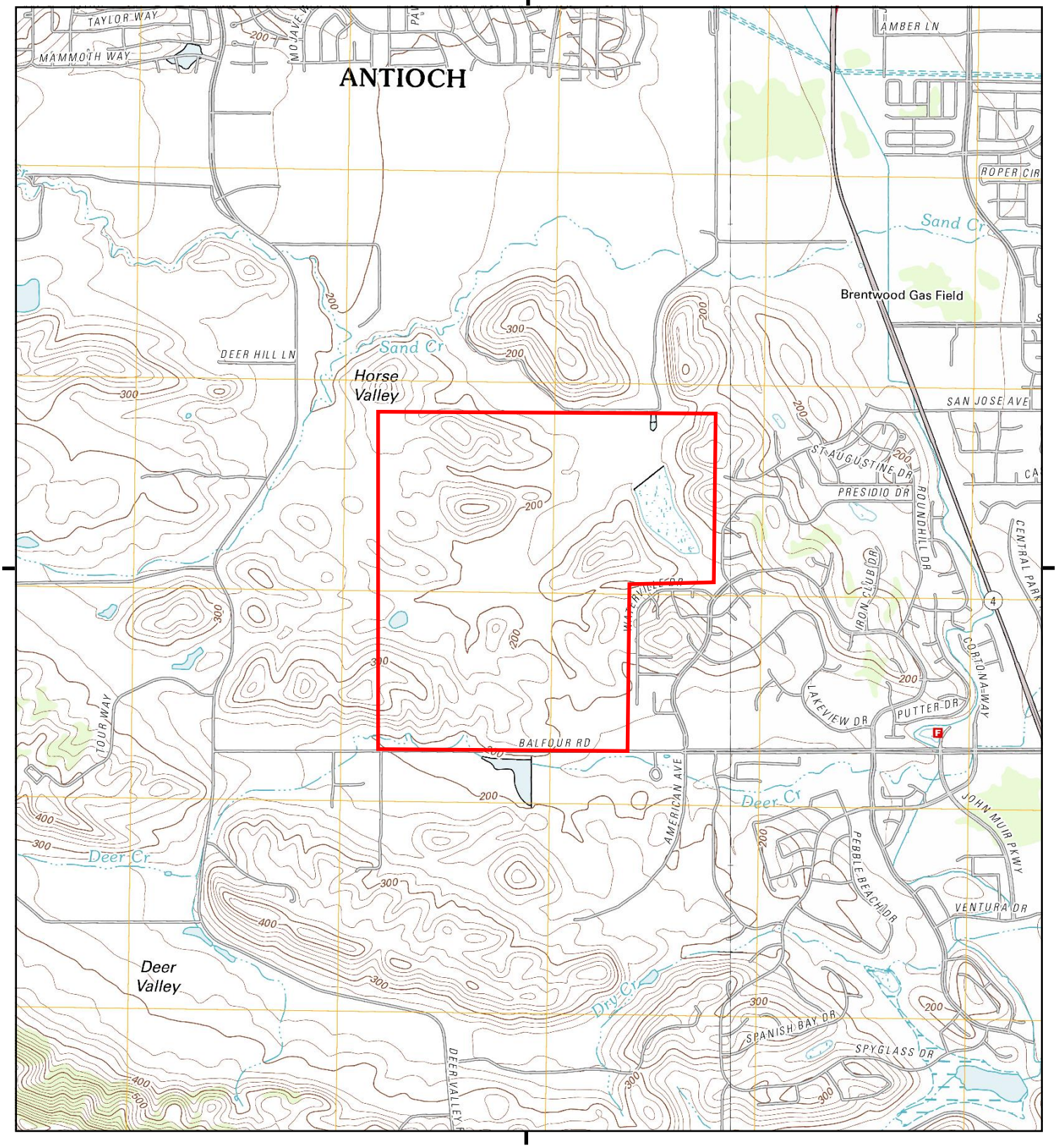
### 1896 Source Sheets



Mt. Diablo
1896
15-minute, 62500

# Historical Topo Map

2012




This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

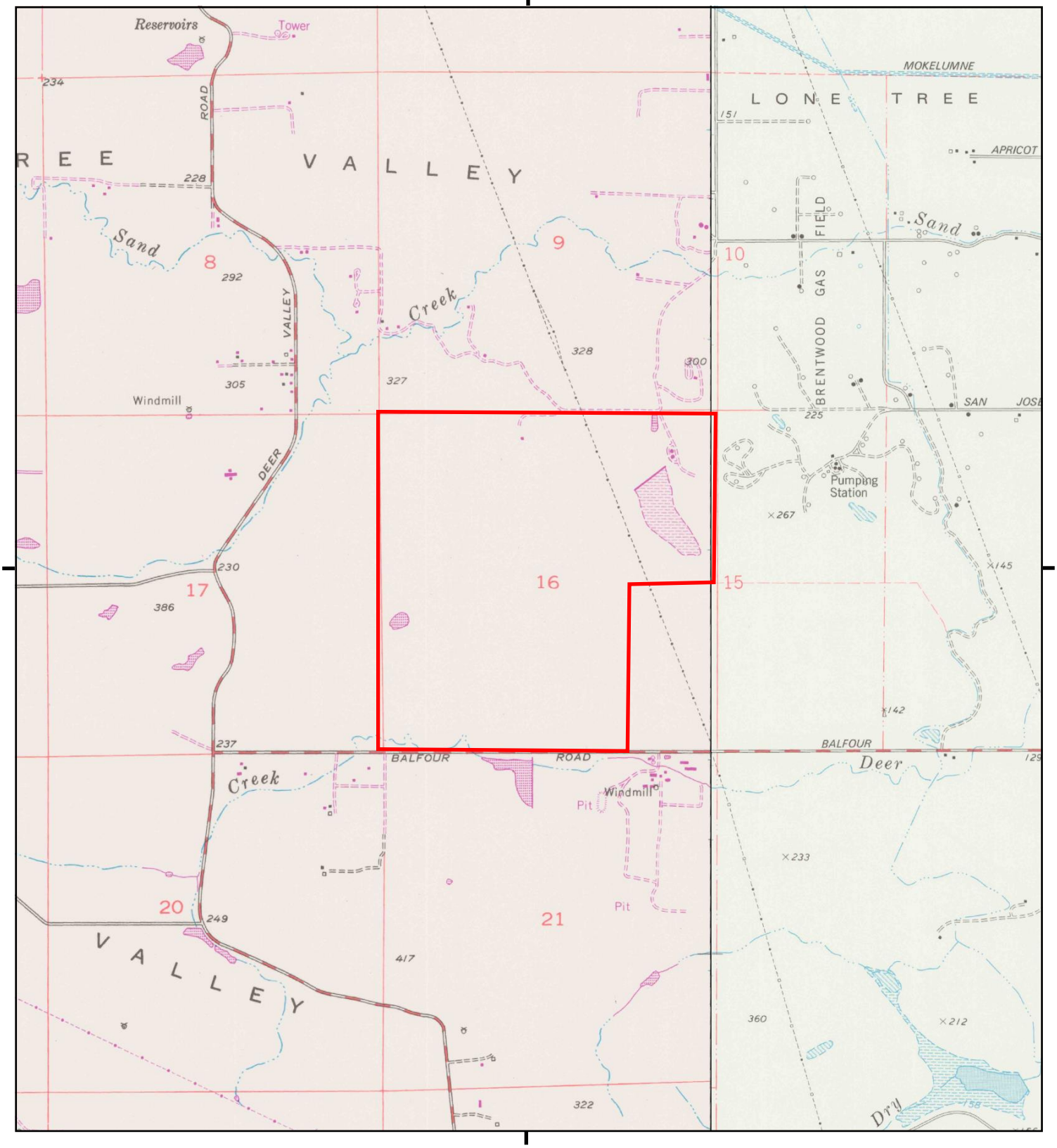
TP, Antioch South, 2012, 7.5-minute
E, Brentwood, 2012, 7.5-minute

SITE NAME: Ginochio - Eastern Parcels
ADDRESS: Balfour Road
Brentwood, CA 94513
CLIENT: Engeo Inc.

N

# Historical Topo Map

1978, 1980




This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

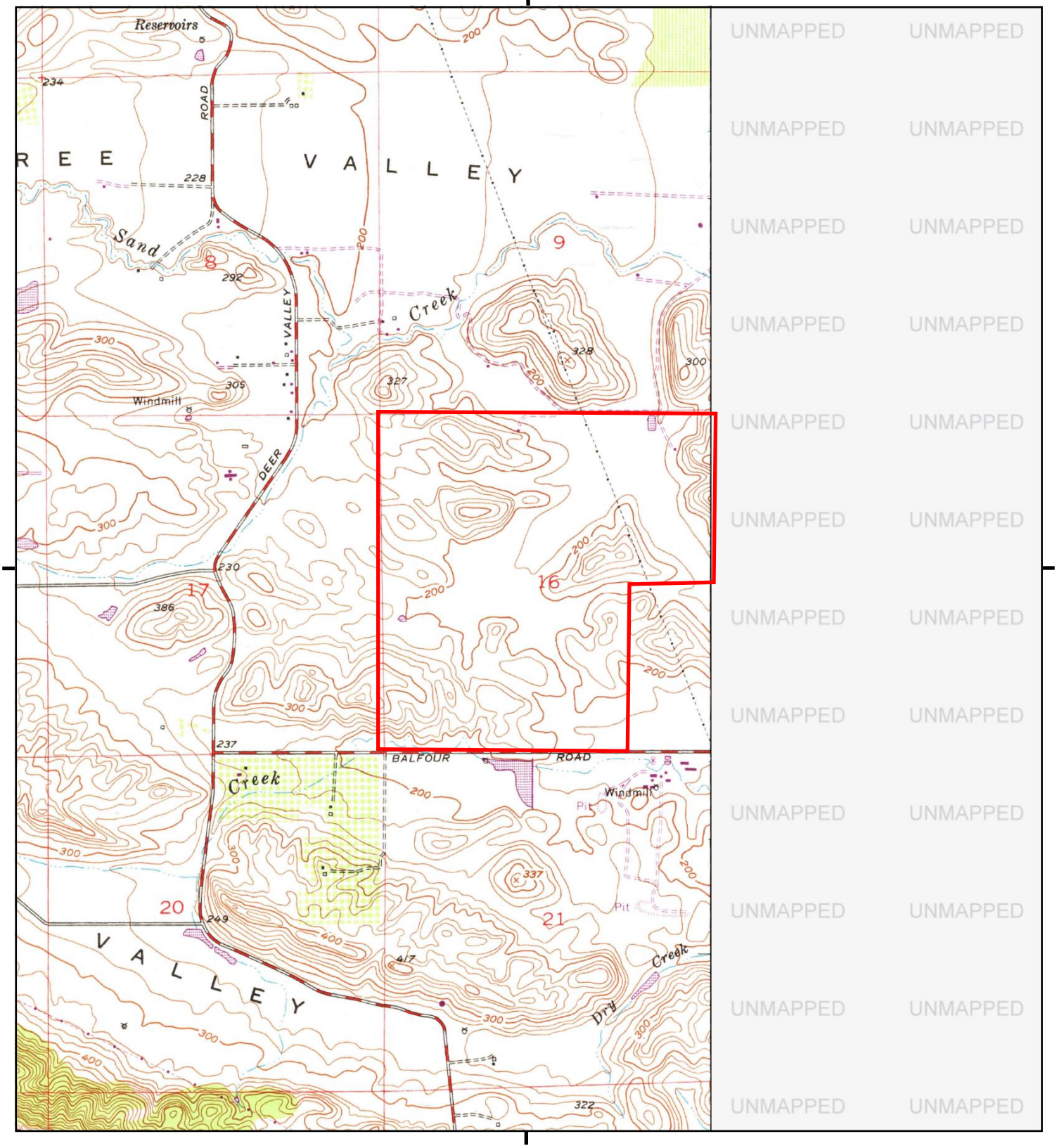
TP, Antioch South, 1980, 7.5-minute
E, Brentwood, 1978, 7.5-minute

SITE NAME: Ginochio - Eastern Parcels
ADDRESS: Balfour Road
Brentwood, CA 94513
CLIENT: Engeo Inc.

N

# Historical Topo Map

1973




This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

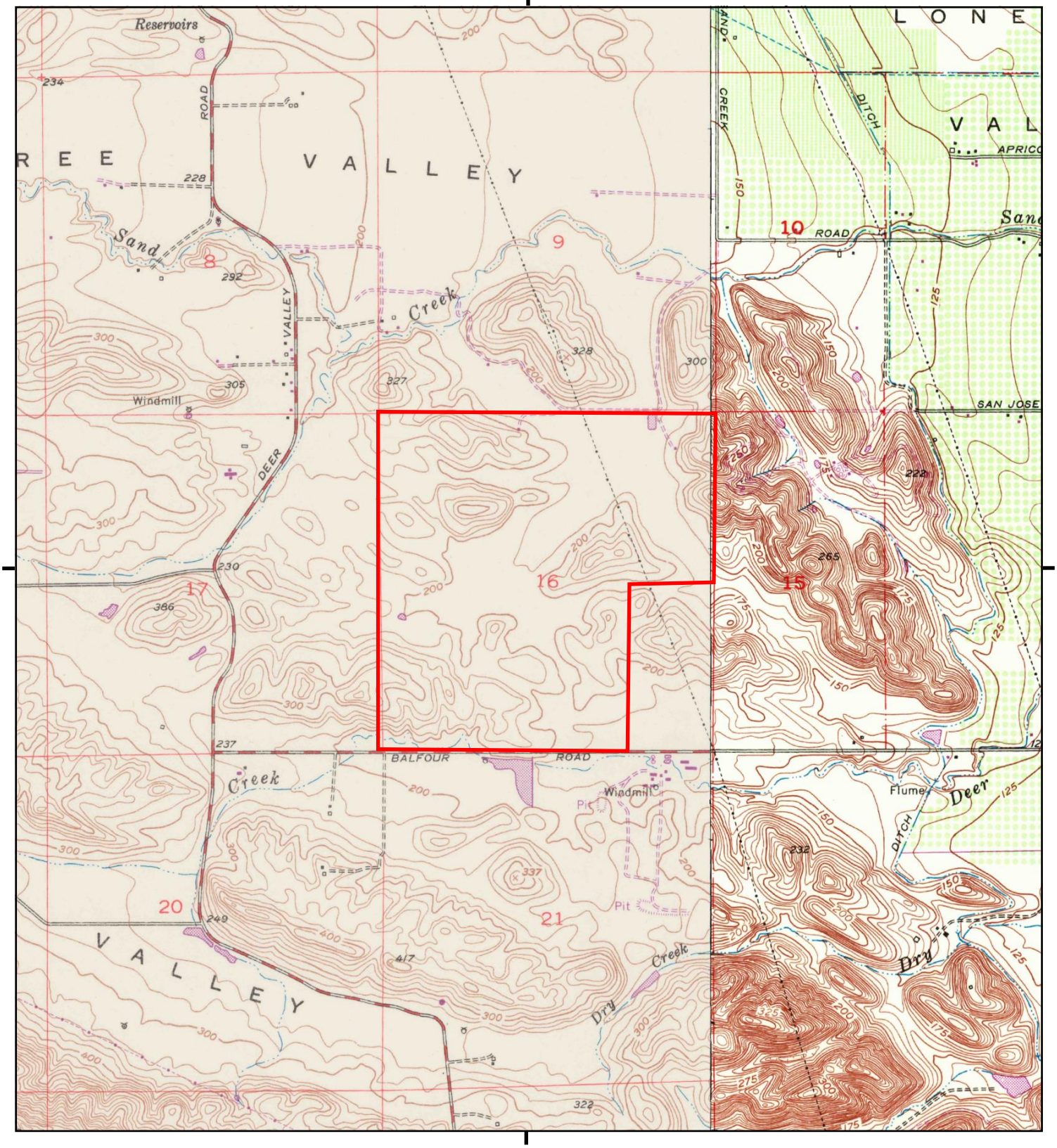
TP, Antioch South, 1973, 7.5-minute

SITE NAME: Ginochio - Eastern Parcels
ADDRESS: Balfour Road
Brentwood, CA 94513
CLIENT: Engeo Inc.

N

# Historical Topo Map

1968




This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

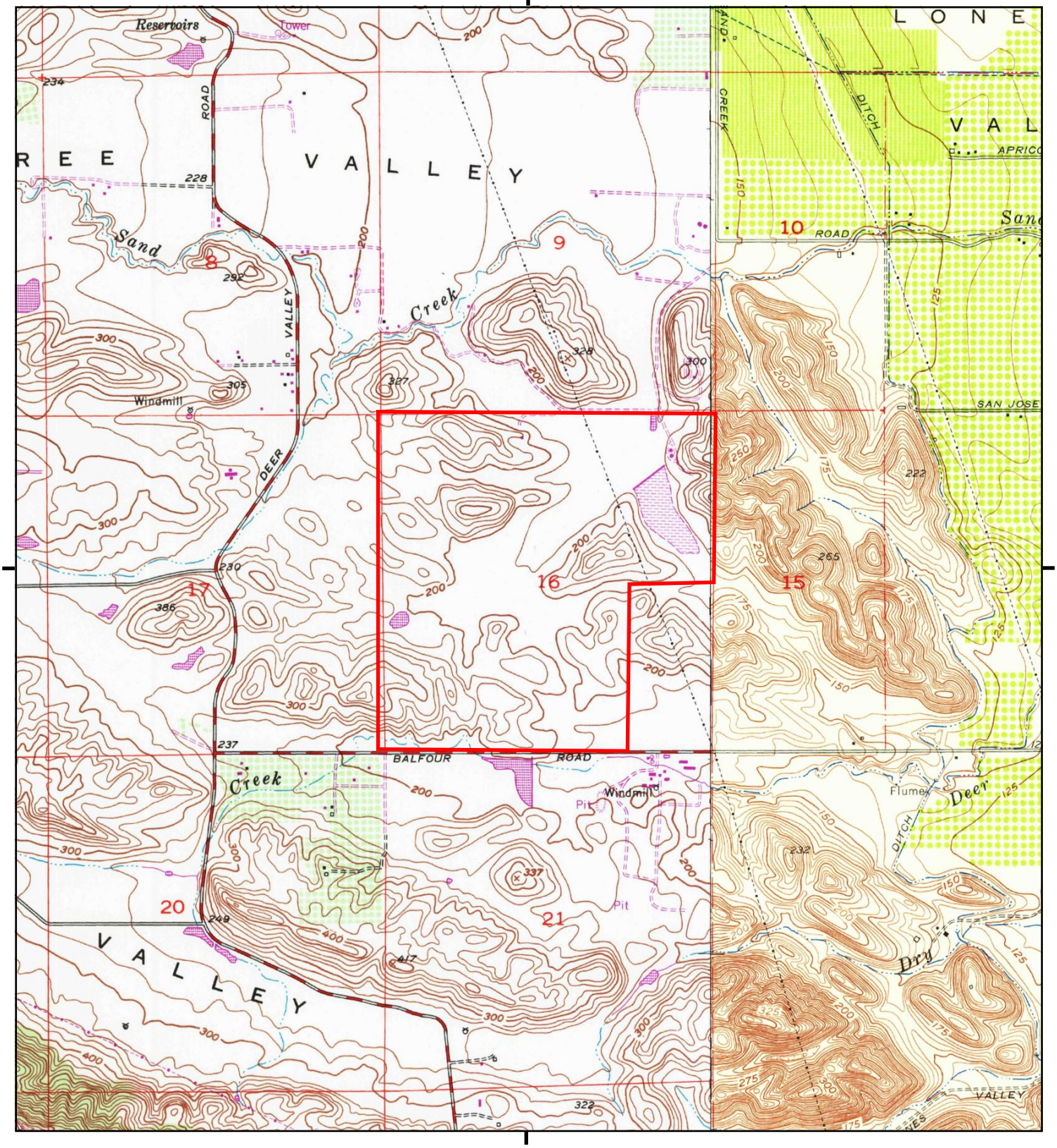
TP, Antioch South, 1968, 7.5-minute
E, Brentwood, 1968, 7.5-minute

SITE NAME: Ginochio - Eastern Parcels
ADDRESS: Balfour Road
Brentwood, CA 94513
CLIENT: Engeo Inc.

N

# Historical Topo Map

1953, 1954




This report includes information from the following map sheet(s).

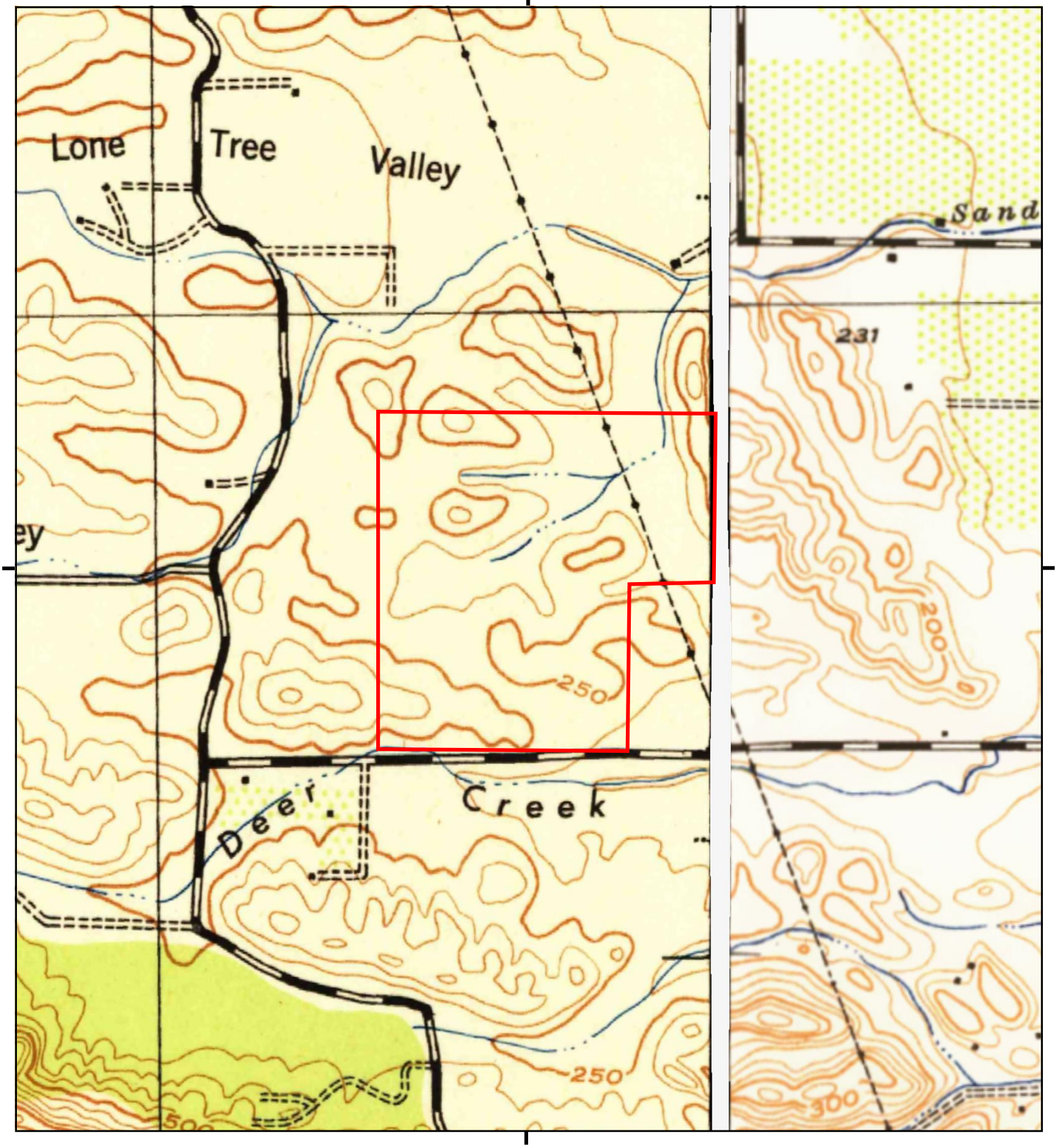
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Antioch South, 1953, 7.5-minute
E, Brentwood, 1954, 7.5-minute

SITE NAME: Ginochio - Eastern Parcels
ADDRESS: Balfour Road
Brentwood, CA 94513
CLIENT: Engeo Inc.

N




This report includes information from the following map sheet(s).

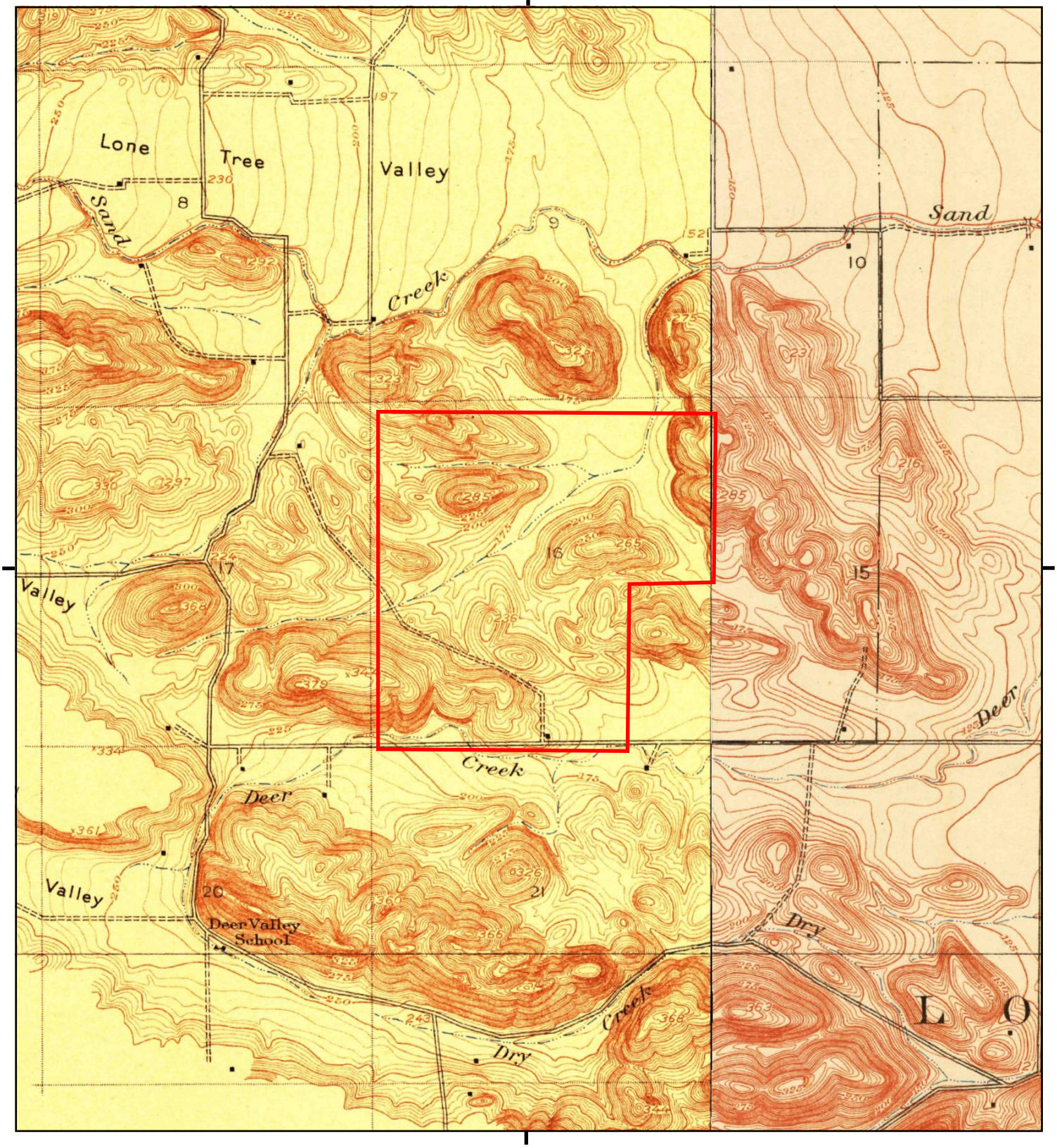
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Mt. Diablo, 1943, 15-minute
SE, BYRON, 1943, 15-minute

SITE NAME: Ginochio - Eastern Parcels
ADDRESS: Balfour Road
Brentwood, CA 94513
CLIENT: Engeo Inc.

N




This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

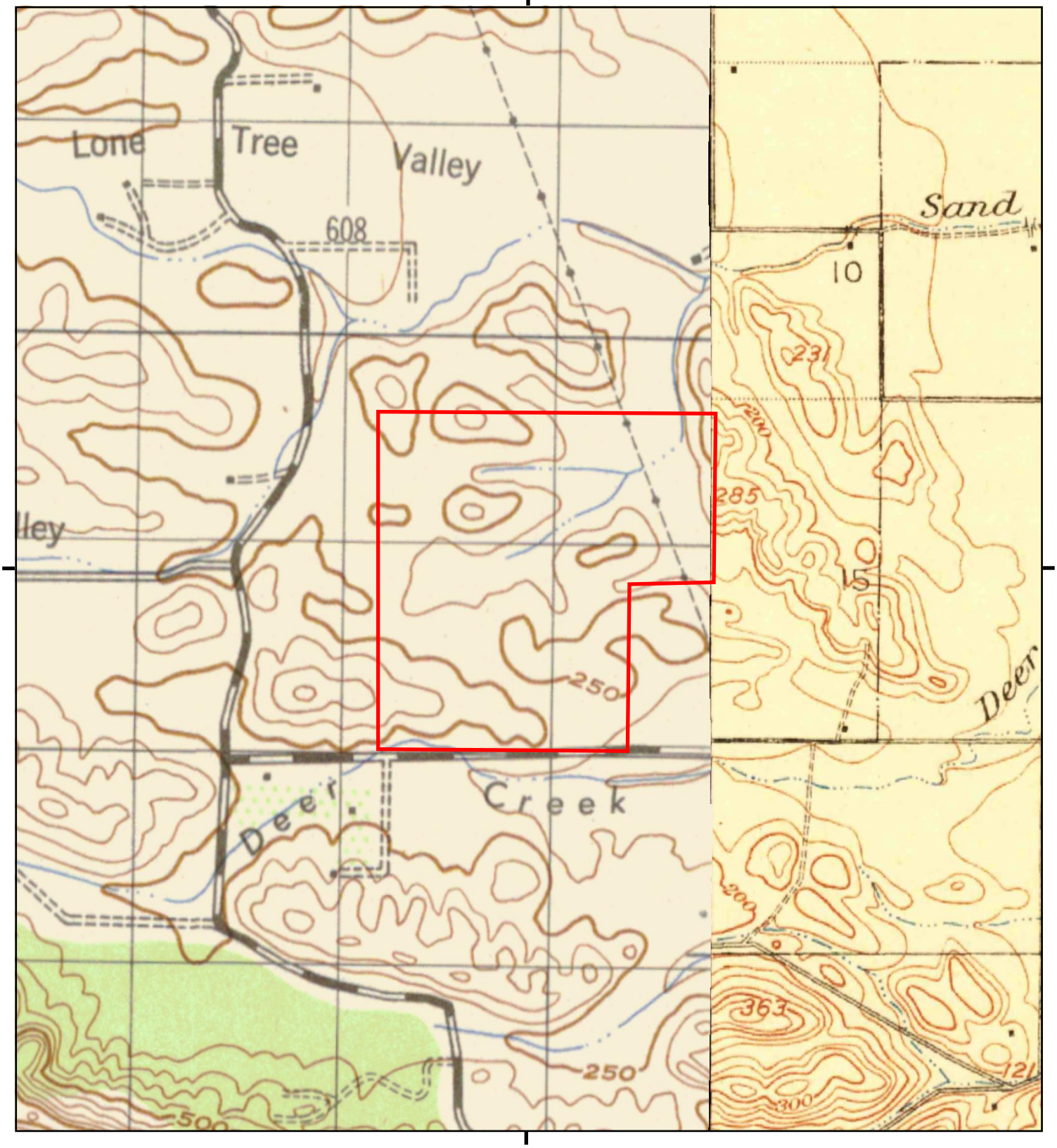
TP, Lone Tree Valley, 1916, 7.5-minute
E, Brentwood, 1914, 7.5-minute

SITE NAME: Ginochio - Eastern Parcels
ADDRESS: Balfour Road
Brentwood, CA 94513
CLIENT: Engeo Inc.

N

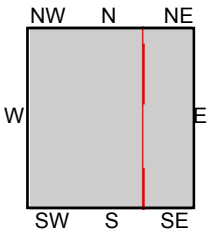
# Historical Topo Map

1912, 1916




This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5



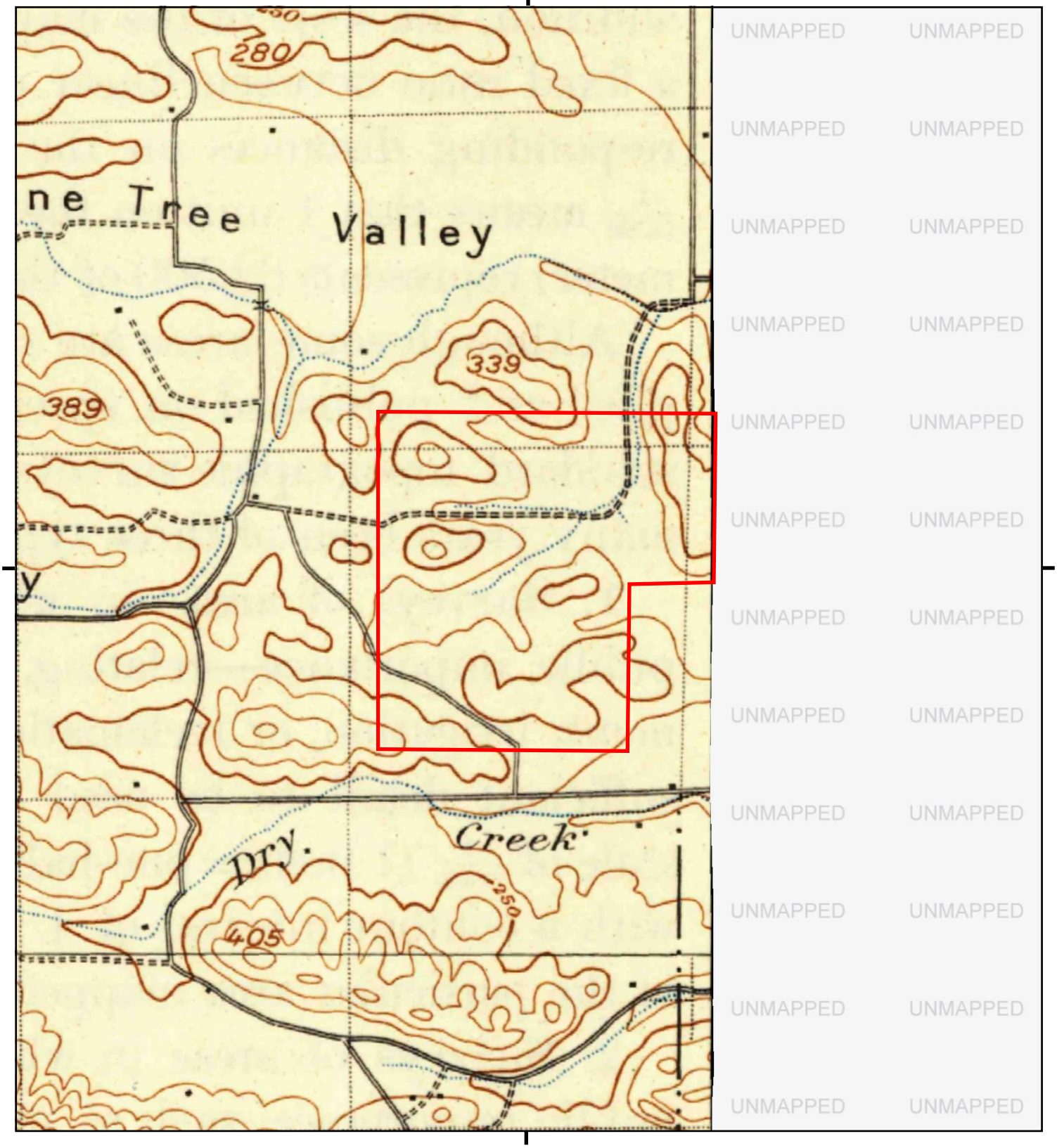

TP, MT. DIABLO, 1912, 15-minute
SE, Byron, 1916, 15-minute

SITE NAME: Ginochio - Eastern Parcels
ADDRESS: Balfour Road
Brentwood, CA 94513
CLIENT: Engeo Inc.

N

# Historical Topo Map

1898




This report includes information from the following map sheet(s).

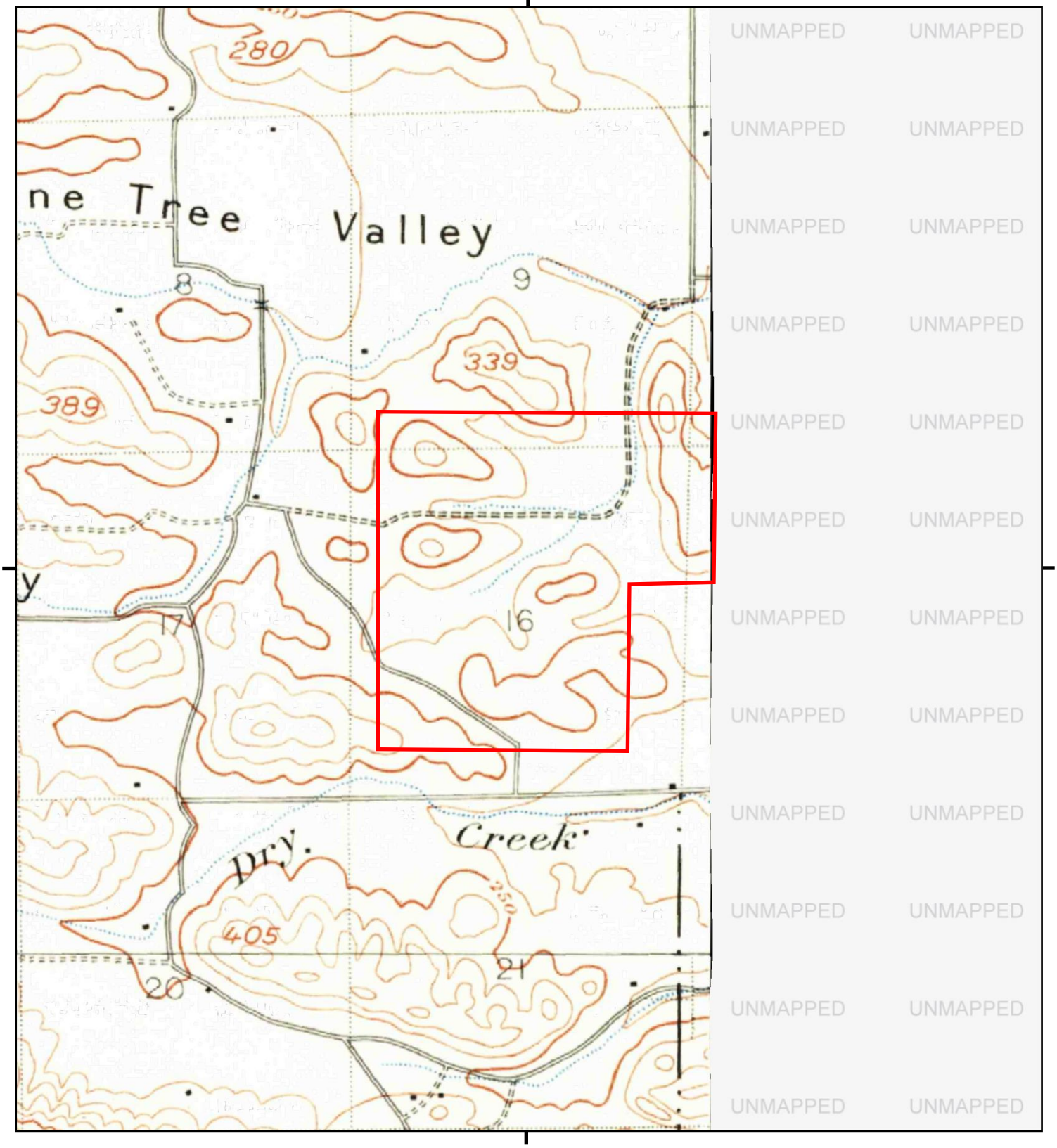
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Mt. Diablo, 1898, 15-minute

SITE NAME: Ginochio - Eastern Parcels
ADDRESS: Balfour Road
Brentwood, CA 94513
CLIENT: Engeo Inc.

N




This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Mt. Diablo, 1896, 15-minute

SITE NAME: Ginochio - Eastern Parcels
ADDRESS: Balfour Road
Brentwood, CA 94513
CLIENT: Engeo Inc.

N

Ginochio - Western Parcels

Balfour Road

Brentwood, CA 94513

Inquiry Number: 5498334.4

November 29, 2018

# EDR Historical Topo Map Report

## with QuadMatch™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

# EDR Historical Topo Map Report

11/29/18

**Site Name:**

Ginochio - Western Parcels
Balfour Road
Brentwood, CA 94513
EDR Inquiry # 5498334.4

**Client Name:**

Engeo Inc.
2010 Crow Canyon Place
San Ramon, CA 94583
Contact: Ana Lua

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Engeo Inc. were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

***Search Results:***

**P.O.#** 4894.002.000
**Project:** Ginochio - Western Parcels

***Coordinates:***

| | |
|---|---|
| **Latitude:** | 37.931105 37° 55' 52" North |
| **Longitude:** | -121.773194 -121° 46' 23" West |
| **UTM Zone:** | Zone 10 North |
| **UTM X Meters:** | 607813.01 |
| **UTM Y Meters:** | 4198880.61 |
| **Elevation:** | 248.69' above sea level |

**Maps Provided:**

| | |
|---|---|
| 2012 | 1898 |
| 1978, 1980 | 1896 |
| 1973 | |
| 1968 | |
| 1953, 1954 | |
| 1943 | |
| 1914, 1916 | |
| 1912, 1916 | |

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## *Topo Sheet Key*

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

### 2012 Source Sheets



Antioch South
2012
7.5-minute, 24000

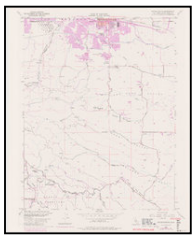


Brentwood
2012
7.5-minute, 24000

### 1978, 1980 Source Sheets



Brentwood
1978
7.5-minute, 24000
Aerial Photo Revised 1974



Antioch South
1980
7.5-minute, 24000
Aerial Photo Revised 1978

### 1973 Source Sheets



Antioch South
1973
7.5-minute, 24000
Aerial Photo Revised 1973

### 1968 Source Sheets



Antioch South
1968
7.5-minute, 24000
Aerial Photo Revised 1968



Brentwood
1968
7.5-minute, 24000
Aerial Photo Revised 1968

## *Topo Sheet Key*

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

### 1953, 1954 Source Sheets

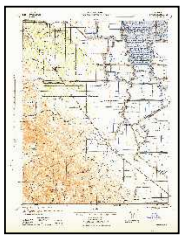


Antioch South
1953
7.5-minute, 24000
Aerial Photo Revised 1949



Brentwood
1954
7.5-minute, 24000
Aerial Photo Revised 1949

### 1943 Source Sheets

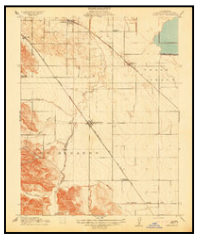


BYRON
1943
15-minute, 62500



Mt. Diablo
1943
15-minute, 62500
Aerial Photo Revised 1937

### 1914, 1916 Source Sheets



Brentwood
1914
7.5-minute, 31680



Lone Tree Valley
1916
7.5-minute, 31680

## *Topo Sheet Key*

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

### 1912, 1916 Source Sheets



Byron
1916
15-minute, 62500

### 1898 Source Sheets



Mt. Diablo
1898
15-minute, 62500

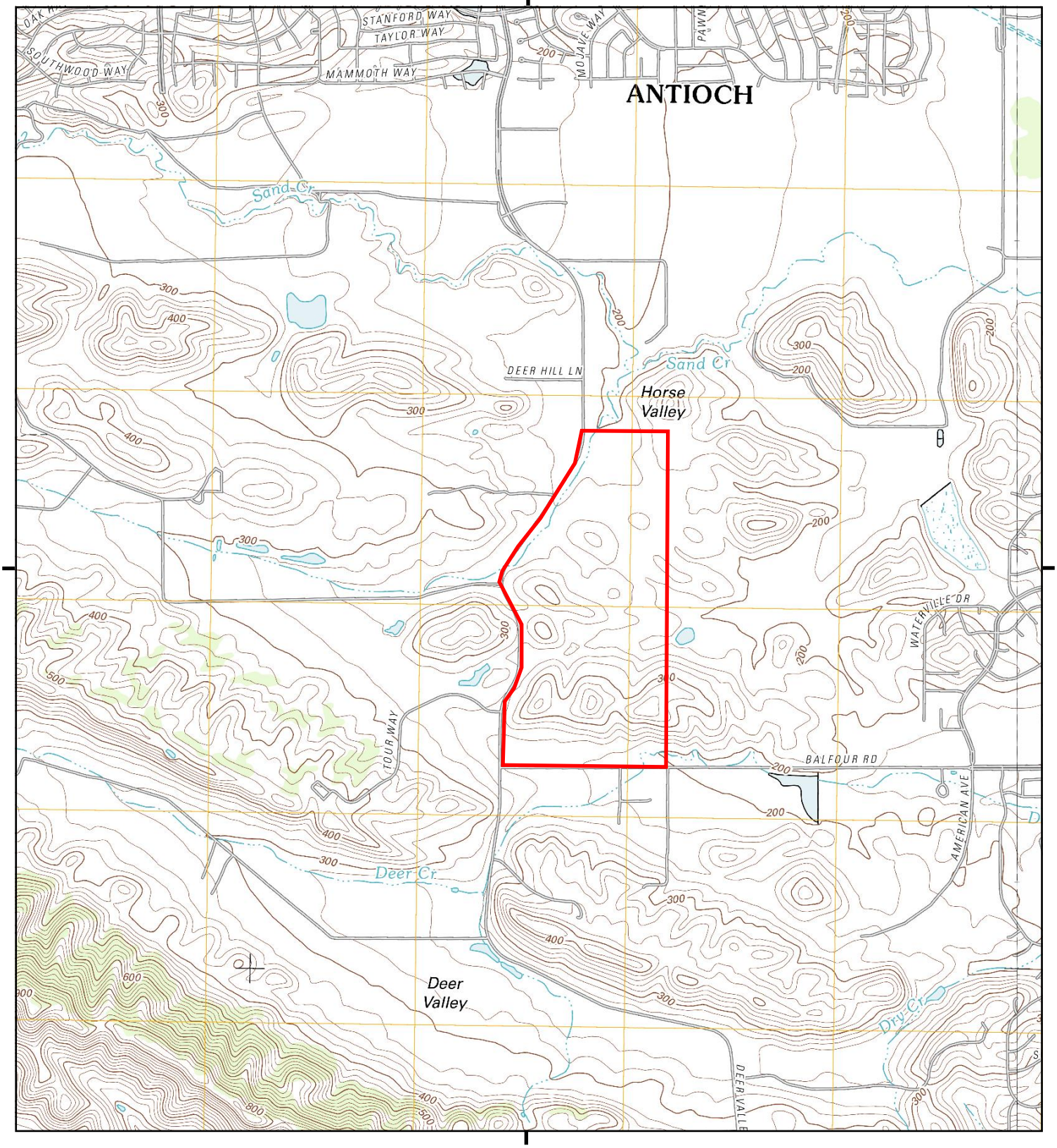
### 1896 Source Sheets



Mt. Diablo
1896
15-minute, 62500

# Historical Topo Map

2012




This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

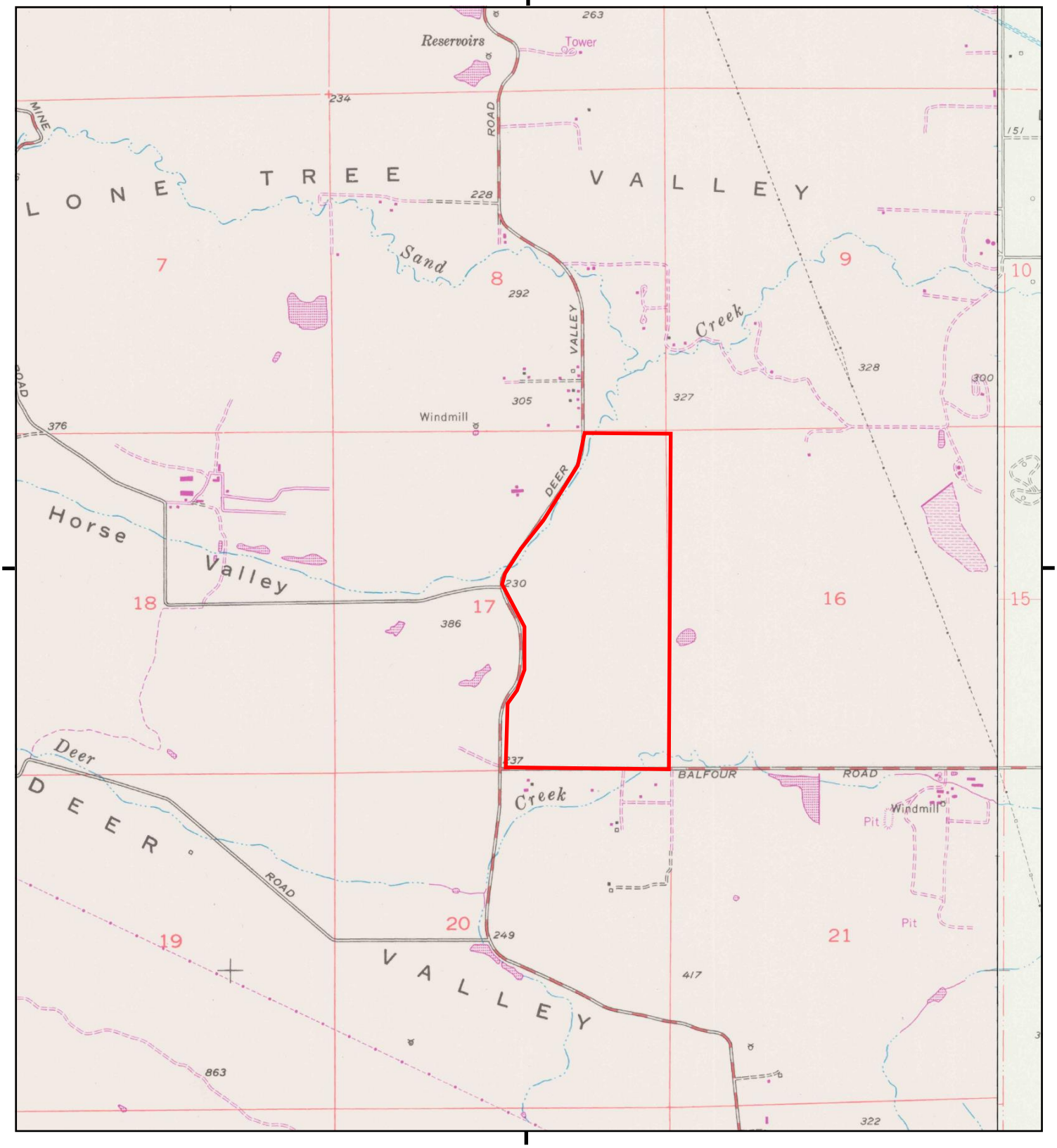
TP, Antioch South, 2012, 7.5-minute
E, Brentwood, 2012, 7.5-minute

SITE NAME: Ginochio - Western Parcels
ADDRESS: Balfour Road
Brentwood, CA 94513
CLIENT: Engeo Inc.

N

# Historical Topo Map

1978, 1980




This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

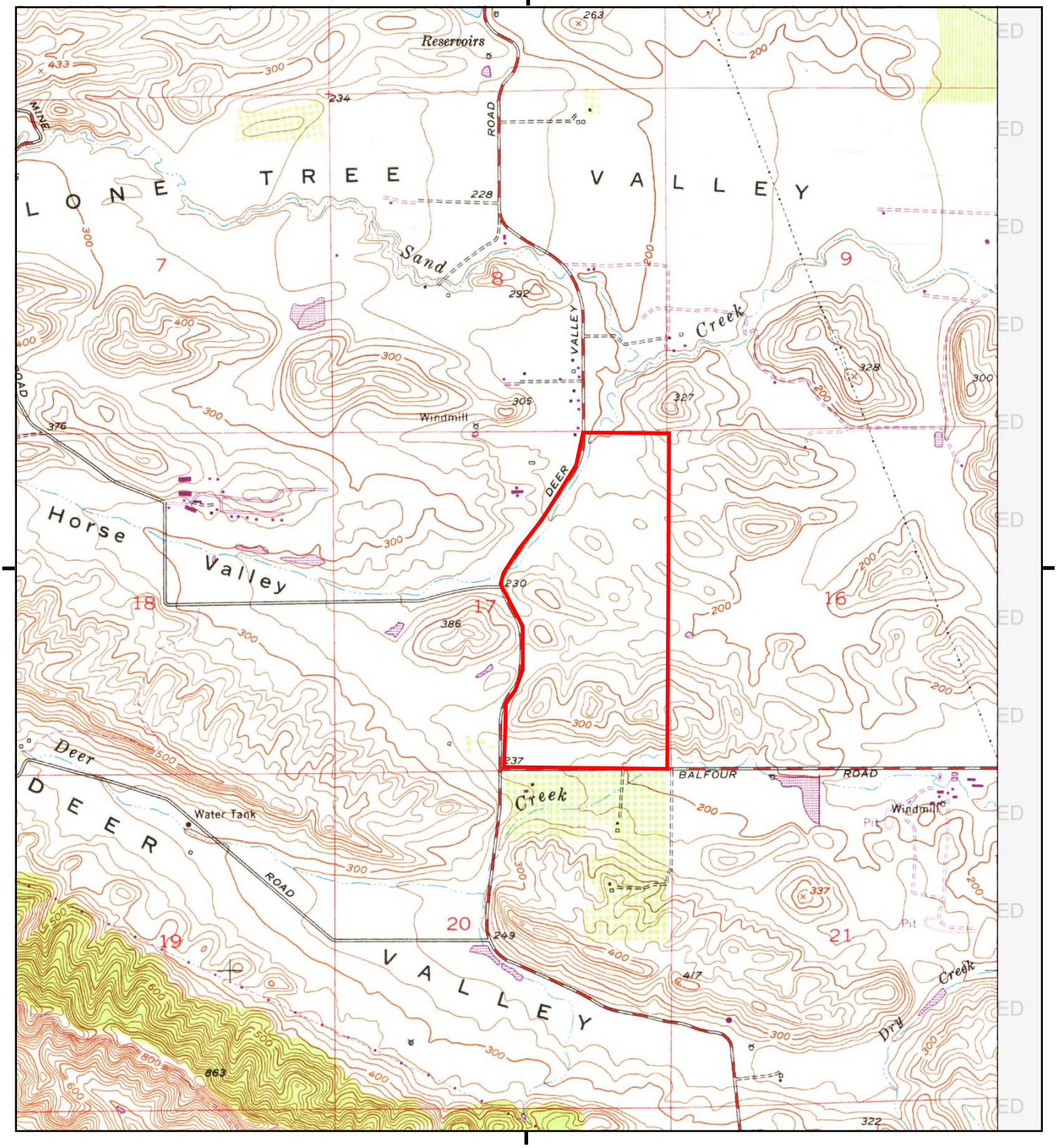
TP, Antioch South, 1980, 7.5-minute
E, Brentwood, 1978, 7.5-minute

SITE NAME: Ginochio - Western Parcels
ADDRESS: Balfour Road
Brentwood, CA 94513
CLIENT: Engeo Inc.

N

# Historical Topo Map

1973




This report includes information from the following map sheet(s).

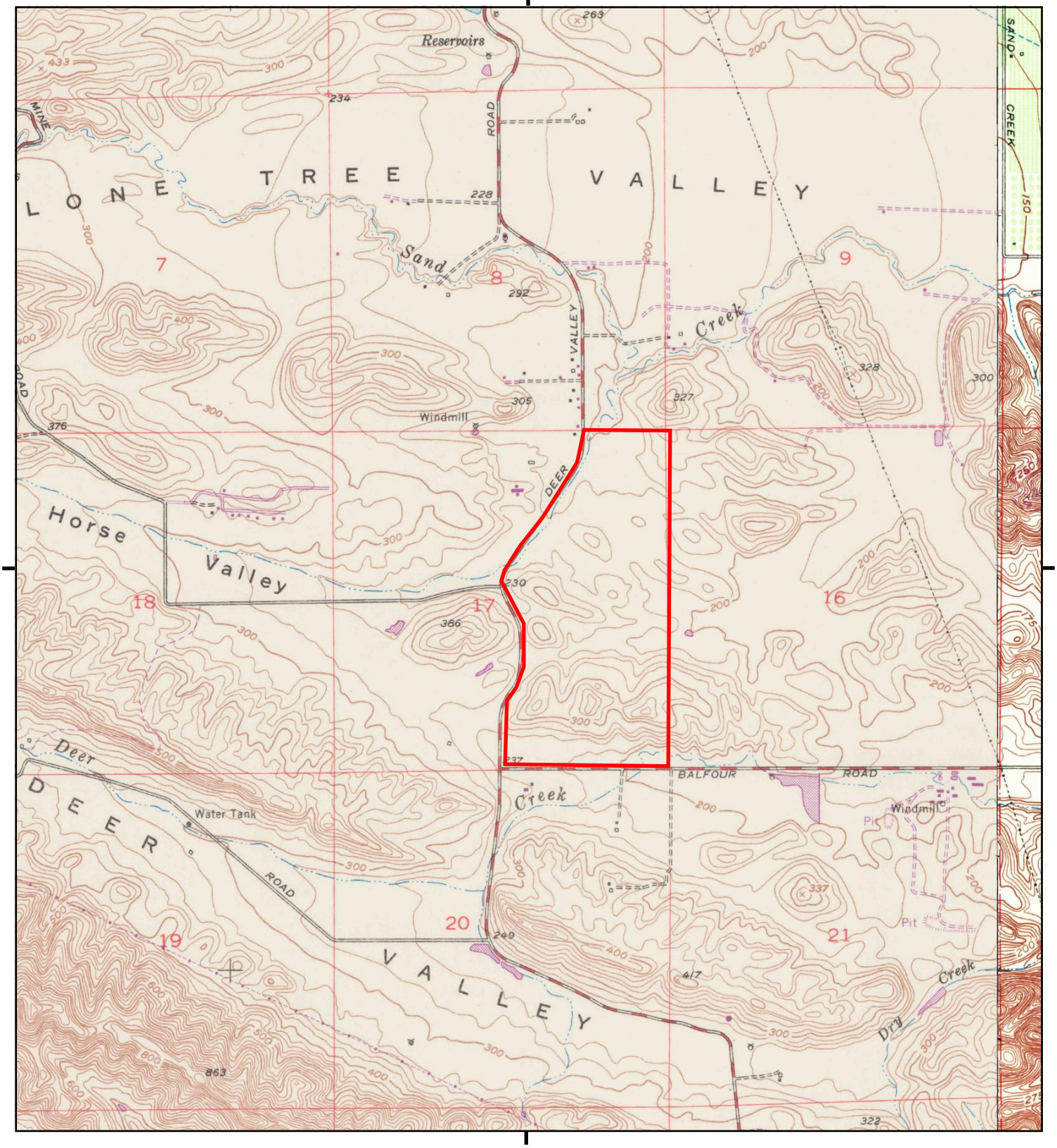
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Antioch South, 1973, 7.5-minute

SITE NAME: Ginochio - Western Parcels
ADDRESS: Balfour Road
Brentwood, CA 94513
CLIENT: Engeo Inc.

N




This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

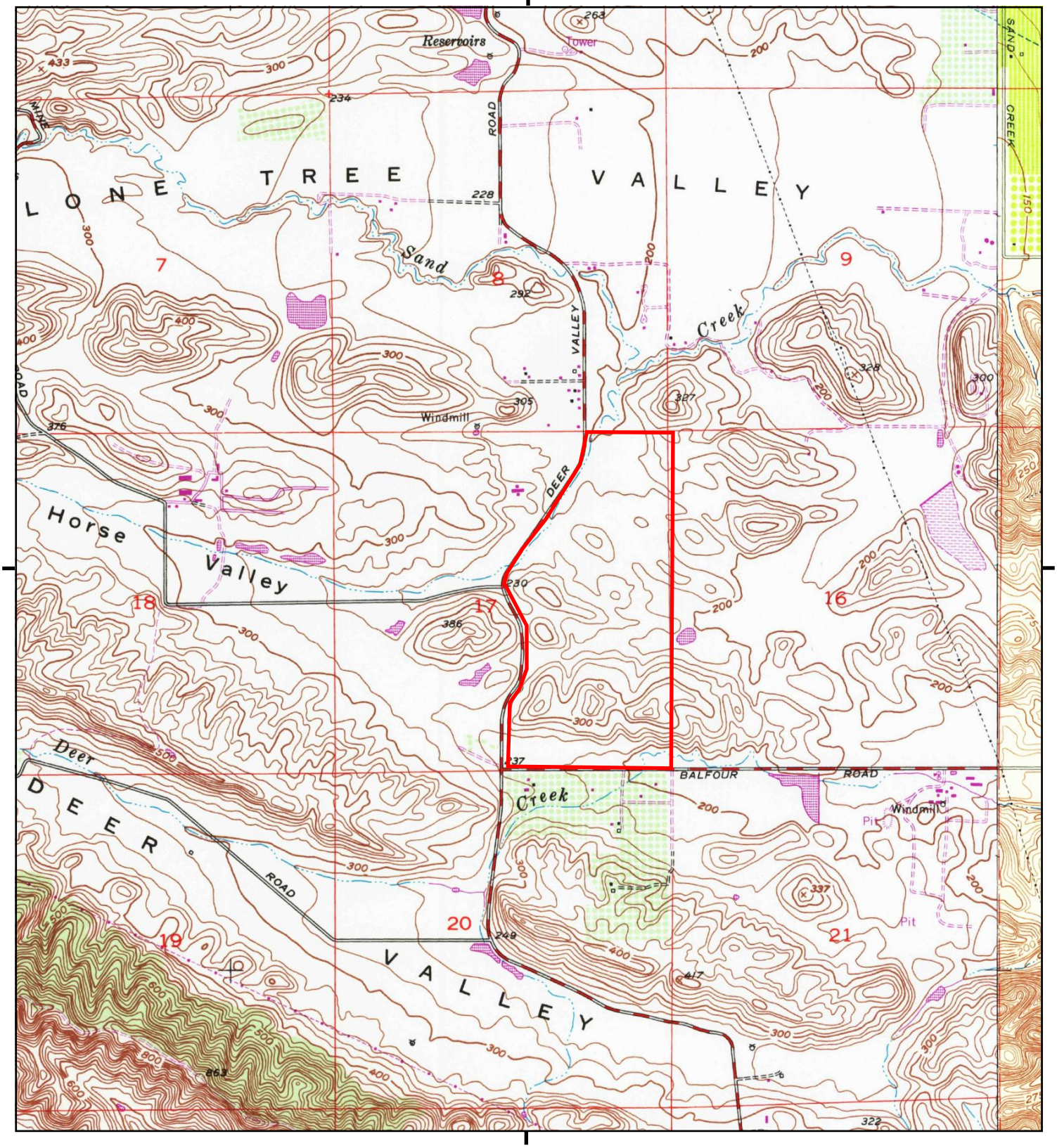
TP, Antioch South, 1968, 7.5-minute
E, Brentwood, 1968, 7.5-minute

SITE NAME: Ginochio - Western Parcels
ADDRESS: Balfour Road
Brentwood, CA 94513
CLIENT: Engeo Inc.

N

# Historical Topo Map

1953, 1954




This report includes information from the following map sheet(s).

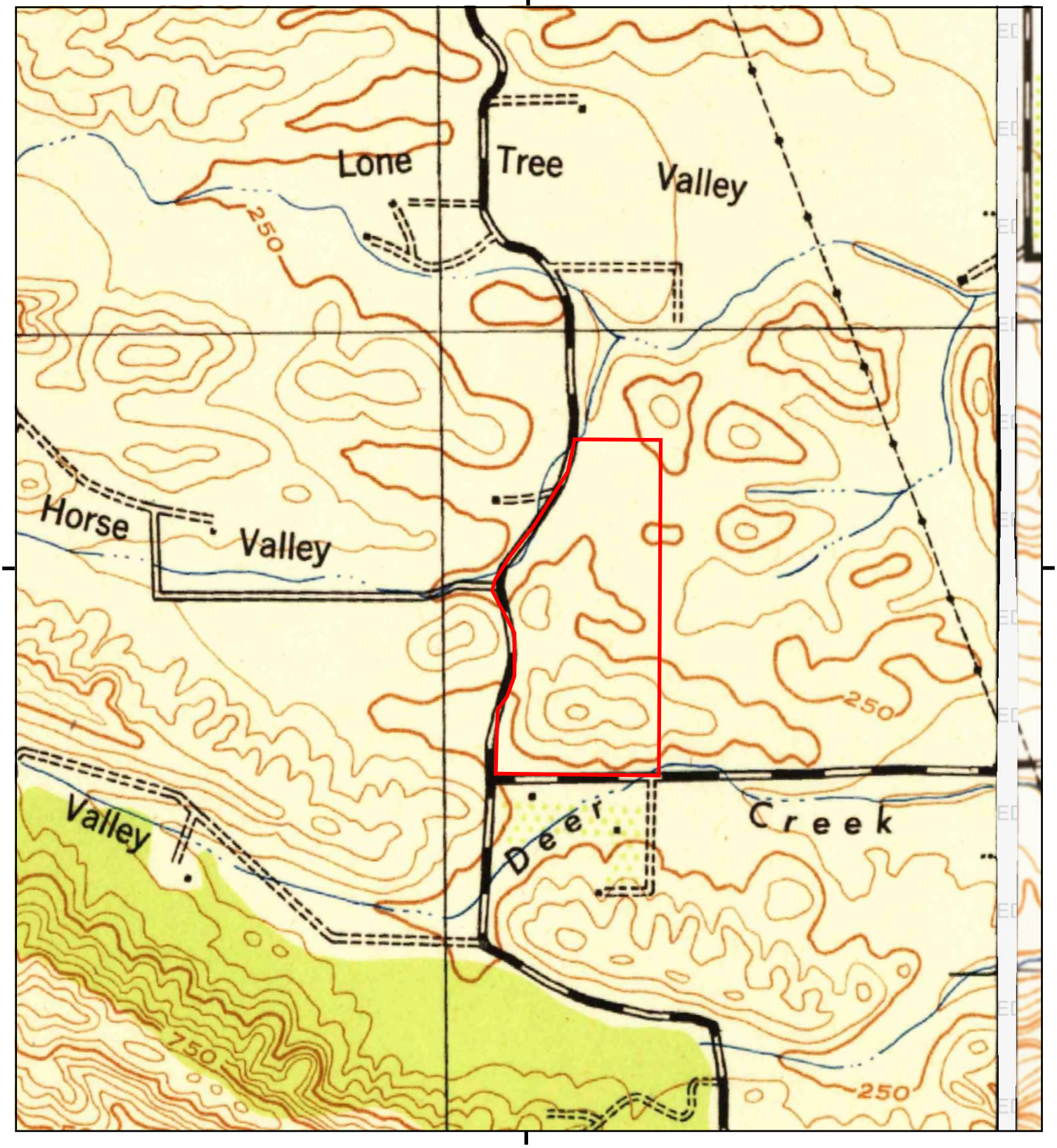
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Antioch South, 1953, 7.5-minute
E, Brentwood, 1954, 7.5-minute

SITE NAME: Ginochio - Western Parcels
ADDRESS: Balfour Road
Brentwood, CA 94513
CLIENT: Engeo Inc.

N




This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

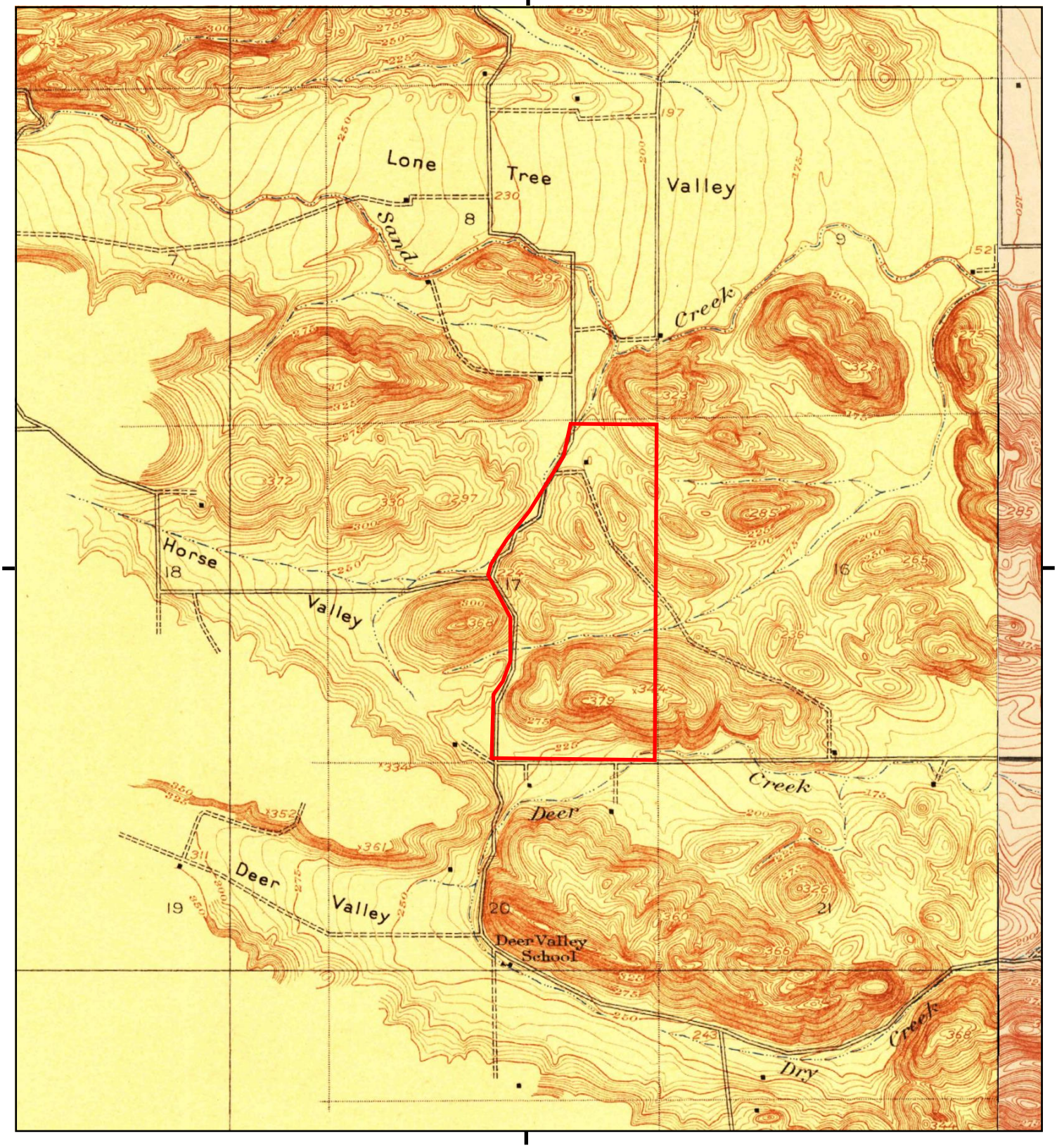
TP, Mt. Diablo, 1943, 15-minute
SE, BYRON, 1943, 15-minute

SITE NAME: Ginochio - Western Parcels
ADDRESS: Balfour Road
Brentwood, CA 94513
CLIENT: Engeo Inc.

N

# Historical Topo Map

1914, 1916




This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

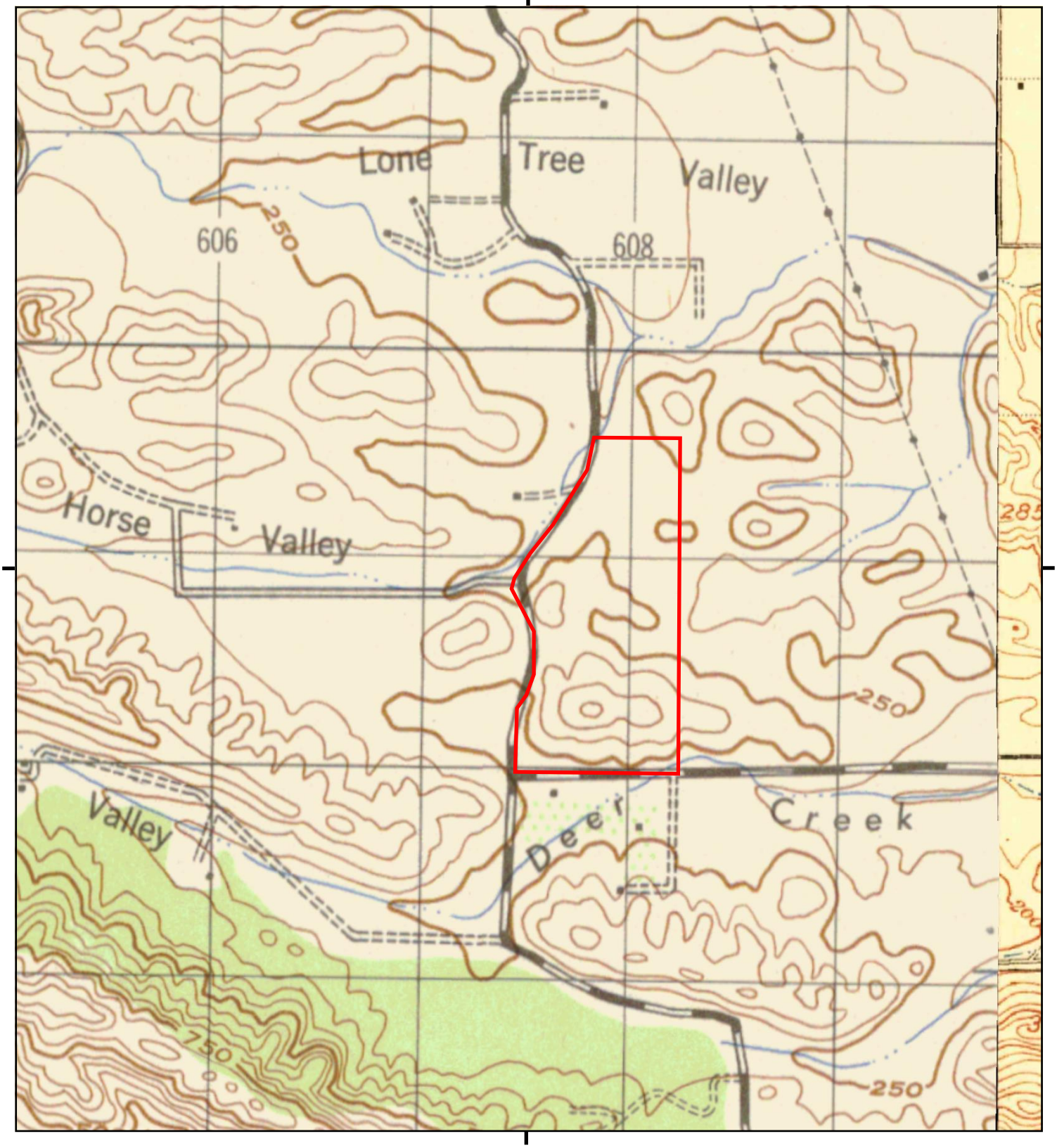
TP, Lone Tree Valley, 1916, 7.5-minute
E, Brentwood, 1914, 7.5-minute

SITE NAME: Ginochio - Western Parcels
ADDRESS: Balfour Road
Brentwood, CA 94513
CLIENT: Engeo Inc.

N

# Historical Topo Map

1912, 1916




This report includes information from the following map sheet(s).

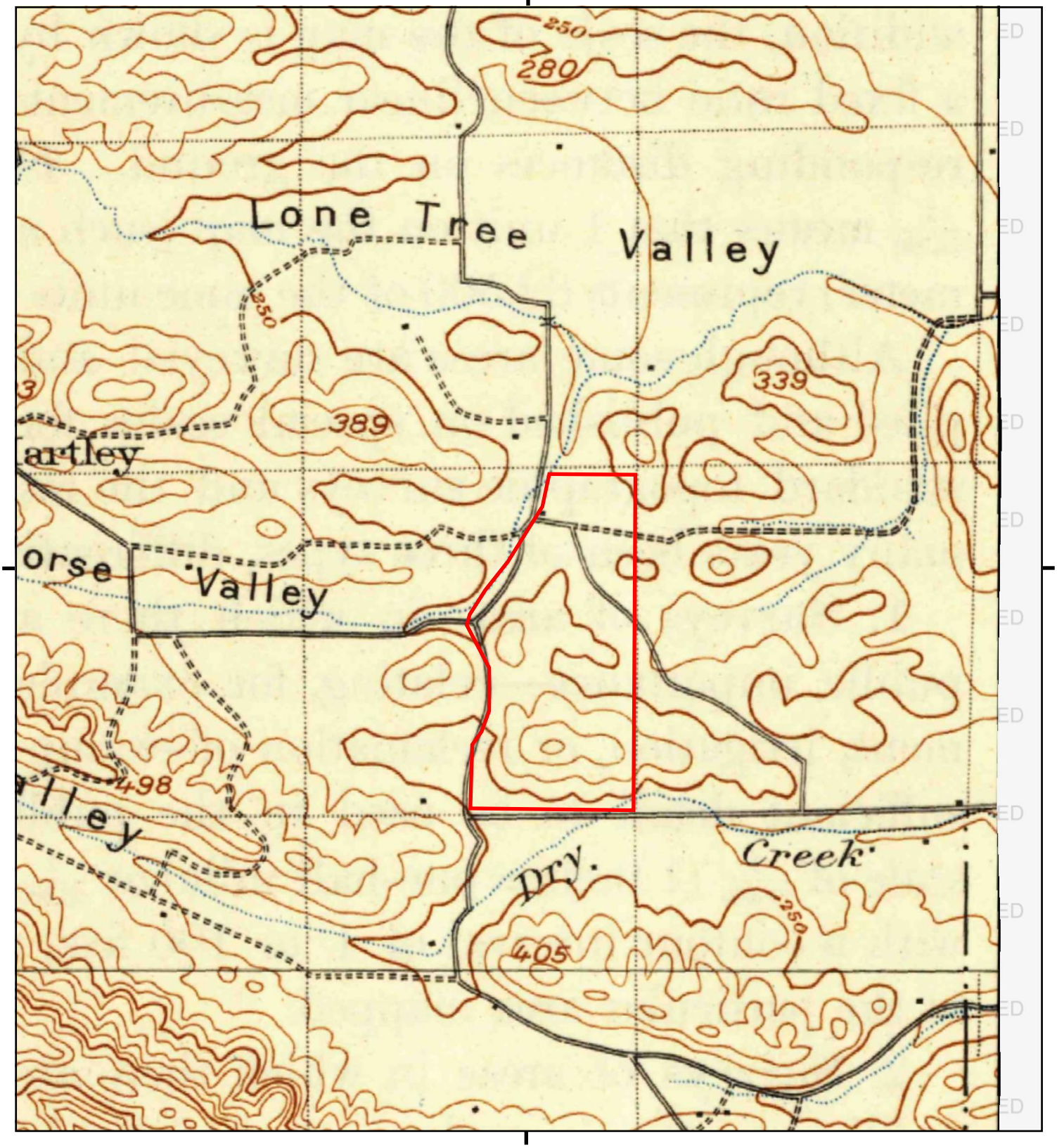
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, MT. DIABLO, 1912, 15-minute
SE, Byron, 1916, 15-minute

SITE NAME: Ginochio - Western Parcels
ADDRESS: Balfour Road
Brentwood, CA 94513
CLIENT: Engeo Inc.

N




This report includes information from the following map sheet(s).

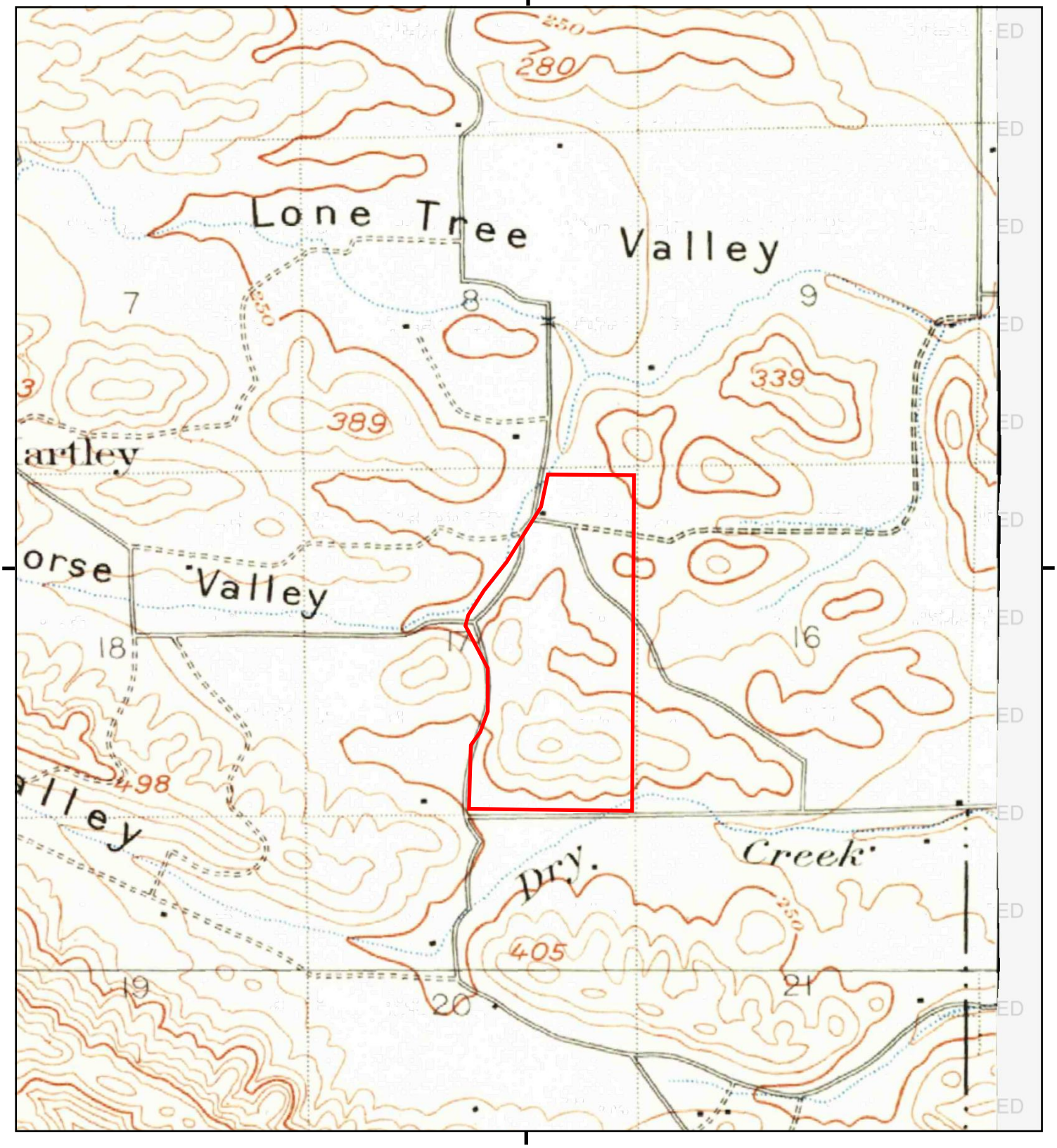
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Mt. Diablo, 1898, 15-minute

SITE NAME: Ginochio - Western Parcels
ADDRESS: Balfour Road
Brentwood, CA 94513
CLIENT: Engeo Inc.

N




This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Mt. Diablo, 1896, 15-minute

SITE NAME: Ginochio - Western Parcels
ADDRESS: Balfour Road
Brentwood, CA 94513
CLIENT: Engeo Inc.

N



# APPENDIX D

## ENVIRONMENTAL DATA RESOURCES, INC.

## Aerial Photo Decade Package

**Ginochio - Eastern Parcels**

Balfour Road

Brentwood, CA 94513

Inquiry Number: 5498334.18

November 30, 2018

# The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

# EDR Aerial Photo Decade Package

11/30/18

**Site Name:**

Ginochio - Eastern Parcels
Balfour Road
Brentwood, CA 94513
EDR Inquiry # 5498334.18

**Client Name:**

Engeo Inc.
2010 Crow Canyon Place
San Ramon, CA 94583
Contact: Ana Lua

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

## *Search Results:*

| *Year* | *Scale* | *Details* | *Source* |
|---|---|---|---|
| 2016 | 1"=750' | Flight Year: 2016 | USDA/NAIP |
| 2012 | 1"=750' | Flight Year: 2012 | USDA/NAIP |
| 2009 | 1"=750' | Flight Year: 2009 | USDA/NAIP |
| 2006 | 1"=750' | Flight Year: 2006 | USDA/NAIP |
| 1998 | 1"=750' | Flight Date: August 22, 1998 | USDA |
| 1993 | 1"=750' | Acquisition Date: June 12, 1993 | USGS/DOQQ |
| 1982 | 1"=750' | Flight Date: July 05, 1982 | USDA |
| 1979 | 1"=750' | Flight Date: August 16, 1979 | USDA |
| 1966 | 1"=750' | Flight Date: May 15, 1966 | USDA |
| 1963 | 1"=750' | Flight Date: July 15, 1963 | EDR Proprietary Aerial Viewpoint |
| 1959 | 1"=750' | Flight Date: July 04, 1959 | USDA |
| 1950 | 1"=750' | Flight Date: March 12, 1950 | USDA |
| 1949 | 1"=750' | Flight Date: October 13, 1949 | USGS |
| 1939 | 1"=750' | Flight Date: June 28, 1939 | USDA |

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INQUIRY #: 5498334.18

YEAR: 2016

= 750'

N

EDR


INQUIRY #: 5498334.18
YEAR: 2012
= 750'
N
EDR



INQUIRY #: 5498334.18

YEAR: 2009

= 750'

N

EDR



INQUIRY #: 5498334.18

YEAR: 2006

= 750'

N

EDR



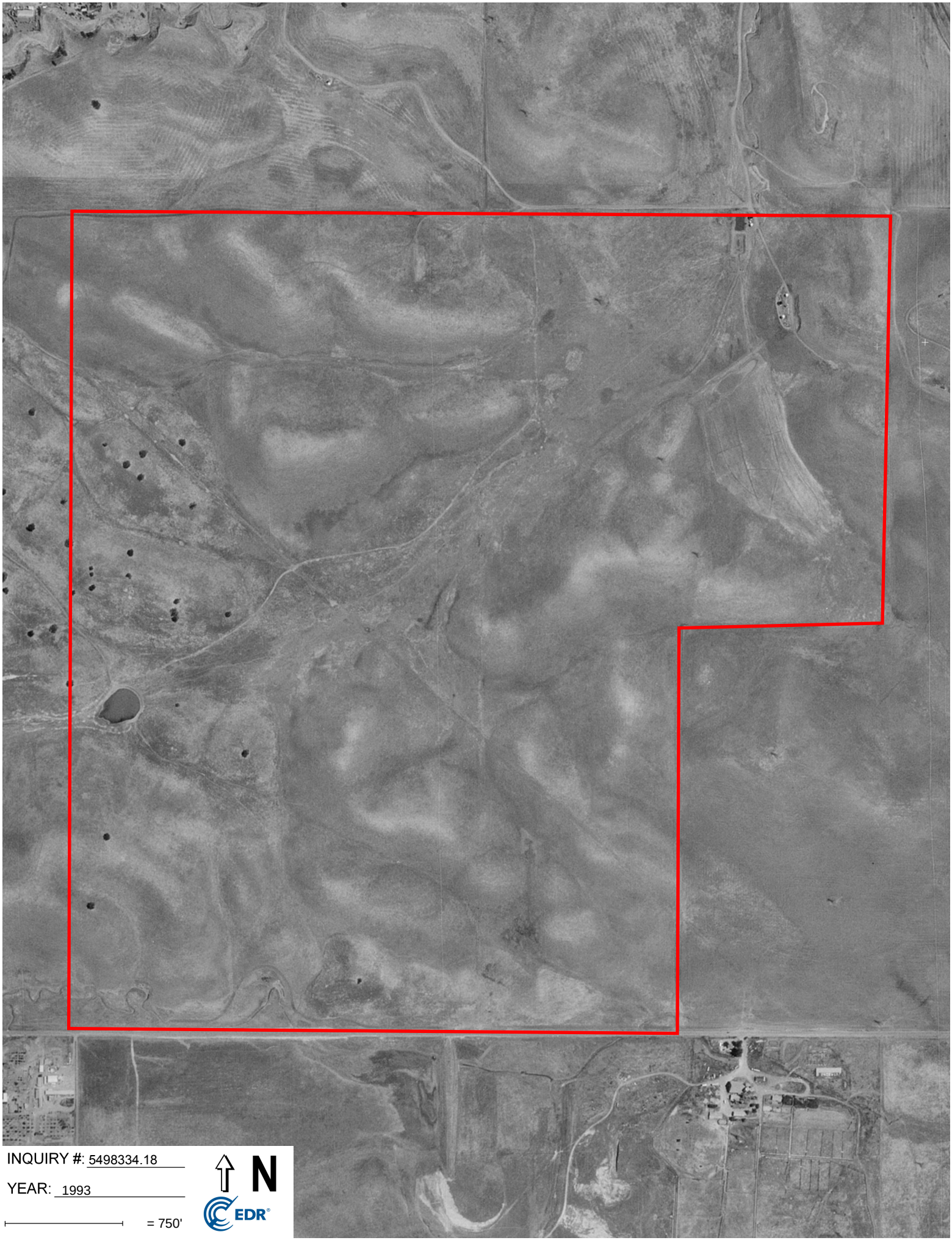
INQUIRY #: 5498334.18

YEAR: 1998

= 750'

N

EDR



INQUIRY #: 5498334.18

YEAR: 1993

= 750'

N

EDR


INQUIRY #: 5498334.18
YEAR: 1982
= 750'
N
EDR



INQUIRY #: 5498334.18

YEAR: 1979

= 750'

N

EDR



INQUIRY #: 5498334.18

YEAR: 1966

= 750'

N

EDR



INQUIRY #: 5498334.18

YEAR: 1963

= 750'

N

EDR



INQUIRY #: 5498334.18

YEAR: 1959

= 750'

N

EDR



INQUIRY #: 5498334.18

YEAR: 1950

= 750'

N

EDR


INQUIRY #: 5498334.18
YEAR: 1949
= 750'
N
EDR


INQUIRY #: 5498334.18
YEAR: 1939
= 750'
N
EDR

**Ginochio - Western Parcels**

Balfour Road

Brentwood, CA 94513

Inquiry Number: 5498334.9

December 04, 2018

# The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

# EDR Aerial Photo Decade Package

12/04/18

**Site Name:**

Ginochio - Western Parcels
Balfour Road
Brentwood, CA 94513
EDR Inquiry # 5498334.9

**Client Name:**

Engeo Inc.
2010 Crow Canyon Place
San Ramon, CA 94583
Contact: Ana Lua

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

## *Search Results:*

| *Year* | *Scale* | *Details* | *Source* |
|---|---|---|---|
| 2016 | 1"=750' | Flight Year: 2016 | USDA/NAIP |
| 2012 | 1"=750' | Flight Year: 2012 | USDA/NAIP |
| 2009 | 1"=750' | Flight Year: 2009 | USDA/NAIP |
| 2006 | 1"=750' | Flight Year: 2006 | USDA/NAIP |
| 1998 | 1"=750' | Flight Date: August 22, 1998 | USDA |
| 1993 | 1"=750' | Acquisition Date: June 12, 1993 | USGS/DOQQ |
| 1982 | 1"=750' | Flight Date: July 05, 1982 | USDA |
| 1979 | 1"=750' | Flight Date: August 16, 1979 | USDA |
| 1966 | 1"=750' | Flight Date: May 20, 1966 | USDA |
| 1963 | 1"=750' | Flight Date: July 15, 1963 | EDR Proprietary Aerial Viewpoint |
| 1958 | 1"=750' | Flight Date: August 09, 1958 | USDA |
| 1950 | 1"=750' | Flight Date: March 12, 1950 | USDA |
| 1949 | 1"=750' | Flight Date: October 13, 1949 | USGS |
| 1939 | 1"=750' | Flight Date: June 28, 1939 | USDA |

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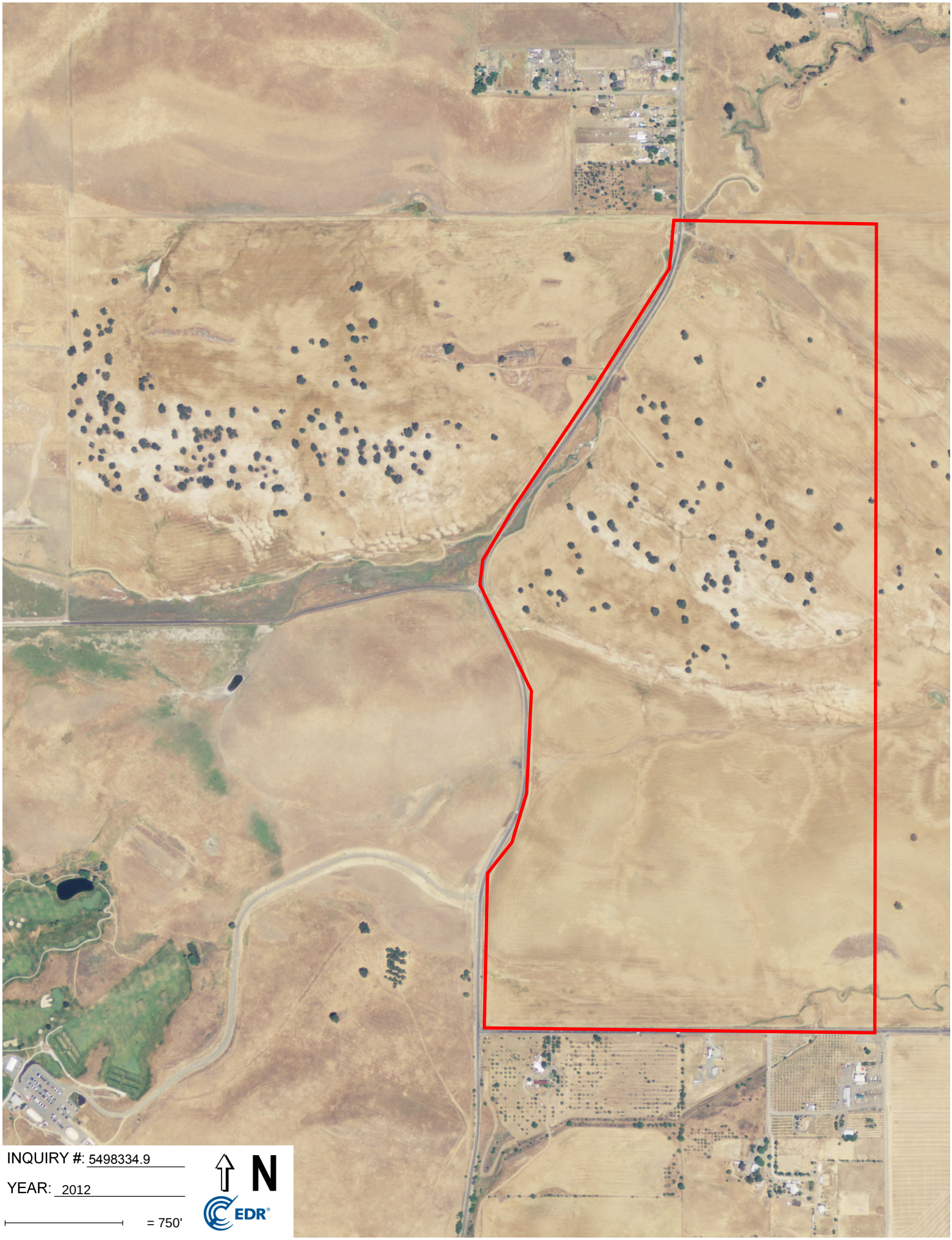

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INQUIRY #: 5498334.9
YEAR: 2016
= 750'
N
EDR



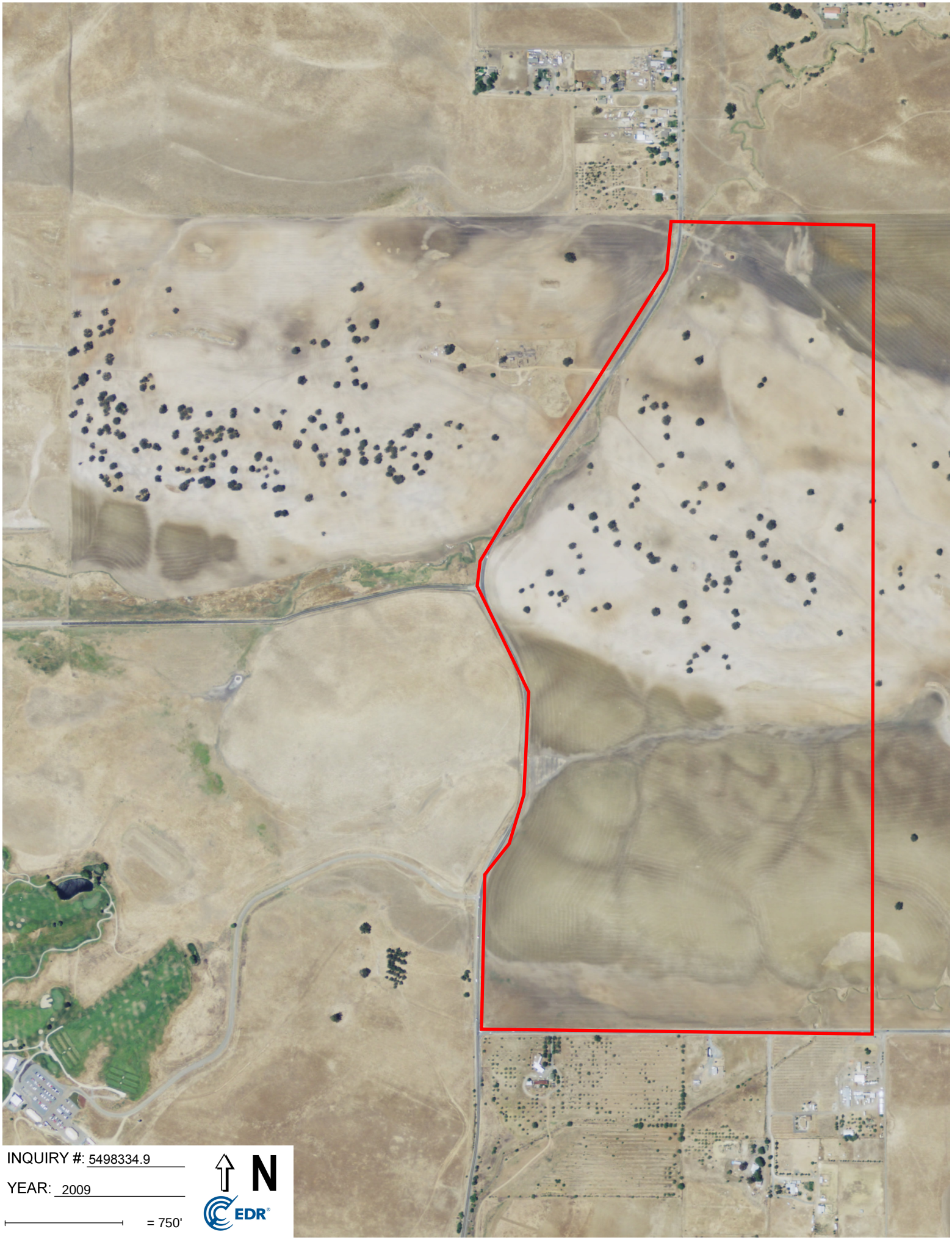
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YEAR: 2012

= 750'

N

EDR


INQUIRY #: 5498334.9
YEAR: 2009
= 750'
N
EDR


INQUIRY #: 5498334.9
YEAR: 2006
= 750'
N
EDR



INQUIRY #: 5498334.9

YEAR: 1998

= 750'

N

EDR


INQUIRY #: 5498334.9
YEAR: 1993
= 750'
N
EDR



INQUIRY #: 5498334.9

YEAR: 1982

= 750'

N

EDR


INQUIRY #: 5498334.9
YEAR: 1979
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N
EDR



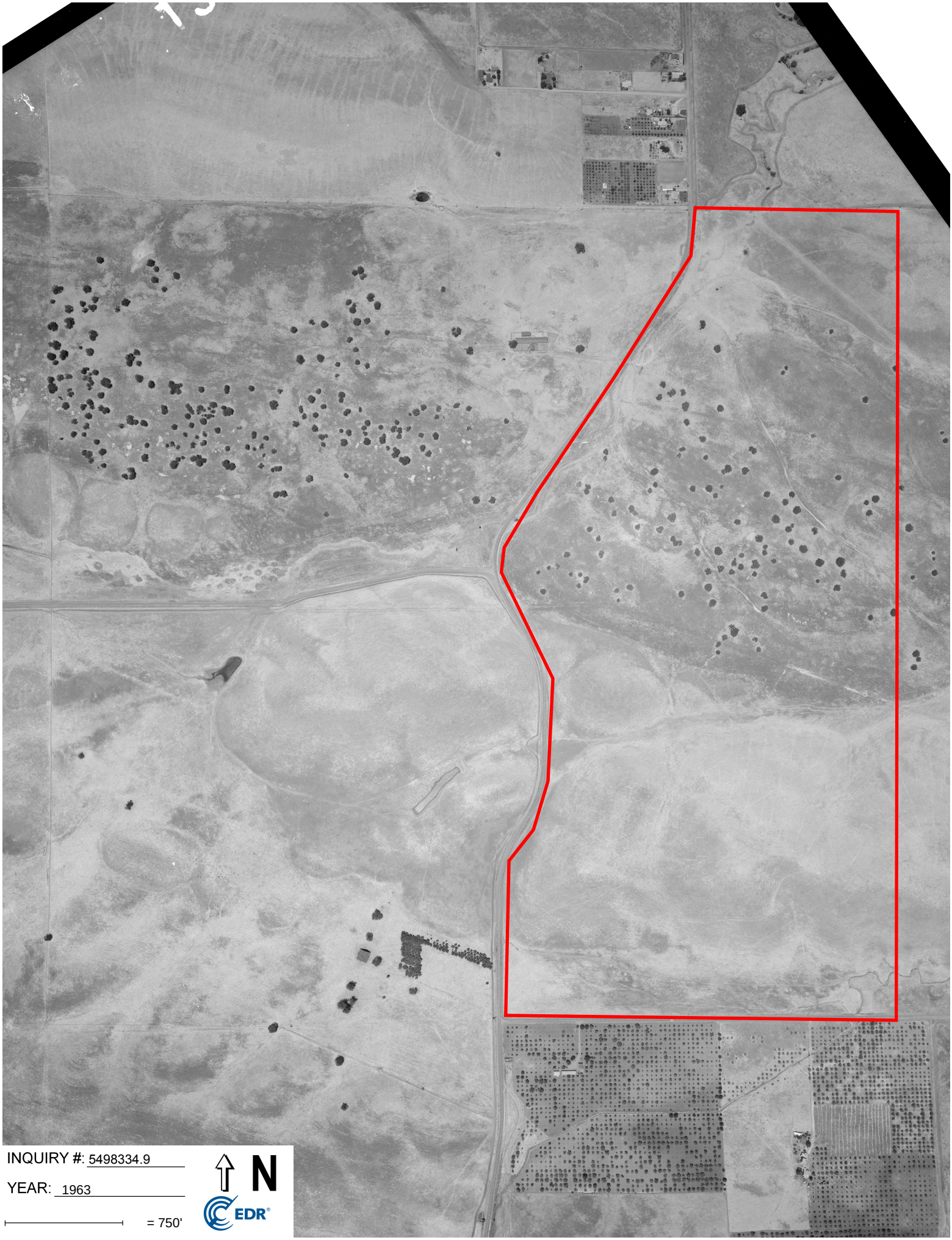
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YEAR: 1966

= 750'

N

EDR



INQUIRY #: 5498334.9

YEAR: 1963

= 750'

N

EDR



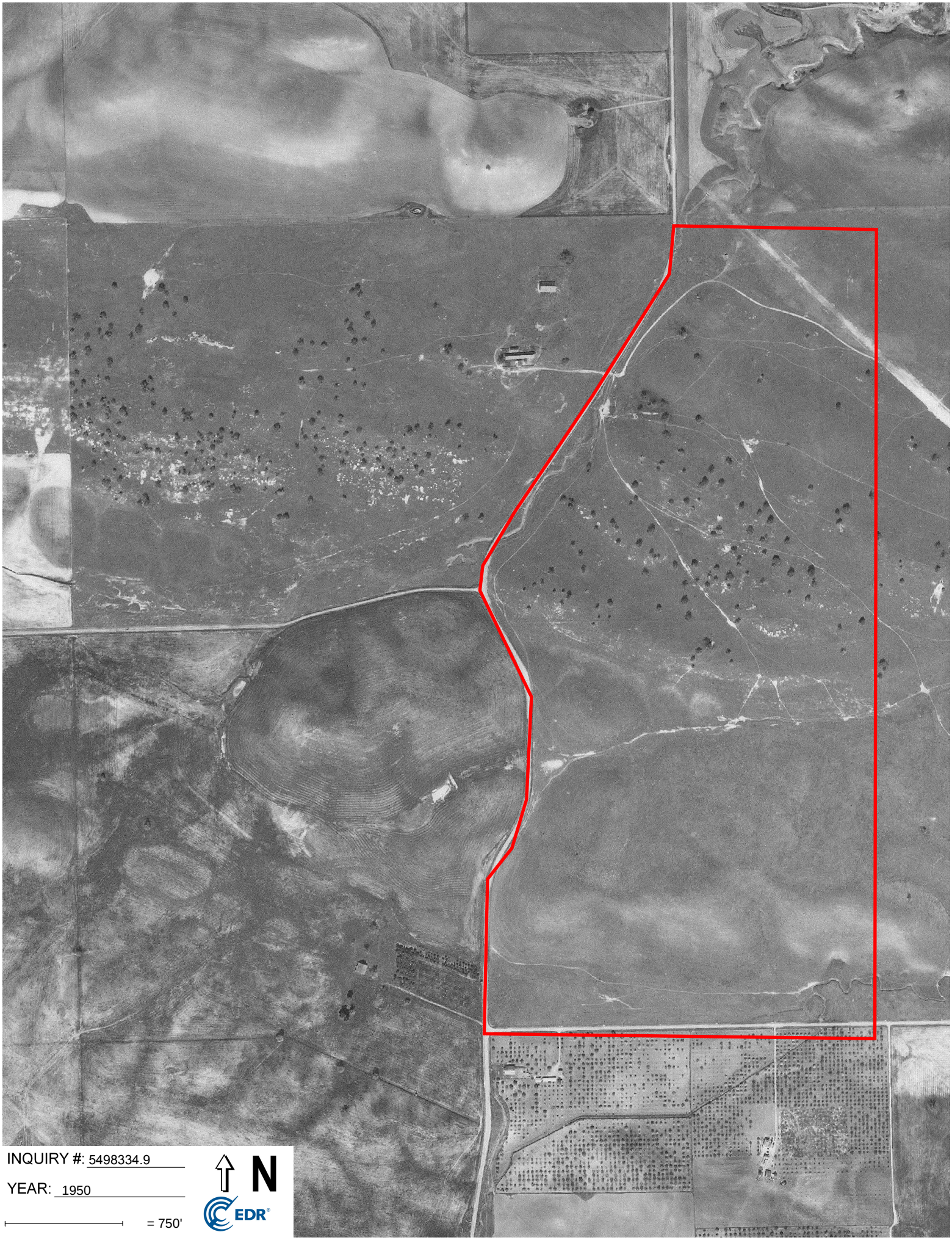
INQUIRY #: 5498334.9

YEAR: 1958

= 750'

N

EDR



INQUIRY #: 5498334.9

YEAR: 1950

= 750'

N

EDR


INQUIRY #: 5498334.9
YEAR: 1949
= 750'
N
EDR



INQUIRY #: 5498334.9

YEAR: 1939

= 750'

N

EDR



# APPENDIX E

## ENVIRONMENTAL DATA RESOURCES, INC.

## City Directory

**Ginochio - Eastern Parcels**
Balfour Road
Brentwood, CA 94513

Inquiry Number: 5498334.14
December 04, 2018

# The EDR-City Directory Image Report

EDR® Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

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**Executive Summary**

**Findings**

**City Directory Images**

***Thank you for your business.***
Please contact EDR at 1-800-352-0050
with any questions or comments.

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# EXECUTIVE SUMMARY

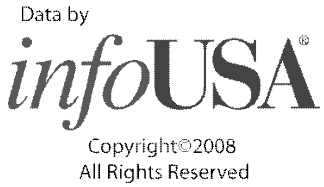
## DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

## RECORD SOURCES

EDR's Digital Archive combines historical directory listings from sources such as Cole Information and Dun & Bradstreet. These standard sources of property information complement and enhance each other to provide a more comprehensive report.

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## RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

| Year | Target Street | Cross Street | Source |
|---|---|---|---|
| 2014 | ☑ | ☑ | EDR Digital Archive |
| 2010 | ☑ | ☑ | EDR Digital Archive |
| 2005 | ☑ | ☑ | EDR Digital Archive |
| 2000 | ☑ | ☑ | EDR Digital Archive |
| 1995 | ☑ | ☐ | EDR Digital Archive |
| 1992 | ☑ | ☑ | EDR Digital Archive |
| 1989 | ☑ | ☑ | Haines Criss-Cross Directory |
| 1985 | ☑ | ☐ | Haines Criss-Cross Directory |
| 1980 | ☑ | ☐ | Haines Criss-Cross Directory |
| 1975 | ☑ | ☐ | Haines Criss-Cross Directory |

# FINDINGS

## TARGET PROPERTY STREET

Balfour Road
Brentwood, CA 94513

| *Year* | *CD Image* | *Source* |
|---|---|---|
| **BALFOUR RD** | | |
| 2014 | pg A1 | EDR Digital Archive |
| 2010 | pg A3 | EDR Digital Archive |
| 2005 | pg A5 | EDR Digital Archive |
| 2000 | pg A7 | EDR Digital Archive |
| 1995 | pg A9 | EDR Digital Archive |
| 1992 | pg A10 | EDR Digital Archive |
| 1989 | pg A12 | Haines Criss-Cross Directory |
| 1989 | pg A13 | Haines Criss-Cross Directory |
| 1985 | pg A15 | Haines Criss-Cross Directory |
| 1985 | pg A16 | Haines Criss-Cross Directory |
| 1980 | pg A17 | Haines Criss-Cross Directory |
| 1975 | pg A18 | Haines Criss-Cross Directory |
| 1975 | pg A19 | Haines Criss-Cross Directory |

# FINDINGS

## CROSS STREETS

| *Year* | *CD Image* | *Source* | |
|---|---|---|---|
| **DEER VALLEY RD** | | | |
| 2014 | pg. A2 | EDR Digital Archive | |
| 2010 | pg. A4 | EDR Digital Archive | |
| 2005 | pg. A6 | EDR Digital Archive | |
| 2000 | pg. A8 | EDR Digital Archive | |
| 1995 | - | EDR Digital Archive | Target and Adjoining not listed in Source |
| 1992 | pg. A11 | EDR Digital Archive | |
| 1989 | pg. A14 | Haines Criss-Cross Directory | |
| 1985 | - | Haines Criss-Cross Directory | Street not listed in Source |
| 1980 | - | Haines Criss-Cross Directory | Street not listed in Source |
| 1975 | - | Haines Criss-Cross Directory | Street not listed in Source |

# City Directory Images

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | EDR Digital Archive |

# BALFOUR RD 2014

| | |
|---|---|
| 100 | HARRIS MARK |
| 200 | GUZMAN, ARACELI |
| 260 | OCCUPANT UNKNOWN, |
| 280 | FIONAS FARM |
| | HIBBARD, FIONA R |
| 300 | B & M FARMING PARTNERS |
| | UNIVERSAL LAWN & PEST MGT |
| 320 | DELLINGER, JERRY |
| 2201 | BRENTWOOD ORTHODONTICS |
| | DELTA BAY DENTAL GROUP |
| | HALL LAJUAN DDS |
| | HALL LAJUAN M DDS |
| | JEFFRY, GERALD |
| | MCMILLAN DANIEL J DDS |
| | MICHAEL ARROW DMD |
| | PERFECT IMPLANT LLC |
| | RONTAL & WEDEKING DDS INC |
| | SCHNEIDER MICHAEL J DDS |
| 2221 | ALEXANDER PROPERTIES LLC |
| | BALFOUR DERMATOLOGY & DAY SPA |
| | HABIB DESAI & RIZVI DNTL CORP |
| | PARKWAY DENTAL CARE |
| | RIZVI IMRAN DDS |
| | ROBERT E BEER MD INC |
| 2250 | BRENTWOOD SERVICE STATION LP |
| 2251 | BANK AGRICULTURE AND COMMERCE |
| | ECC BANK |
| 2261 | BELLROSE |
| | BLUSH SALON INC |
| | DIGGERS DINER INC |
| | ISSAS LLC |
| | JASPERDEEP & RACHENDEEP LLC |
| | LUXURY NAILS |
| | MI JALISCOS TAQUERIA |
| | NUMERO UNO TAQUERIA |
| | SIENA CLEANERS |
| 2270 | VIC STEWARTS INC |
| 2271 | WALGREEN CO |
| 2351 | MCDONALDS |
| 2371 | CHEVRON CORPORATION |
| | GAS STATION |

| Target Street | Cross Street | Source |
|---|---|---|
| - | ✓ | EDR Digital Archive |

# DEER VALLEY RD 2014

| | |
|---|---|
| 5601 | DR QUOC D NGUYEN DO |
| | HSIAO-PIN CHIN MD |
| | KAISER FOUNDATION HOSPITALS |
| | LETHA JAYAKRISHNAN MD |
| | VOLTAIRE PAJE MD |
| 6275 | DEJESUS, EDWARD D |
| | EDWARD DDEJESUS |
| 6459 | MIKOLAJCZYK, MARTIN P |
| 6801 | BARTLETT, WALTER A |
| | C S B TELECOM SERVICES |
| 6813 | OCCUPANT UNKNOWN, |
| 6911 | OCCUPANT UNKNOWN, |
| 6921 | CARDOZA, JULIO C |
| 6931 | ESTRELLA, ROBERT J |
| 6951 | SEXTON, RAYMOND |
| 9050 | SCHNEIDER, MICHAEL J |
| 9225 | MCCAULEY, SEAN |
| | SEAN MCCAULEY INVESTMENTS INC |
| 9235 | HALL, STEVE |
| 9601 | LUCIA OLIVE FARM LLC |
| | MONTE ALBERS TRUSTEE UNDER |
| | OCCUPANT UNKNOWN, |
| 9609 | ROBERTS, JOHN A |
| 9615 | OCCUPANT UNKNOWN, |
| 9621 | HENDERSON, RICHARD E |
| 9641 | FORMAN, BEN A |
| | JULIE EMB & OTHER CUTE THINGS |
| 9651 | LIMNIOS, JOHN J |
| 9671 | SUNGA, RICARDO J |
| 9701 | AWAKENING A CTR EXPLORNG LVNG |
| | AWAKENING RETREAT CENTER |

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | EDR Digital Archive |

# BALFOUR RD 2010

| | |
|---|---|
| 200 | CARRANZA, ARACELI |
| 260 | GOMEZ, BRUCE J |
| 280 | FIONAS FARM |
| | HIBBARD, FIONA R |
| 300 | U HAUL NEIGHBORHOOD DLR BRENTW |
| | UNIVERSAL LAWN & PEST MGT |
| 320 | DELLINGER, JERRY |
| 2201 | BRENTWOOD ORTHODONTICS |
| | DELTA BAY DENTAL GROUP |
| | DMH PROPERTY MANAGEMENT LLC |
| | HALL LAJUAN DDS |
| | HALL LAJUAN M DDS |
| | HALL, LAJUAN |
| | MICHAEL ARROW DMD |
| | PERFECT IMPLANT LLC |
| | RONTAL & WEDEKING DDS INC |
| 2221 | ALEXANDER PROPERTIES LLC |
| | BALFOUR DERMATOLOGY & DAY SPA |
| | BEER ROBERT E MD INC |
| | HABIB DESAI & RIZVI DNTL CORP |
| | PARKWAY DENTAL CARE |
| 2250 | BP NORTH AMERICA |
| | BRENTWOOD SERVICE STATION LP |
| 2251 | BANK AGRICULTURE AND COMMERCE |
| 2261 | BELLROSE |
| | DIGGERS DINER INC |
| | ISSAS LLC |
| | ITS A GRIND |
| | LUXURY NAILS |
| | NUMERO UNO TAQUERIA |
| | SIENA CLEANERS |
| 2270 | VIC STEWARTS INC |
| 2271 | WALGREEN CO |
| 2371 | CHEVRON CORPORATION |
| | GAS STATION |

| Target Street | Cross Street | Source |
|---|---|---|
| - | ✓ | EDR Digital Archive |

# DEER VALLEY RD 2010

5601 KAISER FOUNDATION HEALTH PLAN
KAISER FOUNDATION HOSPITALS
6275 DEJESUS, EDWARD D
EDWARD DDEJESUS
6441 SPINELLI TRUCKING
6459 MIKOLAJCZYK, MARTIN P
6801 C S B TELECOM SERVICES
OCCUPANT UNKNOWN,
6813 FERRELL, CHARLES D
6911 GANNON, TIMOTHY
6921 CARDOZA, JULIO C
6931 ESTRELLA, ROBERT J
6951 CAMPOS, REY
9050 BOND, THOMAS W
CORNERSTONE DESIGN
SCHNEIDER MICHAEL J
9225 MCCAULEY, SEAN
SEAN MCCAULEY INVESTMENTS INC
9235 HALL, PRESTON S
9601 LUCIA OLIVE FARM LLC
MEL TRACY GROUP LLC
MONTE ALBERS TRUSTEE UNDER
OCCUPANT UNKNOWN,
9615 KUHN, HANS J
9621 HENDERSON, RICHARD E
9641 FORMAN, BEN A
JULIE EMB & OTHER CUTE THINGS
9651 LIMNIOS, KATERINA
9671 OCCUPANT UNKNOWN,
9701 AWAKENING A CTR EXPLORNG LVNG
INSTITUTE TRNSCNDENT AWARENESS

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | EDR Digital Archive |

# BALFOUR RD 2005

| | |
|---|---|
| 200 | LOWE, DAVID R |
| 260 | GOMEZ, LAVERNE |
| 280 | HIBBARD, FIONA R |
| | SERVANTS OF MARY IMMACULATE |
| 300 | BRENTWOOD RANCH FEED & PET SUP |
| | UNIVERSAL LAWN & PEST MGT |
| 1500 | JOES SUN RISE CONSTRUCTION |
| 2201 | MICHAEL ARROW DMD |

| Target Street | Cross Street | Source |
|---|---|---|
| - | ✓ | EDR Digital Archive |

# DEER VALLEY RD 2005

| | |
|---|---|
| 5601 | KAISER FOUNDATION HEALTH PLAN |
| 6275 | DEJESUS, SHARON M |
| | EDWARD DDEJESUS |
| 6441 | SPINELLI TRUCKING |
| 6459 | WENTWORTH, RICHARD A |
| 6801 | OCCUPANT UNKNOWN, |
| 6813 | OCCUPANT UNKNOWN, |
| 6911 | HAGEN, MARK D |
| 6921 | CARDOZA, JULIO C |
| 6931 | ESTRELLA, ROBERT M |
| 6951 | MARY, BOGGESS |
| 9050 | BOND, THOMAS W |
| 9225 | GOMES, GREG J |
| 9235 | HALL, PRESTON S |
| 9601 | MONTE ALBERS TRUSTEE UNDER |
| | OCCUPANT UNKNOWN, |
| 9621 | HENDERSON, RICHARD E |
| 9651 | OCCUPANT UNKNOWN, |
| 9671 | CARPENTER, DANIEL W |

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | EDR Digital Archive |

## BALFOUR RD 2000

| | |
|---|---|
| 100 | MJH COMPANY |
| 106 | OCCUPANT UNKNOWN, |
| 260 | SIKES, RICK |
| 270 | OCCUPANT UNKNOWN, |
| 300 | BRENTWOOD RANCH FEED & PET SUP |
| 320 | OCCUPANT UNKNOWN, |
| 1740 | BRENTWOOD CNTRY CLB PRTNERS LP |

| Target Street | Cross Street | Source |
| --- | --- | --- |
| - | ✓ | EDR Digital Archive |

## DEER VALLEY RD 2000

6275 EDWARD DDEJESUS
6441 SPINELLI TRUCKING
9225 MORALES, C
9235 HALL, PRESTON S
9601 OCCUPANT UNKNOWN,
9621 HENDERSON, RICHARD E
9671 CARPENTER, WAYNE

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | EDR Digital Archive |

# BALFOUR RD 1995

| | |
|---|---|
| 116 | OCCUPANT UNKNOWNN |
| 144 | OCCUPANT UNKNOWNN |
| 154 | OCCUPANT UNKNOWNN |
| 164 | OCCUPANT UNKNOWNN |
| 172 | OCCUPANT UNKNOWNN |
| 200 | LOWE, DARCY |
| 260 | FUTURE LIVESTOCK |
| | SIKES, RICK |
| 300 | BRENTWOOD RANCH FEED & PET SUP |
| | MCCAULEY, MARTIN |
| 1740 | BRENTWOOD COUNTRY CLUB |
| 2260 | TREAT, HERMAN |

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | EDR Digital Archive |

# BALFOUR RD 1992

| | |
|---|---|
| 116 | MCCLELLAND, WESLEY C |
| 164 | COX, KEVIN |
| 270 | ALDERSON, W H |

| Target Street | Cross Street | Source |
| --- | --- | --- |
| - | ✓ | EDR Digital Archive |

## DEER VALLEY RD 1992

9225 MORALES, C
9601 ALBERS, MONTE

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | Haines Criss-Cross Directory |

# BALFOUR RD 1989



BALFOUR RD 94513
BRENTWOOD

| | | | |
|---|---|---|---|
| 2 | XXXX | 00 | |
| 6D | REGAN Dani B | 634-1079 | |
| 8 | XXXX | 00 | |
| 22 | XXXX | 00 | |
| 40 | XXXX | 00 | |
| 60 | PARKHURST Larry J | 634-1629 | |
| 68 | XXXX | 00 | |
| 76 | RICHARDS Chas R | 634-3427 | |
| 78 | XXXX | 00 | |
| 88 | XXXX | 00 | |
| 98 | XXXX | 00 | |
| 106 | XXXX | 00 | |
| 116 | MCCLELLAND Wesley | 634-3614 | |
| 126 | PORTWOOD Hugh | 634-3861 | |
| 136 | XXXX | 00 | |
| 144 | XXXX | 00 | |
| 154 | PEREIRA Norman L | 634-3736 | +9 |
| 164 | COX Kevin | 634-7462 | 8 |
| 172 | WISELEY Freddie T | 634-2594 | |
| 202 | THOMAS Dee | 634-5669 | 4 |
| 212 | MYERS Douglas | 634-3689 | |
| 232 | XXXX | 00 | |
| 488 | VIEIRA R A | 634-4419 | |
| 500 | XXXX | 00 | |
| 502 | XXXX | 00 | |
| 505 | WOODGATE MBL HM PK | | |
| | ANDRADE Leroy | 634-4164 | 8 |
| | BAGNES Harry | 634-2599 | 4 |
| | BANKE Kathryn | 634-9017 | 8 |
| | BANKE Michael | 634-9017 | |
| | BARNABY F R | 634-4773 | 8 |
| | BARNES Paul E | 634-3159 | +9 |
| 110 | BARTHELD Roy F | 634-4522 | 0 |
| | BEASLEY Homer | 634-1524 | 8 |
| 93 | BELLI Albert S | 634-5819 | 0 |
| 41 | BILLECI Horace F | 634-5427 | |
| | CARLISLE Douglas E | 634-3197 | 1 |
| 67 | CARMONA Cornelio | 634-5236 | |
| | CARSON Heide | 634-8529 | 8 |
| | CASTEEL Edith | 634-7307 | 8 |
| | COMBS Haskel | 634-1564 | 6 |
| 72 | CROCKETT Roy E | 634-1488 | 0 |
| 102 | DUKE Frank L | 634-5987 | 0 |
| | DYER Alvin | 634-2134 | 5 |
| | FARR Debra | 634-0283 | +9 |
| | FARR Kenneth | 634-0283 | +9 |
| 8 | FERRARO Karen D | 634-5296 | 0 |
| 38 | GIMENEZ Joe W | 634-3609 | |
| 109 | GRIGGS Arnold | 634-5349 | 2 |
| 63 | GRIVET Pete | 634-1581 | 1 |
| | HALVERSON R J | 634-3422 | 6 |
| 25 | HANISCH Curtis | 634-2970 | |
| 97 | HARDMAN Edgar G | 634-2875 | |
| | HAWKINS Dorothy | 634-4079 | 5 |
| | HAWKINS George | 634-4079 | |
| | HENDERSON Betty | 634-9509 | +9 |
| | HENDERSON Elmer | 634-9509 | +9 |
| | HENDERSON Jas H | 634-4114 | 8 |
| 100 | HICKMAN A K | 634-3657 | |
| | HOPPNER Rusty | 634-2946 | 6 |
| 98 | ISLER Edw J | 634-2264 | |
| 53 | JUST Fred E | 634-1232 | |
| 61 | KELLEY Lois | 634-3110 | 0 |
| 70 | KILLINGSWORTH Wm | 634-4281 | |
| 89 | LEWIS Daniel | 634-4066 | |
| | LOE Mildred | 634-4356 | +9 |
| | LOE Ray | 634-4356 | +9 |
| | LOUGHLEY John R | 634-7001 | 7 |

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | Haines Criss-Cross Directory |

# BALFOUR RD 1989



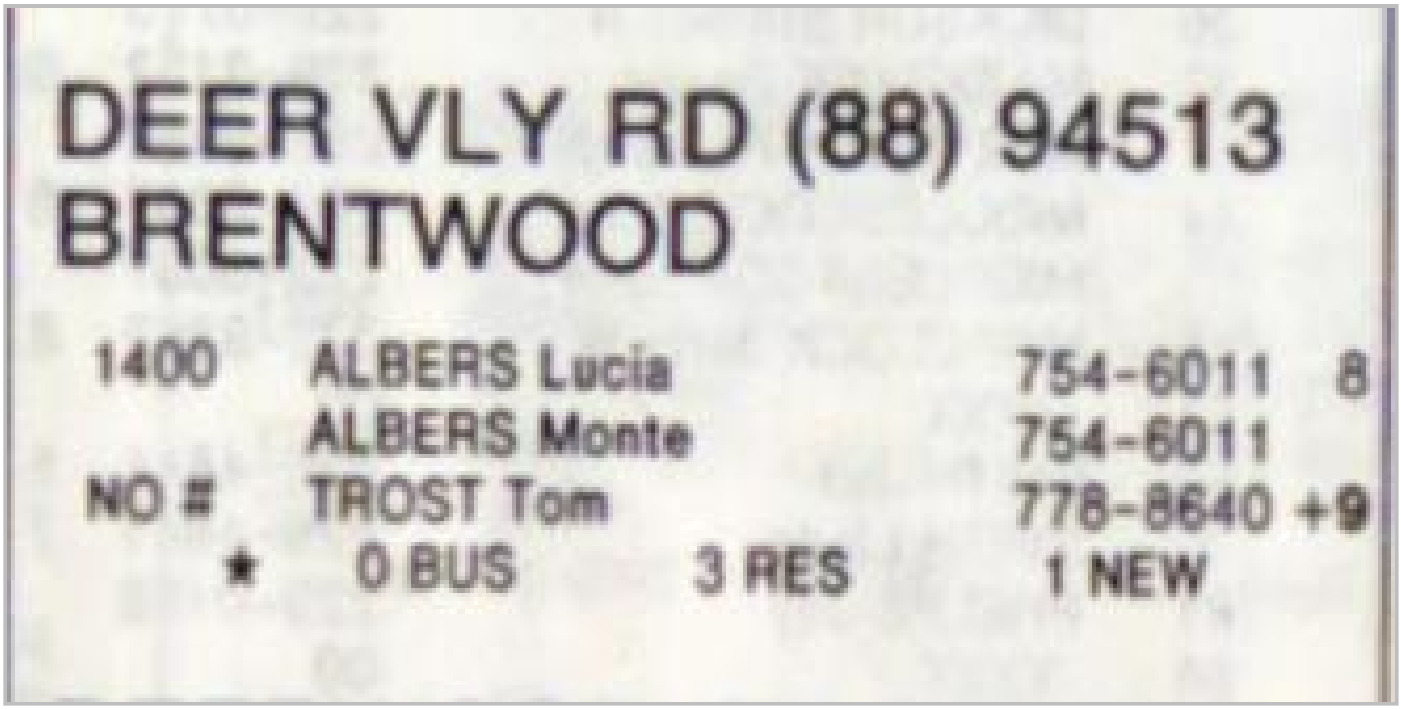
..BALFOUR RD 94513 CONT..

| | | | |
|---|---|---|---|
| 20 | MCCLELLAN Roy | 634-5675 | 0 |
| | MECCA Richard R | 634-7098 | 6 |
| 29 | MICKELSON Carl C | 634-4774 | 2 |
| 32 | MILICH Rudolph | 634-4012 | 1 |
| | MISEL Elwood | 634-5121 | |
| | MISEL Eva | 634-5121 | |
| 103 | MUSGROVE Marvin M | 634-2287 | 0 |
| | NASH Robert E | 634-4538 | 6 |
| 107 | ONEAL Ted R | 634-2381 | |
| | POLLARD Ralph W | 634-4838 | 2 |
| | PORTER J E | 634-3463 | 5 |
| 16 | RISSER Ethel A | 634-2640 | |
| 5 | ROSNER Shirley | 634-2703 | |
| | SABER John J | 634-2846 | 4 |
| | SLADKY Joe O | 634-6699 | 4 |
| | SMITH Lillian | 634-3443 | 5 |
| 111 | SMITH Wm Oscar | 634-1468 | |
| | SPEER Shaun | 634-0214 | 5 |
| 31 | STONE R W | 634-3745 | |
| | SULLIVAN Clyde E | 634-9860 | +9 |
| | THOMPSON Arthur R | 634-5460 | 3 |
| | THORNAPPLE Wilbur T | 634-5407 | 5 |
| | WARD Lester | 634-4128 | |
| | WARD Vesta Grey | 634-4128 | 8 |
| 40 | WAUGH Bette L | 634-3064 | |
| 57 | WEBB Delma M | 634-2538 | |
| | WHITE Ralph W | 634-8355 | 8 |
| 22 | WHITTEN Vernon M | 634-5953 | 0 |
| **36** | **★WOODGATE MBL HM PK** | **634-2626** | |
| 90 | WOODS Ralph L | 634-3495 | |
| | ZACHARY Troy Jr | 634-6310 | 2 |
| **505** | | | |
| 634 | PROBST Wm S | 634-4453 | |
| 644 | REMMERS Barbara A | 634-2824 | |
| | REMMERS Bobby Lee | 634-2824 | |
| 654 | KENDALL Glenn | 634-4329 | 4 |
| 664 | XXXX | 00 | |
| 674 | JACKSON B D | 634-2019 | |
| 684 | MAGANA Mario | 634-1075 | 7 |
| 694 | RODGERS Paul | 634-1835 | 5 |
| 704 | SMITH Richard F | 634-5138 | 1 |
| 714 | XXXX | 00 | |
| 715 | KYSH Melvin E | 634-1114 | 6 |
| 744 | XXXX | 00 | |
| **1091** | **★DELTA BAY MUSTANG** | **634-7776** | 7 |
| 1202 | GANGWER Phillip | 634-3855 | 8 |
| NO # | ALDERSON W Howard | 757-6605 | |
| **NO #** | **★BRENTWD RANCH EGGS** | **634-0404** | 8 |
| NO # | CONTINENTE Tony | 634-3946 | |
| NO # | DEJESUS G | 634-5080 | +9 |
| NO # | GALLEGOS Hector | 634-7689 | +9 |
| **NO #** | **★GINOCHIO LIVE STOCK** | **757-2600** | |
| NO # | GOMEZ R M | 754-1460 | |
| **NO #** | **★HAFEN CONSTRUCTION** | **634-9103** | +9 |
| NO # | HARRIS Brad | 754-0395 | |
| NO # | HARRIS Mark | 757-2309 | 0 |
| NO # | HINE Orville K | 634-6661 | 2 |
| NO # | HOFFNER Robt J | 634-4007 | |
| NO # | JOHNSON Harry | 634-3266 | 6 |
| NO # | LOWE Dave | 757-7474 | |
| NO # | MAGGIORE F A | 634-4991 | |
| NO # | MAGGIORE Franklin | 634-4176 | |
| NO # | MCCAULEY Martin | 754-7662 | |
| NO # | MCCAULEY Sean | 757-2799 | +9 |
| NO # | MCCURLEY Paul | 634-3141 | 7 |
| NO # | PEDERSEN Norman R | 634-3866 | |
| NO # | POERIO Vincent J | 634-1610 | |
| NO # | POLARI Frank Jr | 634-4386 | |
| NO # | PUENTE Hilario | 634-1509 | |
| NO # | RIOS Roy | 634-2920 | 8 |
| NO # | ROIX Douglas J | 634-1739 | |
| NO # | RUIZ Daniel Jr | 634-9735 | +9 |
| NO # | SHAHAN Carol | 634-2060 | |
| NO # | SHAHAN Clarence R | 634-2060 | |
| NO # | SOITE Fred | 634-3619 | |
| NO # | TUBIYYA Michel | 778-1890 | +9 |
| NO # | WONG Kenneth F | 634-3096 | |

★ 5 BUS 138 RES 15 NEW

| Target Street | Cross Street | Source |
|---|---|---|
| - | ✓ | Haines Criss-Cross Directory |

## DEER VALLEY RD 1989



DEER VLY RD (88) 94513
BRENTWOOD

| | | | |
|---|---|---|---|
| 1400 | ALBERS Lucia | 754-6011 | 8 |
| | ALBERS Monte | 754-6011 | |
| NO # | TROST Tom | 778-8640 | +9 |
| * | 0 BUS 3 RES | 1 NEW | |

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | Haines Criss-Cross Directory |

# BALFOUR RD 1985

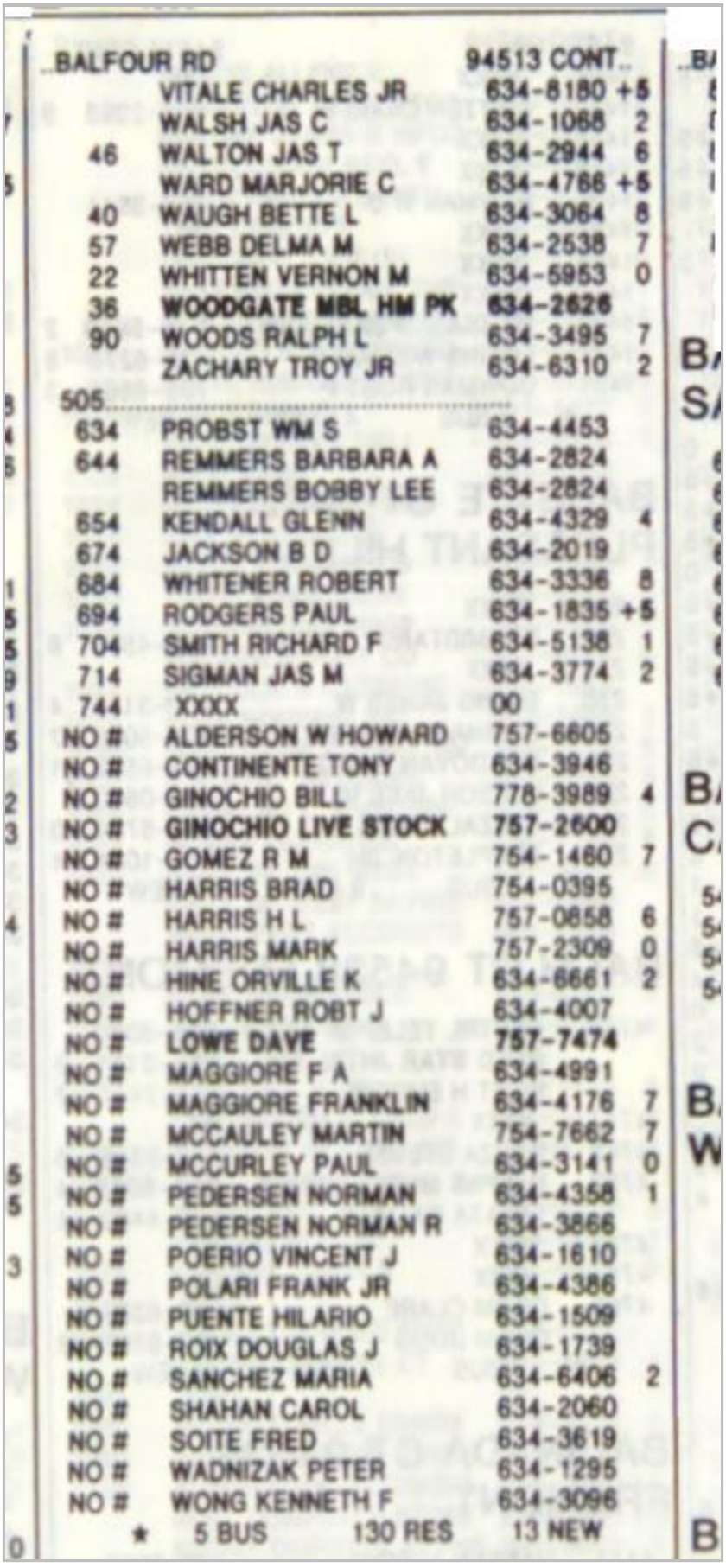


BALFOUR RD 94513
BRENTWOOD

| | | | |
|---|---|---|---|
| 2 | XXXX | 00 | |
| 6 | WHITSON JOHN J | 634-3156 | 0 |
| D | REGAN DANL B | 634-1079 | 8 |
| 8 | XXXX | 00 | |
| 22 | XXXX | 00 | |
| 40 | LIBBEY V B | 634-2895 | |
| 60 | PARKHURST LARRY J | 634-1629 | 8 |
| 68 | XXXX | 00 | |
| 76 | RICHARDS CHAS R | 634-3427 | 6 |
| 78 | HEIDBREDER JERRY P | 634-3864 | +5 |
| 88 | XXXX | 00 | |
| 98 | MELENA EMMA | 634-1139 | 4 |
| 106 | XXXX | 00 | |
| 116 | MCCLELLAND WESLEY | 634-3614 | |
| 126 | PORTWOOD HUGH | 634-3861 | |
| 136 | TOBACK MICHAEL | 634-2008 | 1 |
| 144 | XXXX | 00 | |
| 154 | PEREIRA NORMAN L | 634-3736 | |
| 172 | WISELEY FREDDIE T | 634-2594 | |
| 202 | THOMAS DEE | 634-5669 | 4 |
| 212 | **MYERS CABINETS** | **634-4379** | **+5** |
| | MYERS DOUGLAS | 634-3689 | 7 |
| 232 | XXXX | 00 | |
| 360 | **BRENTWD BLDRS SPPLY** | **634-3531** | **2** |
| | WHEELER MARK | 634-5851 | 4 |
| 488 | VIEIRA R A | 634-4419 | 7 |
| 500 | XXXX | 00 | |
| 502 | SMAKER JON R | 634-3815 | 2 |
| | VOGLOY KIM | 634-3815 | 2 |
| 505 | WOODGATE MBL HM PK | | |
| 45 | ARMSTRONG ROSE M | 634-5281 | 9 |
| | BAGNES HARRY | 634-2599 | 4 |
| | BALOCCA SHIRLEY | 634-5427 | |
| 110 | BARTHELD ROY F | 634-4522 | 0 |
| 93 | BELLI ALBERT S | 634-5819 | 0 |
| 41 | BILLECI HORACE F | 634-5427 | |
| 79 | BURROWS JOSEPH W | 634-1566 | 8 |
| | CARLISLE DOUGLAS E | 634-3197 | 1 |
| 67 | CARMONA CORNELIO | 634-5236 | 9 |
| 72 | CROCKETT ROY E | 634-1488 | 0 |
| | DAVIS LEO | 634-4504 | 2 |
| 27 | DILL WM A | 634-4192 | |
| 102 | DUKE FRANK L | 634-5987 | 0 |
| 80 | DUTRA E M | 634-4335 | 7 |
| | DYER ALVIN | 634-2134 | +5 |
| 8 | FERRARO KAREN D | 634-5296 | 0 |
| 42 | GARNER CLARENCE J | 634-5467 | 1 |
| 38 | GIMENEZ JOE W | 634-3609 | 8 |
| 109 | GRIGGS ARNOLD | 634-5349 | 2 |
| 63 | GRIVET PETE | 634-1581 | 1 |
| 88 | HALL RAY E | 634-1623 | 7 |
| 25 | HANISCH CURTIS | 634-2970 | 6 |
| 97 | HARDMAN EDGAR G | 634-2875 | 8 |
| | HARRIS KENNETH | 634-2626 | 9 |
| 36 | HARRIS KENNETH E | 625-3721 | 8 |
| | HAWKINS GEORGE | 634-4079 | +5 |
| 100 | HICKMAN A K | 634-3657 | 8 |
| 12 | HOPKINS G | 634-2440 | 2 |
| 98 | ISLER EDW J | 634-2264 | 7 |
| 53 | JUST FRED E | 634-1232 | 8 |
| 61 | KELLEY LOIS | 634-3110 | 0 |
| 70 | KILLINGSWORTH WM | 634-4281 | 9 |
| 89 | LEWIS DANIEL | 634-4066 | |
| 89 | LEWIS GLADYS | 634-4066 | 7 |
| 20 | MCCLELLAN ROY | 634-5675 | 0 |
| 29 | MICKELSON CARL C | 634-4774 | 2 |
| 32 | MILICH RUDOLPH | 634-4012 | 1 |
| | MISEL ELWOOD | 634-5121 | +5 |
| | MORRISON RAY E | 634-1087 | 1 |
| 66 | MOUDY LESLIE | 634-5175 | 1 |
| 103 | MUSGROVE MARVIN M | 634-2287 | 0 |
| | NELSON DIRK | 634-2864 | +5 |
| 107 | ONEAL TED R | 634-2381 | 7 |
| | POLLARD RALPH W | 634-4838 | 2 |
| | PORTER J E | 634-3463 | +5 |
| 16 | RISSER ETHEL A | 634-2640 | 7 |
| 5 | ROSNER SAUL | 634-2703 | 8 |
| | SABER JOHN J | 634-2846 | 4 |
| 81 | SCHOENING L | 634-3405 | 8 |
| 48 | SEXTON ABE | 634-2547 | 6 |
| 83 | SILLYMAN FRANK | 634-1539 | 0 |
| | SIMONSON RAY T | 634-6290 | 3 |
| | SLADKY JOE O | 634-6699 | 4 |
| | SMITH LILLIAN | 634-3443 | +5 |
| 111 | SMITH WILLIAM O | 634-1468 | 7 |
| | SPEER GEO P SR | 634-0214 | +5 |
| 31 | STONE R W | 634-3745 | 9 |
| | THOMPSON ARTHUR R | 634-5460 | 3 |
| | THORNAPPLE WILBUR T | 634-5407 | +5 |
| 68 | TIDRICK RALPH | 634-4356 | 2 |

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | Haines Criss-Cross Directory |

# BALFOUR RD 1985



..BALFOUR RD 94513 CONT..

| | | |
|---|---|---|
| | VITALE CHARLES JR | 634-8180 +5 |
| | WALSH JAS C | 634-1068 2 |
| 46 | WALTON JAS T | 634-2944 6 |
| | WARD MARJORIE C | 634-4766 +5 |
| 40 | WAUGH BETTE L | 634-3064 8 |
| 57 | WEBB DELMA M | 634-2538 7 |
| 22 | WHITTEN VERNON M | 634-5953 0 |
| 36 | **WOODGATE MBL HM PK** | **634-2626** |
| 90 | WOODS RALPH L | 634-3495 7 |
| | ZACHARY TROY JR | 634-6310 2 |
| 505 | | |
| 634 | PROBST WM S | 634-4453 |
| 644 | REMMERS BARBARA A | 634-2824 |
| | REMMERS BOBBY LEE | 634-2824 |
| 654 | KENDALL GLENN | 634-4329 4 |
| 674 | JACKSON B D | 634-2019 |
| 684 | WHITENER ROBERT | 634-3336 8 |
| 694 | RODGERS PAUL | 634-1835 +5 |
| 704 | SMITH RICHARD F | 634-5138 1 |
| 714 | SIGMAN JAS M | 634-3774 2 |
| 744 | XXXX | 00 |
| NO # | ALDERSON W HOWARD | 757-6605 |
| NO # | CONTINENTE TONY | 634-3946 |
| NO # | GINOCHIO BILL | 778-3989 4 |
| NO # | **GINOCHIO LIVE STOCK** | **757-2600** |
| NO # | GOMEZ R M | 754-1460 7 |
| NO # | HARRIS BRAD | 754-0395 |
| NO # | HARRIS H L | 757-0858 6 |
| NO # | HARRIS MARK | 757-2309 0 |
| NO # | HINE ORVILLE K | 634-6661 2 |
| NO # | HOFFNER ROBT J | 634-4007 |
| NO # | **LOWE DAVE** | **757-7474** |
| NO # | MAGGIORE F A | 634-4991 |
| NO # | MAGGIORE FRANKLIN | 634-4176 7 |
| NO # | MCCAULEY MARTIN | 754-7662 7 |
| NO # | MCCURLEY PAUL | 634-3141 0 |
| NO # | PEDERSEN NORMAN | 634-4358 1 |
| NO # | PEDERSEN NORMAN R | 634-3866 |
| NO # | POERIO VINCENT J | 634-1610 |
| NO # | POLARI FRANK JR | 634-4386 |
| NO # | PUENTE HILARIO | 634-1509 |
| NO # | ROIX DOUGLAS J | 634-1739 |
| NO # | SANCHEZ MARIA | 634-6406 2 |
| NO # | SHAHAN CAROL | 634-2060 |
| NO # | SOITE FRED | 634-3619 |
| NO # | WADNIZAK PETER | 634-1295 |
| NO # | WONG KENNETH F | 634-3096 |

★ 5 BUS 130 RES 13 NEW

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | Haines Criss-Cross Directory |

# BALFOUR RD 1980

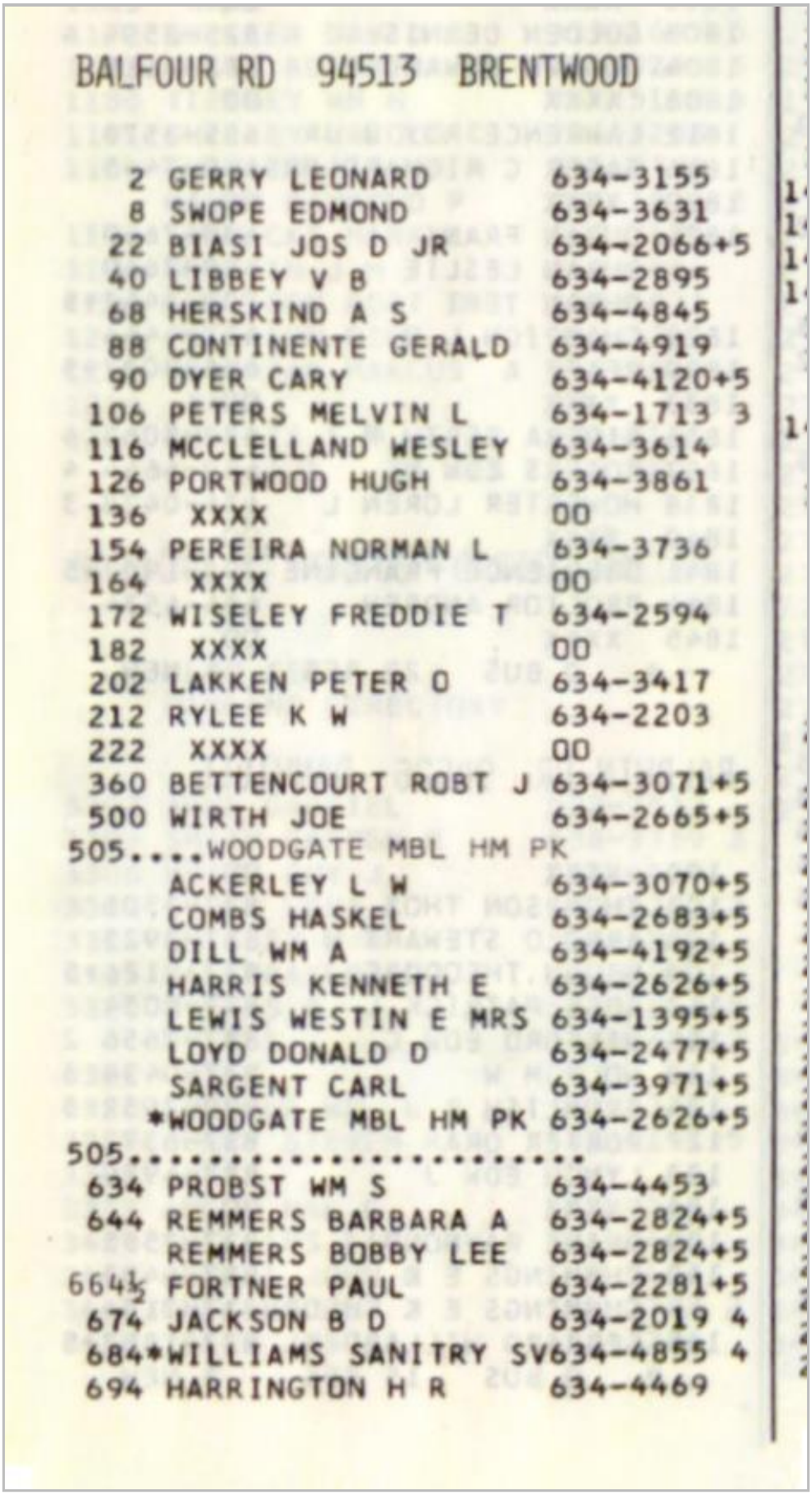


BALFOUR RD 94513
BRENTWOOD

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|---|---|---|---|
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| 6 | WHITSON JOHN J | 634-3156 | +0 |
| D | REGAN DANL B | 634-1079 | 8 |
| 8 | XXXX | 00 | |
| 22 | XXXX | 00 | |
| 40 | LIBBEY V B | 634-2895 | |
| 60 | PARKHURST LARRY J | 634-1629 | 8 |
| 68 | HERSKIND A S | 634-4845 | |
| 76 | RICHARDS CHAS R | 634-3427 | 6 |
| 78 | PIAZZA TONY | 634-1784 | 9 |
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| 98 | CARRANZA GRACIELA | 634-5501 | 9 |
| 106 | XXXX | 00 | |
| 116 | MCCLELLAND WESLEY | 634-3614 | |
| 126 | PORTWOOD HUGH | 634-3861 | |
| 136 | MASTERS JOHN | 634-5398 | 9 |
| 144 | XXXX | 00 | |
| 154 | PEREIRA NORMAN L | 634-3736 | |
| 172 | WISELEY FREDDIE T | 634-2594 | |
| 202 | BOWES PETER W | 634-2438 | +0 |
| 212 | MYERS DOUGLAS | 634-3689 | 7 |
| 232 | STIEF J H | 634-2269 | +0 |
| | STIEF JOHN HOWARD | 634-2548 | +0 |
| 360 | WHEELER KENT | 634-2574 | 8 |
| 488 | VIEIRA R A | 634-4419 | 7 |
| 500 | XXXX | 00 | |
| 505 | WOODGATE MBL HM PK | | |
| 17 | ADAMS HAROLD B | 634-1678 | 7 |
| 65 | ALLEN FRANCIS B | 634-5108 | 9 |
| | ARMSTRONG ROBERT C | 634-5281 | 9 |
| | BARTHELD ROY F | 634-4522 | +0 |
| | BELLI ALBERT S | 634-5819 | +0 |
| 41 | BILLECI HORACE F | 634-5427 | 9 |
| 79 | BURROWS JOSEPH W | 634-1566 | 8 |
| 75 | CALDERA JOHN | 634-3250 | 7 |
| | CAMPBELL ROBT A | 634-5463 | +0 |
| 67 | CARMONA CORNELIO | 634-5236 | 9 |
| 9 | COCHNAUER DOROTHY | 634-4079 | 6 |
| 65 | CONNOLLY ROBT A | 634-2230 | 6 |
| | CROCKETT ROY E | 634-1488 | +0 |
| 27 | DILL WM A | 634-4192 | 5 |
| | DUKE FRANK L | 634-5987 | +0 |
| 80 | DUTRA E M | 634-4335 | 7 |
| | EVANS WM F | 634-1374 | +0 |
| | FERRARO KAREN D | 634-5296 | +0 |
| | GE RUE ALFRED | 634-1638 | 6 |
| 38 | GIMENEZ JOE W | 634-3609 | 8 |
| 88 | HALL RAY E | 634-1623 | 7 |
| 106 | HAMMOND HAYWARD | 634-1607 | 7 |
| 25 | HANISCH CURTIS | 634-2970 | 6 |
| | HARDMAN EDGAR G | 634-2875 | 8 |
| | HARRIS KENNETH | 634-2626 | 9 |
| | HARRIS KENNETH E | 625-3721 | 8 |
| 100 | HICKMAN A K | 634-3657 | 8 |
| | HIGGINS LUCILLE | 634-3102 | 8 |
| 58 | HIRSEKORN R W | 634-5613 | 9 |
| 12 | HOPKINS G D | 634-4195 | 9 |
| 2 | HOUSE PERRY | 634-2483 | 7 |
| 73 | HUDSON BOB | 634-1589 | 9 |
| 98 | ISLER EDW J | 634-2264 | 7 |
| 109 | JAMES NITA | 634-1090 | 7 |
| 3 | JOHNSON ELDON J | 634-4614 | 6 |
| 53 | JUST FRED E | 634-1232 | 8 |
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| | KELLY PAUL M | 634-2656 | +0 |
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| 38 | LANE DONALD LLOYD | 634-3072 | 6 |
| 107 | LEONTINI NUNZIO | 634-2348 | 6 |
| | LEWIS DANIEL | 634-4066 | |
| 89 | LEWIS GLADYS | 634-4066 | 7 |
| | LOHMANN HAL A | 634-3983 | 7 |
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| | MCCLELLAN ROY | 634-5675 | +0 |
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| 104 | MIDDLETON LARON | 634-3841 | 8 |
| | MUSGROVE MARVIN M | 634-2287 | +0 |
| 107 | ONEAL TED R | 634-2381 | 7 |
| 63 | PARK ALLAN | 634-4059 | 9 |
| 66 | QUINONES MANUEL | 634-4751 | 8 |
| 16 | RISSER ETHEL A | 634-2640 | 7 |
| | ROCK JOHN | 634-5774 | +0 |
| 5 | ROSNER SAUL | 634-2703 | 8 |
| 81 | SCHOENING L | 634-3405 | 8 |
| | SCHOFIELD E | 634-1453 | +0 |
| 7 | SEDERBERG ROBERT W | 634-4482 | 8 |
| 48 | SEXTON D F | 634-2547 | 6 |
| 29 | SHIPE JOHN W | 634-4774 | 8 |
| | SILLYMAN FRANK | 634-1539 | +0 |
| 111 | SMITH WILLIAM O | 634-1468 | 7 |
| 31 | STONE R W | 634-3745 | 9 |
| 24 | TOWNSEND T D | 634-5002 | 9 |
| 19 | VENARD J E | 634-3376 | 9 |
| | WALTON JAS T | 634-2944 | 6 |
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| | WHITTEN VERNON M | 634-5953 | +0 |
| 82 | WILKINSON LINDA M | 634-2901 | 8 |
| | WOLFF RICHARD A | 634-2358 | +0 |
| 36★ | **WOODGATE MBL HM PK** | **634-2626** | 5 |
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| 505 | | | |
| 634 | PROBST WM S | 634-4453 | |
| 644 | REMMERS BARBARA A | 634-2824 | 5 |
| | REMMERS BOBBY LEE | 634-2824 | |
| 674 | JACKSON B D | 634-2019 | 4 |
| 684 | WHITENER ROBERT | 634-3336 | 8 |
| 694 | XXXX | 00 | |
| 704 | XXXX | 00 | |
| 714 | XXXX | 00 | |
| 744 | RITCHEY RICHARD T | 634-4942 | 9 |
| NO # | ALDERSON W HOWARD | 757-6605 | 2 |
| NO # | AUSTIN ED | 634-2420 | 7 |
| NO # | CONTINENTE TONY | 634-3946 | |
| NO # | DUNCAN ROBERT JR | 634-3225 | |
| NO # | ECENBARGER DALE | 634-2750 | 7 |
| NO #★ | **GARIN CO THE** | **634-3526** | 8 |
| NO #★ | **GINOCHIO LIVE STOCK** | **757-2600** | |
| NO # | GOMEZ R M | 754-1460 | 7 |
| NO # | HARRIS BRAD | 754-0395 | 3 |
| NO # | HARRIS H L | 757-0858 | 6 |
| NO # | HARRIS MARK | 757-2309 | +0 |
| NO # | HOFFNER ROBT J | 634-4007 | |
| NO #★ | **LOWE DAVE** | **757-7474** | 5 |
| NO # | LOWE DAVE | 682-2156 | 7 |
| NO # | MAGGIORE F A | 634-4991 | 5 |
| NO # | MAGGIORE FRANKLIN | 634-4176 | 7 |
| NO #★ | **MARSH CRK KENNELS** | **757-7474** | 4 |
| NO # | MCCAULEY MARTIN | 754-7662 | 7 |
| NO # | MCCURLEY PAUL | 634-3141 | +0 |
| NO # | PEDERSEN NORMAN R | 634-3866 | |
| NO # | PERRY FRANK E | 634-4571 | 4 |

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | Haines Criss-Cross Directory |

# BALFOUR RD 1975

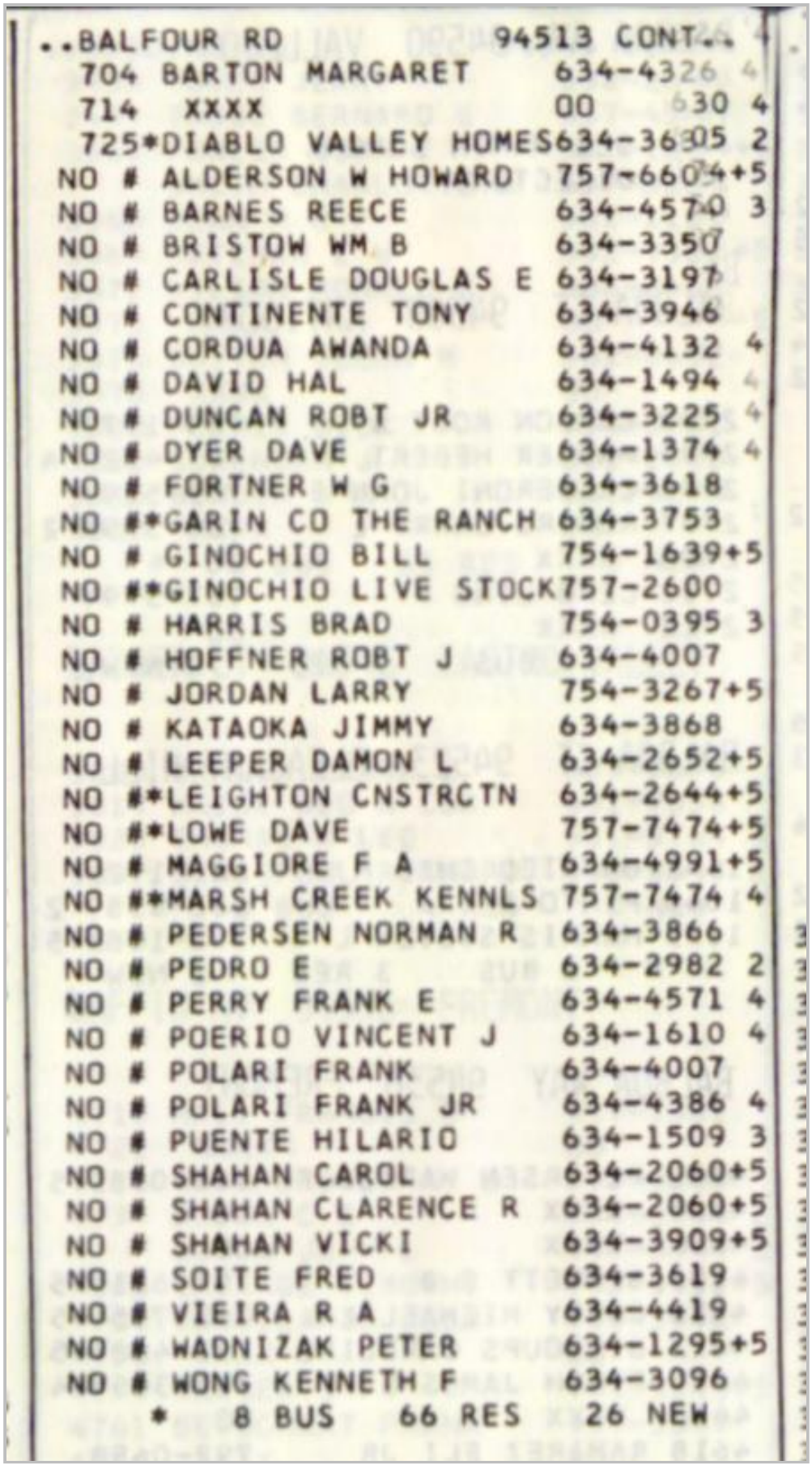


BALFOUR RD 94513 BRENTWOOD

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  2 GERRY LEONARD          634-3155
  8 SWOPE EDMOND           634-3631
 22 BIASI JOS D JR         634-2066+5
 40 LIBBEY V B             634-2895
 68 HERSKIND A S           634-4845
 88 CONTINENTE GERALD      634-4919
 90 DYER CARY              634-4120+5
106 PETERS MELVIN L        634-1713 3
116 MCCLELLAND WESLEY      634-3614
126 PORTWOOD HUGH          634-3861
136  XXXX                  OO
154 PEREIRA NORMAN L       634-3736
164  XXXX                  OO
172 WISELEY FREDDIE T      634-2594
182  XXXX                  OO
202 LAKKEN PETER O         634-3417
212 RYLEE K W              634-2203
222  XXXX                  OO
360 BETTENCOURT ROBT J     634-3071+5
500 WIRTH JOE              634-2665+5
505....WOODGATE MBL HM PK
    ACKERLEY L W           634-3070+5
    COMBS HASKEL           634-2683+5
    DILL WM A              634-4192+5
    HARRIS KENNETH E       634-2626+5
    LEWIS WESTIN E MRS     634-1395+5
    LOYD DONALD D          634-2477+5
    SARGENT CARL           634-3971+5
   *WOODGATE MBL HM PK     634-2626+5
505.....................
634 PROBST WM S            634-4453
644 REMMERS BARBARA A      634-2824+5
    REMMERS BOBBY LEE      634-2824+5
664½ FORTNER PAUL          634-2281+5
674 JACKSON B D            634-2019 4
684*WILLIAMS SANITRY SV    634-4855 4
694 HARRINGTON H R         634-4469
```

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | Haines Criss-Cross Directory |

## BALFOUR RD 1975



..BALFOUR RD 94513 CONT..

| | | |
|---|---|---|
| 704 | BARTON MARGARET | 634-4326 4 |
| 714 | XXXX | 00 630 4 |
| 725 | *DIABLO VALLEY HOMES | 634-3605 2 |
| NO # | ALDERSON W HOWARD | 757-6604+5 |
| NO # | BARNES REECE | 634-4570 3 |
| NO # | BRISTOW WM B | 634-3350 |
| NO # | CARLISLE DOUGLAS E | 634-3197 |
| NO # | CONTINENTE TONY | 634-3946 |
| NO # | CORDUA AWANDA | 634-4132 4 |
| NO # | DAVID HAL | 634-1494 4 |
| NO # | DUNCAN ROBT JR | 634-3225 4 |
| NO # | DYER DAVE | 634-1374 4 |
| NO # | FORTNER W G | 634-3618 |
| NO #* | GARIN CO THE RANCH | 634-3753 |
| NO # | GINOCHIO BILL | 754-1639+5 |
| NO #* | GINOCHIO LIVE STOCK | 757-2600 |
| NO # | HARRIS BRAD | 754-0395 3 |
| NO # | HOFFNER ROBT J | 634-4007 |
| NO # | JORDAN LARRY | 754-3267+5 |
| NO # | KATAOKA JIMMY | 634-3868 |
| NO # | LEEPER DAMON L | 634-2652+5 |
| NO #* | LEIGHTON CNSTRCTN | 634-2644+5 |
| NO #* | LOWE DAVE | 757-7474+5 |
| NO # | MAGGIORE F A | 634-4991+5 |
| NO #* | MARSH CREEK KENNLS | 757-7474 4 |
| NO # | PEDERSEN NORMAN R | 634-3866 |
| NO # | PEDRO E | 634-2982 2 |
| NO # | PERRY FRANK E | 634-4571 4 |
| NO # | POERIO VINCENT J | 634-1610 4 |
| NO # | POLARI FRANK | 634-4007 |
| NO # | POLARI FRANK JR | 634-4386 4 |
| NO # | PUENTE HILARIO | 634-1509 3 |
| NO # | SHAHAN CAROL | 634-2060+5 |
| NO # | SHAHAN CLARENCE R | 634-2060+5 |
| NO # | SHAHAN VICKI | 634-3909+5 |
| NO # | SOITE FRED | 634-3619 |
| NO # | VIEIRA R A | 634-4419 |
| NO # | WADNIZAK PETER | 634-1295+5 |
| NO # | WONG KENNETH F | 634-3096 |

* 8 BUS 66 RES 26 NEW

**Ginochio - Western Parcels**
Balfour Road
Brentwood, CA 94513

Inquiry Number: 5498334.6
December 04, 2018

# The EDR-City Directory Image Report

Environmental Data Resources Inc
6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

# TABLE OF CONTENTS

## SECTION

**Executive Summary**

**Findings**

**City Directory Images**

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Please contact EDR at 1-800-352-0050
with any questions or comments.

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# EXECUTIVE SUMMARY

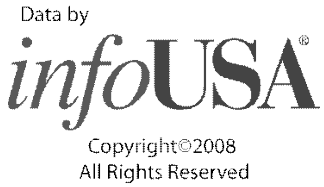
## DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

## RECORD SOURCES

EDR's Digital Archive combines historical directory listings from sources such as Cole Information and Dun & Bradstreet. These standard sources of property information complement and enhance each other to provide a more comprehensive report.

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## RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

| Year | Target Street | Cross Street | Source |
|---|---|---|---|
| 2014 | ☑ | ☑ | EDR Digital Archive |
| 2010 | ☑ | ☑ | EDR Digital Archive |
| 2005 | ☑ | ☑ | EDR Digital Archive |
| 2000 | ☑ | ☑ | EDR Digital Archive |
| 1995 | ☑ | ☐ | EDR Digital Archive |
| 1992 | ☑ | ☑ | EDR Digital Archive |
| 1989 | ☑ | ☑ | Haines Criss-Cross Directory |
| 1985 | ☑ | ☐ | Haines Criss-Cross Directory |
| 1980 | ☑ | ☐ | Haines Criss-Cross Directory |
| 1975 | ☑ | ☐ | Haines Criss-Cross Directory |

# FINDINGS

## TARGET PROPERTY STREET

Balfour Road
Brentwood, CA 94513

| ***Year*** | ***CD Image*** | ***Source*** |
|---|---|---|
| **BALFOUR RD** | | |
| 2014 | pg A1 | EDR Digital Archive |
| 2010 | pg A3 | EDR Digital Archive |
| 2005 | pg A5 | EDR Digital Archive |
| 2000 | pg A7 | EDR Digital Archive |
| 1995 | pg A9 | EDR Digital Archive |
| 1992 | pg A10 | EDR Digital Archive |
| 1989 | pg A12 | Haines Criss-Cross Directory |
| 1989 | pg A13 | Haines Criss-Cross Directory |
| 1985 | pg A15 | Haines Criss-Cross Directory |
| 1985 | pg A16 | Haines Criss-Cross Directory |
| 1980 | pg A17 | Haines Criss-Cross Directory |
| 1975 | pg A18 | Haines Criss-Cross Directory |
| 1975 | pg A19 | Haines Criss-Cross Directory |

# FINDINGS

## CROSS STREETS

| *Year* | *CD Image* | *Source* | |
|---|---|---|---|
| **DEER VALLEY RD** | | | |
| 2014 | pg. A2 | EDR Digital Archive | |
| 2010 | pg. A4 | EDR Digital Archive | |
| 2005 | pg. A6 | EDR Digital Archive | |
| 2000 | pg. A8 | EDR Digital Archive | |
| 1995 | - | EDR Digital Archive | Target and Adjoining not listed in Source |
| 1992 | pg. A11 | EDR Digital Archive | |
| 1989 | pg. A14 | Haines Criss-Cross Directory | |
| 1985 | - | Haines Criss-Cross Directory | Street not listed in Source |
| 1980 | - | Haines Criss-Cross Directory | Street not listed in Source |
| 1975 | - | Haines Criss-Cross Directory | Street not listed in Source |

# City Directory Images

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | EDR Digital Archive |

# BALFOUR RD 2014

| | |
|---|---|
| 100 | HARRIS MARK |
| | OCCUPANT UNKNOWN, |
| 200 | GUZMAN, ARACELI |
| 260 | OCCUPANT UNKNOWN, |
| 280 | FIONAS FARM |
| | HIBBARD, FIONA R |
| 300 | B & M FARMING PARTNERS |
| | UNIVERSAL LAWN & PEST MGT |
| 320 | DELLINGER, JERRY |
| 2201 | BRENTWOOD ORTHODONTICS |
| | DELTA BAY DENTAL GROUP |
| | HALL LAJUAN DDS |
| | HALL LAJUAN M DDS |
| | JEFFRY, GERALD |
| | MCMILLAN DANIEL J DDS |
| | MICHAEL ARROW DMD |
| | PERFECT IMPLANT LLC |
| | RONTAL & WEDEKING DDS INC |
| | SCHNEIDER MICHAEL J DDS |
| 2221 | ALEXANDER PROPERTIES LLC |
| | BALFOUR DERMATOLOGY & DAY SPA |
| | HABIB DESAI & RIZVI DNTL CORP |
| | PARKWAY DENTAL CARE |
| | RIZVI IMRAN DDS |
| | ROBERT E BEER MD INC |
| 2250 | BRENTWOOD SERVICE STATION LP |
| 2251 | BANK AGRICULTURE AND COMMERCE |
| | ECC BANK |
| 2261 | BELLROSE |
| | BLUSH SALON INC |
| | DIGGERS DINER INC |
| | ISSAS LLC |
| | JASPERDEEP & RACHENDEEP LLC |
| | LUXURY NAILS |
| | MI JALISCOS TAQUERIA |
| | NUMERO UNO TAQUERIA |
| | SIENA CLEANERS |
| 2270 | VIC STEWARTS INC |

| Target Street | Cross Street | Source |
|---|---|---|
| - | ✓ | EDR Digital Archive |

# DEER VALLEY RD 2014

| | |
|---|---|
| 5601 | DR QUOC D NGUYEN DO |
| | HSIAO-PIN CHIN MD |
| | KAISER FOUNDATION HOSPITALS |
| | LETHA JAYAKRISHNAN MD |
| | VOLTAIRE PAJE MD |
| 6275 | DEJESUS, EDWARD D |
| | EDWARD DDEJESUS |
| 6459 | MIKOLAJCZYK, MARTIN P |
| 6801 | BARTLETT, WALTER A |
| | C S B TELECOM SERVICES |
| 6813 | OCCUPANT UNKNOWN, |
| 6911 | OCCUPANT UNKNOWN, |
| 6921 | CARDOZA, JULIO C |
| 6931 | ESTRELLA, ROBERT J |
| 6951 | SEXTON, RAYMOND |
| 9050 | SCHNEIDER, MICHAEL J |
| 9225 | MCCAULEY, SEAN |
| | SEAN MCCAULEY INVESTMENTS INC |
| 9235 | HALL, STEVE |
| 9601 | LUCIA OLIVE FARM LLC |
| | MONTE ALBERS TRUSTEE UNDER |
| | OCCUPANT UNKNOWN, |
| 9609 | ROBERTS, JOHN A |
| 9615 | OCCUPANT UNKNOWN, |
| 9621 | HENDERSON, RICHARD E |
| 9641 | JULIE EMB & OTHER CUTE THINGS |

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | EDR Digital Archive |

# BALFOUR RD 2010

| | |
|---|---|
| 100 | OCCUPANT UNKNOWN, |
| 200 | CARRANZA, ARACELI |
| 260 | GOMEZ, BRUCE J |
| 280 | FIONAS FARM |
| | HIBBARD, FIONA R |
| 300 | U HAUL NEIGHBORHOOD DLR BRENTW |
| | UNIVERSAL LAWN & PEST MGT |
| 320 | DELLINGER, JERRY |
| 2201 | BRENTWOOD ORTHODONTICS |
| | DELTA BAY DENTAL GROUP |
| | DMH PROPERTY MANAGEMENT LLC |
| | HALL LAJUAN DDS |
| | HALL LAJUAN M DDS |
| | HALL, LAJUAN |
| | MICHAEL ARROW DMD |
| | PERFECT IMPLANT LLC |
| | RONTAL & WEDEKING DDS INC |
| 2221 | ALEXANDER PROPERTIES LLC |
| | BALFOUR DERMATOLOGY & DAY SPA |
| | BEER ROBERT E MD INC |
| | HABIB DESAI & RIZVI DNTL CORP |
| | PARKWAY DENTAL CARE |
| 2250 | BP NORTH AMERICA |
| | BRENTWOOD SERVICE STATION LP |
| 2251 | BANK AGRICULTURE AND COMMERCE |
| 2261 | BELLROSE |
| | DIGGERS DINER INC |
| | ISSAS LLC |
| | ITS A GRIND |
| | LUXURY NAILS |
| | NUMERO UNO TAQUERIA |
| | SIENA CLEANERS |
| 2270 | VIC STEWARTS INC |

| Target Street | Cross Street | Source |
|---|---|---|
| - | ✓ | EDR Digital Archive |

## DEER VALLEY RD 2010

| | |
|---|---|
| 5601 | KAISER FOUNDATION HEALTH PLAN |
| | KAISER FOUNDATION HOSPITALS |
| 6275 | DEJESUS, EDWARD D |
| | EDWARD DDEJESUS |
| 6441 | SPINELLI TRUCKING |
| 6459 | MIKOLAJCZYK, MARTIN P |
| 6801 | C S B TELECOM SERVICES |
| | OCCUPANT UNKNOWN, |
| 6813 | FERRELL, CHARLES D |
| 6911 | GANNON, TIMOTHY |
| 6921 | CARDOZA, JULIO C |
| 6931 | ESTRELLA, ROBERT J |
| 6951 | CAMPOS, REY |
| 9050 | BOND, THOMAS W |
| | CORNERSTONE DESIGN |
| | SCHNEIDER MICHAEL J |
| 9225 | MCCAULEY, SEAN |
| | SEAN MCCAULEY INVESTMENTS INC |
| 9235 | HALL, PRESTON S |
| 9601 | LUCIA OLIVE FARM LLC |
| | MEL TRACY GROUP LLC |
| | MONTE ALBERS TRUSTEE UNDER |
| | OCCUPANT UNKNOWN, |
| 9615 | KUHN, HANS J |
| 9621 | HENDERSON, RICHARD E |
| 9641 | JULIE EMB & OTHER CUTE THINGS |

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | EDR Digital Archive |

# BALFOUR RD 2005

| | |
|---|---|
| 100 | OCCUPANT UNKNOWN, |
| 200 | LOWE, DAVID R |
| 260 | GOMEZ, LAVERNE |
| 280 | HIBBARD, FIONA R |
| | SERVANTS OF MARY IMMACULATE |
| 300 | BRENTWOOD RANCH FEED & PET SUP |
| | UNIVERSAL LAWN & PEST MGT |
| 1500 | JOES SUN RISE CONSTRUCTION |
| 2201 | MICHAEL ARROW DMD |

| Target Street | Cross Street | Source |
|---|---|---|
| - | ✓ | EDR Digital Archive |

## DEER VALLEY RD 2005

| | |
|---|---|
| 5601 | KAISER FOUNDATION HEALTH PLAN |
| 6275 | DEJESUS, SHARON M |
| | EDWARD DDEJESUS |
| 6441 | SPINELLI TRUCKING |
| 6459 | WENTWORTH, RICHARD A |
| 6801 | OCCUPANT UNKNOWN, |
| 6813 | OCCUPANT UNKNOWN, |
| 6911 | HAGEN, MARK D |
| 6921 | CARDOZA, JULIO C |
| 6931 | ESTRELLA, ROBERT M |
| 6951 | MARY, BOGGESS |
| 9050 | BOND, THOMAS W |
| 9225 | GOMES, GREG J |
| 9235 | HALL, PRESTON S |
| 9601 | MONTE ALBERS TRUSTEE UNDER |
| | OCCUPANT UNKNOWN, |
| 9621 | HENDERSON, RICHARD E |

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | EDR Digital Archive |

## BALFOUR RD 2000

| | |
|---|---|
| 100 | MJH COMPANY |
| | NELSON, GINA B |
| 106 | OCCUPANT UNKNOWN, |
| 260 | SIKES, RICK |
| 270 | OCCUPANT UNKNOWN, |
| 300 | BRENTWOOD RANCH FEED & PET SUP |
| 320 | OCCUPANT UNKNOWN, |
| 1740 | BRENTWOOD CNTRY CLB PRTNERS LP |

| Target Street | Cross Street | Source |
| --- | --- | --- |
| - | ✓ | EDR Digital Archive |

## DEER VALLEY RD 2000

6275 EDWARD DDEJESUS
6441 SPINELLI TRUCKING
9225 MORALES, C
9235 HALL, PRESTON S
9601 OCCUPANT UNKNOWN,
9621 HENDERSON, RICHARD E

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | EDR Digital Archive |

# BALFOUR RD 1995

| | |
|---|---|
| 76 | OCCUPANT UNKNOWNN |
| 78 | OCCUPANT UNKNOWNN |
| 100 | HARRIS, MARK |
| 116 | OCCUPANT UNKNOWNN |
| 144 | OCCUPANT UNKNOWNN |
| 154 | OCCUPANT UNKNOWNN |
| 164 | OCCUPANT UNKNOWNN |
| 172 | OCCUPANT UNKNOWNN |
| 200 | LOWE, DARCY |
| 260 | FUTURE LIVESTOCK |
| | SIKES, RICK |
| 300 | BRENTWOOD RANCH FEED & PET SUP |
| | MCCAULEY, MARTIN |
| 1740 | BRENTWOOD COUNTRY CLUB |
| 2260 | TREAT, HERMAN |

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | EDR Digital Archive |

# BALFOUR RD 1992

| | |
|---|---|
| 2 | GERRY, LEONARD |
| 78 | PIAZZA, TONY |
| 116 | MCCLELLAND, WESLEY C |
| 164 | COX, KEVIN |
| 270 | ALDERSON, W H |

| Target Street | Cross Street | Source |
| --- | --- | --- |
| - | ✓ | EDR Digital Archive |

## DEER VALLEY RD 1992

9225 MORALES, C
9601 ALBERS, MONTE

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | Haines Criss-Cross Directory |

# BALFOUR RD 1989



BALFOUR RD 94513
BRENTWOOD

| | | | |
|---|---|---|---|
| 2 | XXXX | 00 | |
| 6D | REGAN Dani B | 634-1079 | |
| 8 | XXXX | 00 | |
| 22 | XXXX | 00 | |
| 40 | XXXX | 00 | |
| 60 | PARKHURST Larry J | 634-1629 | |
| 68 | XXXX | 00 | |
| 76 | RICHARDS Chas R | 634-3427 | |
| 78 | XXXX | 00 | |
| 88 | XXXX | 00 | |
| 98 | XXXX | 00 | |
| 106 | XXXX | 00 | |
| 116 | MCCLELLAND Wesley | 634-3614 | |
| 126 | PORTWOOD Hugh | 634-3861 | |
| 136 | XXXX | 00 | |
| 144 | XXXX | 00 | |
| 154 | PEREIRA Norman L | 634-3736 | +9 |
| 164 | COX Kevin | 634-7462 | 8 |
| 172 | WISELEY Freddie T | 634-2594 | |
| 202 | THOMAS Dee | 634-5669 | 4 |
| 212 | MYERS Douglas | 634-3689 | |
| 232 | XXXX | 00 | |
| 488 | VIEIRA R A | 634-4419 | |
| 500 | XXXX | 00 | |
| 502 | XXXX | 00 | |
| 505 | WOODGATE MBL HM PK | | |
| | ANDRADE Leroy | 634-4164 | 8 |
| | BAGNES Harry | 634-2599 | 4 |
| | BANKE Kathryn | 634-9017 | 8 |
| | BANKE Michael | 634-9017 | |
| | BARNABY F R | 634-4773 | 8 |
| | BARNES Paul E | 634-3159 | +9 |
| 110 | BARTHELD Roy F | 634-4522 | 0 |
| | BEASLEY Homer | 634-1524 | 8 |
| 93 | BELLI Albert S | 634-5819 | 0 |
| 41 | BILLECI Horace F | 634-5427 | |
| | CARLISLE Douglas E | 634-3197 | 1 |
| 67 | CARMONA Cornelio | 634-5236 | |
| | CARSON Heide | 634-8529 | 8 |
| | CASTEEL Edith | 634-7307 | 8 |
| | COMBS Haskel | 634-1564 | 6 |
| 72 | CROCKETT Roy E | 634-1488 | 0 |
| 102 | DUKE Frank L | 634-5987 | 0 |
| | DYER Alvin | 634-2134 | 5 |
| | FARR Debra | 634-0283 | +9 |
| | FARR Kenneth | 634-0283 | +9 |
| 8 | FERRARO Karen D | 634-5296 | 0 |
| 38 | GIMENEZ Joe W | 634-3609 | |
| 109 | GRIGGS Arnold | 634-5349 | 2 |
| 63 | GRIVET Pete | 634-1581 | 1 |
| | HALVERSON R J | 634-3422 | 6 |
| 25 | HANISCH Curtis | 634-2970 | |
| 97 | HARDMAN Edgar G | 634-2875 | |
| | HAWKINS Dorothy | 634-4079 | 5 |
| | HAWKINS George | 634-4079 | |
| | HENDERSON Betty | 634-9509 | +9 |
| | HENDERSON Elmer | 634-9509 | +9 |
| | HENDERSON Jas H | 634-4114 | 8 |
| 100 | HICKMAN A K | 634-3657 | |
| | HOPPNER Rusty | 634-2946 | 6 |
| 98 | ISLER Edw J | 634-2264 | |
| 53 | JUST Fred E | 634-1232 | |
| 61 | KELLEY Lois | 634-3110 | 0 |
| 70 | KILLINGSWORTH Wm | 634-4281 | |
| 89 | LEWIS Daniel | 634-4066 | |
| | LOE Mildred | 634-4356 | +9 |
| | LOE Ray | 634-4356 | +9 |
| | LOUGHLEY John R | 634-7001 | 7 |

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | Haines Criss-Cross Directory |

# BALFOUR RD 1989



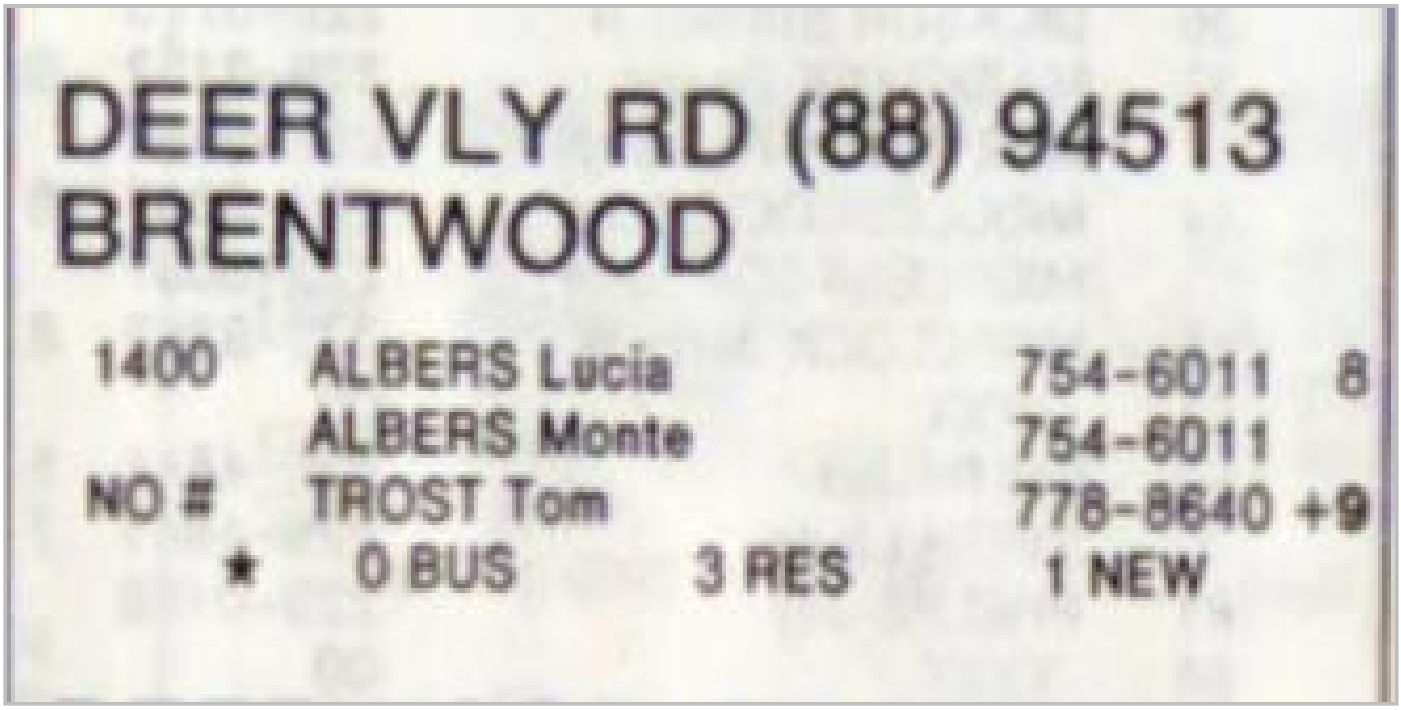
..BALFOUR RD 94513 CONT..

| | | | |
|---|---|---|---|
| 20 | MCCLELLAN Roy | 634-5675 | 0 |
| | MECCA Richard R | 634-7098 | 6 |
| 29 | MICKELSON Carl C | 634-4774 | 2 |
| 32 | MILICH Rudolph | 634-4012 | 1 |
| | MISEL Elwood | 634-5121 | |
| | MISEL Eva | 634-5121 | |
| 103 | MUSGROVE Marvin M | 634-2287 | 0 |
| | NASH Robert E | 634-4538 | 6 |
| 107 | ONEAL Ted R | 634-2381 | |
| | POLLARD Ralph W | 634-4838 | 2 |
| | PORTER J E | 634-3463 | 5 |
| 16 | RISSER Ethel A | 634-2640 | |
| 5 | ROSNER Shirley | 634-2703 | |
| | SABER John J | 634-2846 | 4 |
| | SLADKY Joe O | 634-6699 | 4 |
| | SMITH Lillian | 634-3443 | 5 |
| 111 | SMITH Wm Oscar | 634-1468 | |
| | SPEER Shaun | 634-0214 | 5 |
| 31 | STONE R W | 634-3745 | |
| | SULLIVAN Clyde E | 634-9860 | +9 |
| | THOMPSON Arthur R | 634-5460 | 3 |
| | THORNAPPLE Wilbur T | 634-5407 | 5 |
| | WARD Lester | 634-4128 | |
| | WARD Vesta Grey | 634-4128 | 8 |
| 40 | WAUGH Bette L | 634-3064 | |
| 57 | WEBB Delma M | 634-2538 | |
| | WHITE Ralph W | 634-8355 | 8 |
| 22 | WHITTEN Vernon M | 634-5953 | 0 |
| **36** | **★WOODGATE MBL HM PK** | **634-2626** | |
| 90 | WOODS Ralph L | 634-3495 | |
| | ZACHARY Troy Jr | 634-6310 | 2 |
| **505** | | | |
| 634 | PROBST Wm S | 634-4453 | |
| 644 | REMMERS Barbara A | 634-2824 | |
| | REMMERS Bobby Lee | 634-2824 | |
| 654 | KENDALL Glenn | 634-4329 | 4 |
| 664 | XXXX | 00 | |
| 674 | JACKSON B D | 634-2019 | |
| 684 | MAGANA Mario | 634-1075 | 7 |
| 694 | RODGERS Paul | 634-1835 | 5 |
| 704 | SMITH Richard F | 634-5138 | 1 |
| 714 | XXXX | 00 | |
| 715 | KYSH Melvin E | 634-1114 | 6 |
| 744 | XXXX | 00 | |
| **1091** | **★DELTA BAY MUSTANG** | **634-7776** | 7 |
| 1202 | GANGWER Phillip | 634-3855 | 8 |
| NO # | ALDERSON W Howard | 757-6605 | |
| **NO #** | **★BRENTWD RANCH EGGS** | **634-0404** | 8 |
| NO # | CONTINENTE Tony | 634-3946 | |
| NO # | DEJESUS G | 634-5080 | +9 |
| NO # | GALLEGOS Hector | 634-7689 | +9 |
| **NO #** | **★GINOCHIO LIVE STOCK** | **757-2600** | |
| NO # | GOMEZ R M | 754-1460 | |
| **NO #** | **★HAFEN CONSTRUCTION** | **634-9103** | +9 |
| NO # | HARRIS Brad | 754-0395 | |
| NO # | HARRIS Mark | 757-2309 | 0 |
| NO # | HINE Orville K | 634-6661 | 2 |
| NO # | HOFFNER Robt J | 634-4007 | |
| NO # | JOHNSON Harry | 634-3266 | 6 |
| NO # | LOWE Dave | 757-7474 | |
| NO # | MAGGIORE F A | 634-4991 | |
| NO # | MAGGIORE Franklin | 634-4176 | |
| NO # | MCCAULEY Martin | 754-7662 | |
| NO # | MCCAULEY Sean | 757-2799 | +9 |
| NO # | MCCURLEY Paul | 634-3141 | 7 |
| NO # | PEDERSEN Norman R | 634-3866 | |
| NO # | POERIO Vincent J | 634-1610 | |
| NO # | POLARI Frank Jr | 634-4386 | |
| NO # | PUENTE Hilario | 634-1509 | |
| NO # | RIOS Roy | 634-2920 | 8 |
| NO # | ROIX Douglas J | 634-1739 | |
| NO # | RUIZ Daniel Jr | 634-9735 | +9 |
| NO # | SHAHAN Carol | 634-2060 | |
| NO # | SHAHAN Clarence R | 634-2060 | |
| NO # | SOITE Fred | 634-3619 | |
| NO # | TUBIYYA Michel | 778-1890 | +9 |
| NO # | WONG Kenneth F | 634-3096 | |

★ 5 BUS 138 RES 15 NEW

| Target Street | Cross Street | Source |
|---|---|---|
| - | ✓ | Haines Criss-Cross Directory |

## DEER VALLEY RD 1989



DEER VLY RD (88) 94513
BRENTWOOD

| | | | |
|---|---|---|---|
| 1400 | ALBERS Lucia | 754-6011 | 8 |
| | ALBERS Monte | 754-6011 | |
| NO # | TROST Tom | 778-8640 | +9 |
| * | 0 BUS 3 RES | 1 NEW | |

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | Haines Criss-Cross Directory |

# BALFOUR RD 1985

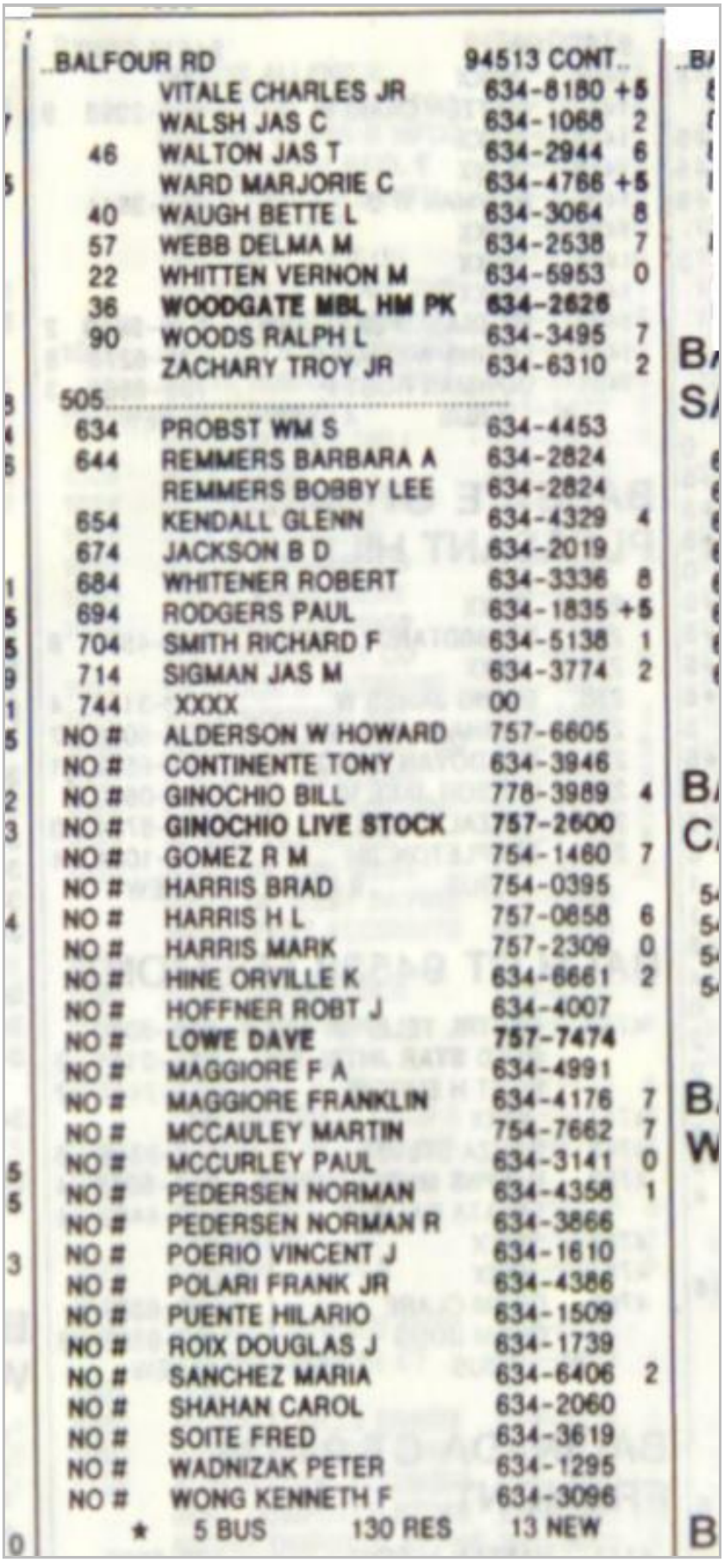


BALFOUR RD 94513
BRENTWOOD

| | | | |
|---|---|---|---|
| 2 | XXXX | 00 | |
| 6 | WHITSON JOHN J | 634-3156 | 0 |
| D | REGAN DANL B | 634-1079 | 8 |
| 8 | XXXX | 00 | |
| 22 | XXXX | 00 | |
| 40 | LIBBEY V B | 634-2895 | |
| 60 | PARKHURST LARRY J | 634-1629 | 8 |
| 68 | XXXX | 00 | |
| 76 | RICHARDS CHAS R | 634-3427 | 6 |
| 78 | HEIDBREDER JERRY P | 634-3864 | +5 |
| 88 | XXXX | 00 | |
| 98 | MELENA EMMA | 634-1139 | 4 |
| 106 | XXXX | 00 | |
| 116 | MCCLELLAND WESLEY | 634-3614 | |
| 126 | PORTWOOD HUGH | 634-3861 | |
| 136 | TOBACK MICHAEL | 634-2008 | 1 |
| 144 | XXXX | 00 | |
| 154 | PEREIRA NORMAN L | 634-3736 | |
| 172 | WISELEY FREDDIE T | 634-2594 | |
| 202 | THOMAS DEE | 634-5669 | 4 |
| 212 | **MYERS CABINETS** | **634-4379** | **+5** |
| | MYERS DOUGLAS | 634-3689 | 7 |
| 232 | XXXX | 00 | |
| 360 | **BRENTWD BLDRS SPPLY** | **634-3531** | **2** |
| | WHEELER MARK | 634-5851 | 4 |
| 488 | VIEIRA R A | 634-4419 | 7 |
| 500 | XXXX | 00 | |
| 502 | SMAKER JON R | 634-3815 | 2 |
| | VOGLOY KIM | 634-3815 | 2 |
| 505 | WOODGATE MBL HM PK | | |
| 45 | ARMSTRONG ROSE M | 634-5281 | 9 |
| | BAGNES HARRY | 634-2599 | 4 |
| | BALOCCA SHIRLEY | 634-5427 | |
| 110 | BARTHELD ROY F | 634-4522 | 0 |
| 93 | BELLI ALBERT S | 634-5819 | 0 |
| 41 | BILLECI HORACE F | 634-5427 | |
| 79 | BURROWS JOSEPH W | 634-1566 | 8 |
| | CARLISLE DOUGLAS E | 634-3197 | 1 |
| 67 | CARMONA CORNELIO | 634-5236 | 9 |
| 72 | CROCKETT ROY E | 634-1488 | 0 |
| | DAVIS LEO | 634-4504 | 2 |
| 27 | DILL WM A | 634-4192 | |
| 102 | DUKE FRANK L | 634-5987 | 0 |
| 80 | DUTRA E M | 634-4335 | 7 |
| | DYER ALVIN | 634-2134 | +5 |
| 8 | FERRARO KAREN D | 634-5296 | 0 |
| 42 | GARNER CLARENCE J | 634-5467 | 1 |
| 38 | GIMENEZ JOE W | 634-3609 | 8 |
| 109 | GRIGGS ARNOLD | 634-5349 | 2 |
| 63 | GRIVET PETE | 634-1581 | 1 |
| 88 | HALL RAY E | 634-1623 | 7 |
| 25 | HANISCH CURTIS | 634-2970 | 6 |
| 97 | HARDMAN EDGAR G | 634-2875 | 8 |
| | HARRIS KENNETH | 634-2626 | 9 |
| 36 | HARRIS KENNETH E | 625-3721 | 8 |
| | HAWKINS GEORGE | 634-4079 | +5 |
| 100 | HICKMAN A K | 634-3657 | 8 |
| 12 | HOPKINS G | 634-2440 | 2 |
| 98 | ISLER EDW J | 634-2264 | 7 |
| 53 | JUST FRED E | 634-1232 | 8 |
| 61 | KELLEY LOIS | 634-3110 | 0 |
| 70 | KILLINGSWORTH WM | 634-4281 | 9 |
| 89 | LEWIS DANIEL | 634-4066 | |
| 89 | LEWIS GLADYS | 634-4066 | 7 |
| 20 | MCCLELLAN ROY | 634-5675 | 0 |
| 29 | MICKELSON CARL C | 634-4774 | 2 |
| 32 | MILICH RUDOLPH | 634-4012 | 1 |
| | MISEL ELWOOD | 634-5121 | +5 |
| | MORRISON RAY E | 634-1087 | 1 |
| 66 | MOUDY LESLIE | 634-5175 | 1 |
| 103 | MUSGROVE MARVIN M | 634-2287 | 0 |
| | NELSON DIRK | 634-2864 | +5 |
| 107 | ONEAL TED R | 634-2381 | 7 |
| | POLLARD RALPH W | 634-4838 | 2 |
| | PORTER J E | 634-3463 | +5 |
| 16 | RISSER ETHEL A | 634-2640 | 7 |
| 5 | ROSNER SAUL | 634-2703 | 8 |
| | SABER JOHN J | 634-2846 | 4 |
| 81 | SCHOENING L | 634-3405 | 8 |
| 48 | SEXTON ABE | 634-2547 | 6 |
| 83 | SILLYMAN FRANK | 634-1539 | 0 |
| | SIMONSON RAY T | 634-6290 | 3 |
| | SLADKY JOE O | 634-6699 | 4 |
| | SMITH LILLIAN | 634-3443 | +5 |
| 111 | SMITH WILLIAM O | 634-1468 | 7 |
| | SPEER GEO P SR | 634-0214 | +5 |
| 31 | STONE R W | 634-3745 | 9 |
| | THOMPSON ARTHUR R | 634-5460 | 3 |
| | THORNAPPLE WILBUR T | 634-5407 | +5 |
| 68 | TIDRICK RALPH | 634-4356 | 2 |

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | Haines Criss-Cross Directory |

# BALFOUR RD 1985



..BALFOUR RD 94513 CONT..

| | | |
|---|---|---|
| | VITALE CHARLES JR | 634-8180 +5 |
| | WALSH JAS C | 634-1068 2 |
| 46 | WALTON JAS T | 634-2944 6 |
| | WARD MARJORIE C | 634-4766 +5 |
| 40 | WAUGH BETTE L | 634-3064 8 |
| 57 | WEBB DELMA M | 634-2538 7 |
| 22 | WHITTEN VERNON M | 634-5953 0 |
| 36 | **WOODGATE MBL HM PK** | **634-2626** |
| 90 | WOODS RALPH L | 634-3495 7 |
| | ZACHARY TROY JR | 634-6310 2 |
| 505 | | |
| 634 | PROBST WM S | 634-4453 |
| 644 | REMMERS BARBARA A | 634-2824 |
| | REMMERS BOBBY LEE | 634-2824 |
| 654 | KENDALL GLENN | 634-4329 4 |
| 674 | JACKSON B D | 634-2019 |
| 684 | WHITENER ROBERT | 634-3336 8 |
| 694 | RODGERS PAUL | 634-1835 +5 |
| 704 | SMITH RICHARD F | 634-5138 1 |
| 714 | SIGMAN JAS M | 634-3774 2 |
| 744 | XXXX | 00 |
| NO # | ALDERSON W HOWARD | 757-6605 |
| NO # | CONTINENTE TONY | 634-3946 |
| NO # | GINOCHIO BILL | 778-3989 4 |
| NO # | **GINOCHIO LIVE STOCK** | **757-2600** |
| NO # | GOMEZ R M | 754-1460 7 |
| NO # | HARRIS BRAD | 754-0395 |
| NO # | HARRIS H L | 757-0858 6 |
| NO # | HARRIS MARK | 757-2309 0 |
| NO # | HINE ORVILLE K | 634-6661 2 |
| NO # | HOFFNER ROBT J | 634-4007 |
| NO # | **LOWE DAVE** | **757-7474** |
| NO # | MAGGIORE F A | 634-4991 |
| NO # | MAGGIORE FRANKLIN | 634-4176 7 |
| NO # | MCCAULEY MARTIN | 754-7662 7 |
| NO # | MCCURLEY PAUL | 634-3141 0 |
| NO # | PEDERSEN NORMAN | 634-4358 1 |
| NO # | PEDERSEN NORMAN R | 634-3866 |
| NO # | POERIO VINCENT J | 634-1610 |
| NO # | POLARI FRANK JR | 634-4386 |
| NO # | PUENTE HILARIO | 634-1509 |
| NO # | ROIX DOUGLAS J | 634-1739 |
| NO # | SANCHEZ MARIA | 634-6406 2 |
| NO # | SHAHAN CAROL | 634-2060 |
| NO # | SOITE FRED | 634-3619 |
| NO # | WADNIZAK PETER | 634-1295 |
| NO # | WONG KENNETH F | 634-3096 |

★ 5 BUS 130 RES 13 NEW

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | Haines Criss-Cross Directory |

# BALFOUR RD 1980

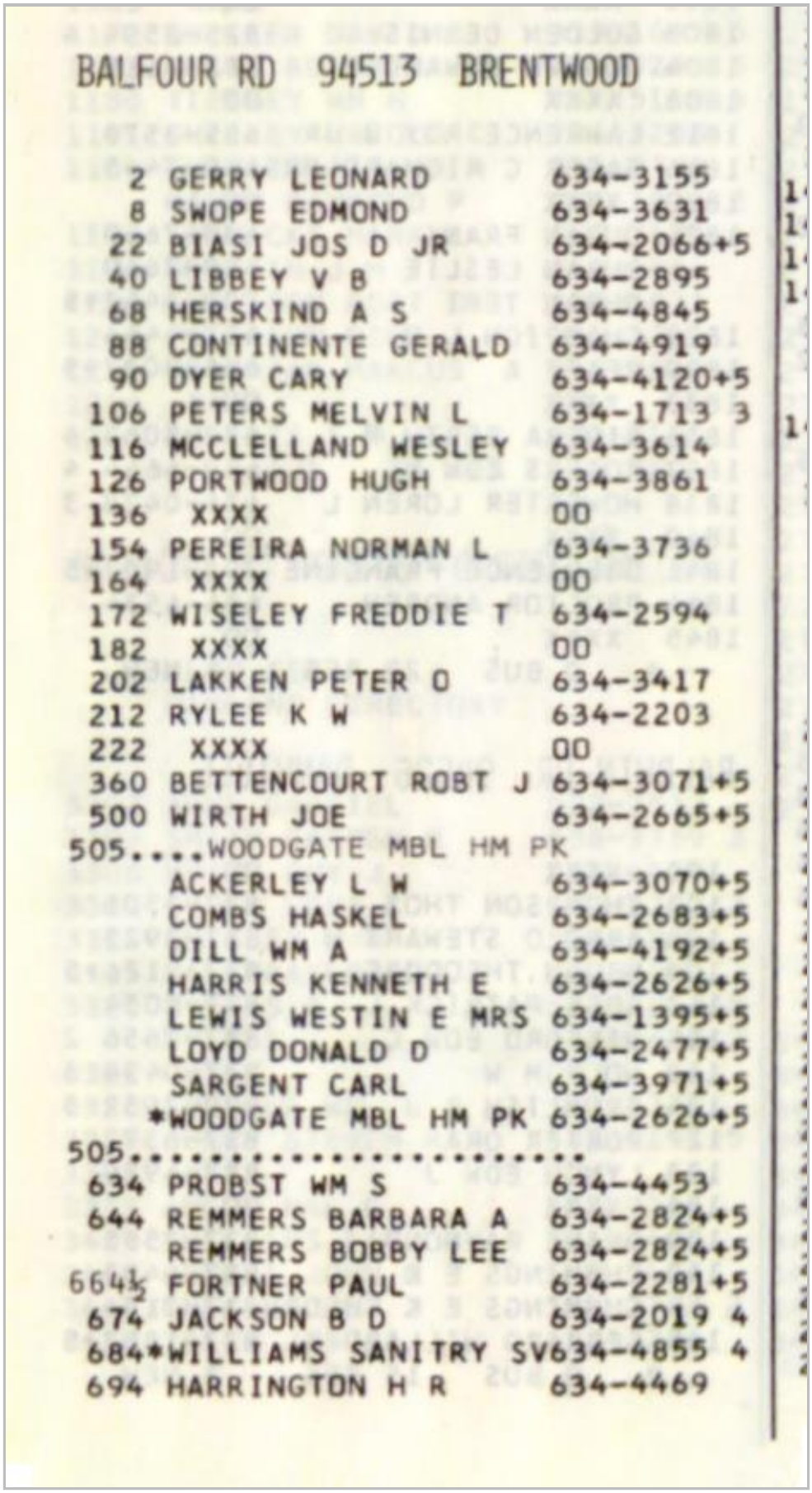


BALFOUR RD 94513
BRENTWOOD

| | | | | |
|---|---|---|---|---|
| | 2 | GERRY LEONARD | 634-3155 | |
| | 6 | WHITSON JOHN J | 634-3156 | +0 |
| | D | REGAN DANL B | 634-1079 | 8 |
| | 8 | XXXX | 00 | |
| | 22 | XXXX | 00 | |
| | 40 | LIBBEY V B | 634-2895 | |
| | 60 | PARKHURST LARRY J | 634-1629 | 8 |
| | 68 | HERSKIND A S | 634-4845 | |
| | 76 | RICHARDS CHAS R | 634-3427 | 6 |
| | 78 | PIAZZA TONY | 634-1784 | 9 |
| | 88 | XXXX | 00 | |
| | 98 | CARRANZA GRACIELA | 634-5501 | 9 |
| | 106 | XXXX | 00 | |
| | 116 | MCCLELLAND WESLEY | 634-3614 | |
| | 126 | PORTWOOD HUGH | 634-3861 | |
| | 136 | MASTERS JOHN | 634-5398 | 9 |
| | 144 | XXXX | 00 | |
| | 154 | PEREIRA NORMAN L | 634-3736 | |
| | 172 | WISELEY FREDDIE T | 634-2594 | |
| | 202 | BOWES PETER W | 634-2438 | +0 |
| | 212 | MYERS DOUGLAS | 634-3689 | 7 |
| | 232 | STIEF J H | 634-2269 | +0 |
| | | STIEF JOHN HOWARD | 634-2548 | +0 |
| | 360 | WHEELER KENT | 634-2574 | 8 |
| | 488 | VIEIRA R A | 634-4419 | 7 |
| | 500 | XXXX | 00 | |
| | 505 | WOODGATE MBL HM PK | | |
| | 17 | ADAMS HAROLD B | 634-1678 | 7 |
| | 65 | ALLEN FRANCIS B | 634-5108 | 9 |
| | | ARMSTRONG ROBERT C | 634-5281 | 9 |
| | | BARTHELD ROY F | 634-4522 | +0 |
| | | BELLI ALBERT S | 634-5819 | +0 |
| | 41 | BILLECI HORACE F | 634-5427 | 9 |
| | 79 | BURROWS JOSEPH W | 634-1566 | 8 |
| | 75 | CALDERA JOHN | 634-3250 | 7 |
| | | CAMPBELL ROBT A | 634-5463 | +0 |
| | 67 | CARMONA CORNELIO | 634-5236 | 9 |
| | 9 | COCHNAUER DOROTHY | 634-4079 | 6 |
| | 65 | CONNOLLY ROBT A | 634-2230 | 6 |
| | | CROCKETT ROY E | 634-1488 | +0 |
| | 27 | DILL WM A | 634-4192 | 5 |
| | | DUKE FRANK L | 634-5987 | +0 |
| | 80 | DUTRA E M | 634-4335 | 7 |
| | | EVANS WM F | 634-1374 | +0 |
| | | FERRARO KAREN D | 634-5296 | +0 |
| | | GE RUE ALFRED | 634-1638 | 6 |
| | 38 | GIMENEZ JOE W | 634-3609 | 8 |
| | 88 | HALL RAY E | 634-1623 | 7 |
| | 106 | HAMMOND HAYWARD | 634-1607 | 7 |
| | 25 | HANISCH CURTIS | 634-2970 | 6 |
| | | HARDMAN EDGAR G | 634-2875 | 8 |
| | | HARRIS KENNETH | 634-2626 | 9 |
| | | HARRIS KENNETH E | 625-3721 | 8 |
| | 100 | HICKMAN A K | 634-3657 | 8 |
| | | HIGGINS LUCILLE | 634-3102 | 8 |
| | 58 | HIRSEKORN R W | 634-5613 | 9 |
| | 12 | HOPKINS G D | 634-4195 | 9 |
| | 2 | HOUSE PERRY | 634-2483 | 7 |
| | 73 | HUDSON BOB | 634-1589 | 9 |
| | 98 | ISLER EDW J | 634-2264 | 7 |
| | 109 | JAMES NITA | 634-1090 | 7 |
| | 3 | JOHNSON ELDON J | 634-4614 | 6 |
| | 53 | JUST FRED E | 634-1232 | 8 |
| | | KELLEY LOIS | 634-3110 | +0 |
| | | KELLY PAUL M | 634-2656 | +0 |
| | 70 | KILLINGSWORTH WM | 634-4281 | 9 |
| | 38 | LANE DONALD LLOYD | 634-3072 | 6 |
| | 107 | LEONTINI NUNZIO | 634-2348 | 6 |
| | | LEWIS DANIEL | 634-4066 | |
| | 89 | LEWIS GLADYS | 634-4066 | 7 |
| | | LOHMANN HAL A | 634-3983 | 7 |
| | 42★ | **LYLE R P ENTERPRISE** | **634-1585** | 9 |
| | 92 | MARTIN KENNETH E | 634-3383 | 6 |
| | | MCCLELLAN ROY | 634-5675 | +0 |
| | 33 | MICKELSON CARL C | 634-5600 | 9 |
| | 104 | MIDDLETON LARON | 634-3841 | 8 |
| | | MUSGROVE MARVIN M | 634-2287 | +0 |
| | 107 | ONEAL TED R | 634-2381 | 7 |
| | 63 | PARK ALLAN | 634-4059 | 9 |
| | 66 | QUINONES MANUEL | 634-4751 | 8 |
| | 16 | RISSER ETHEL A | 634-2640 | 7 |
| | | ROCK JOHN | 634-5774 | +0 |
| | 5 | ROSNER SAUL | 634-2703 | 8 |
| | 81 | SCHOENING L | 634-3405 | 8 |
| | | SCHOFIELD E | 634-1453 | +0 |
| | 7 | SEDERBERG ROBERT W | 634-4482 | 8 |
| | 48 | SEXTON D F | 634-2547 | 6 |
| | 29 | SHIPE JOHN W | 634-4774 | 8 |
| | | SILLYMAN FRANK | 634-1539 | +0 |
| | 111 | SMITH WILLIAM O | 634-1468 | 7 |
| | 31 | STONE R W | 634-3745 | 9 |
| | 24 | TOWNSEND T D | 634-5002 | 9 |
| | 19 | VENARD J E | 634-3376 | 9 |
| | | WALTON JAS T | 634-2944 | 6 |
| | 40 | WAUGH BETTE L | 634-3064 | 8 |
| | | WEBB DELMA M | 634-2538 | 7 |
| | | WHITTEN VERNON M | 634-5953 | +0 |
| | 82 | WILKINSON LINDA M | 634-2901 | 8 |
| | | WOLFF RICHARD A | 634-2358 | +0 |
| | 36★ | **WOODGATE MBL HM PK** | **634-2626** | 5 |
| | 90 | WOODS RALPH L | 634-3495 | 7 |
| | 505 | | | |
| | 634 | PROBST WM S | 634-4453 | |
| | 644 | REMMERS BARBARA A | 634-2824 | 5 |
| | | REMMERS BOBBY LEE | 634-2824 | |
| | 674 | JACKSON B D | 634-2019 | 4 |
| | 684 | WHITENER ROBERT | 634-3336 | 8 |
| | 694 | XXXX | 00 | |
| | 704 | XXXX | 00 | |
| | 714 | XXXX | 00 | |
| | 744 | RITCHEY RICHARD T | 634-4942 | 9 |
| | NO # | ALDERSON W HOWARD | 757-6605 | 2 |
| | NO # | AUSTIN ED | 634-2420 | 7 |
| | NO # | CONTINENTE TONY | 634-3946 | |
| | NO # | DUNCAN ROBERT JR | 634-3225 | |
| | NO # | ECENBARGER DALE | 634-2750 | 7 |
| | NO #★ | **GARIN CO THE** | **634-3526** | 8 |
| | NO #★ | **GINOCHIO LIVE STOCK** | **757-2600** | |
| | NO # | GOMEZ R M | 754-1460 | 7 |
| | NO # | HARRIS BRAD | 754-0395 | 3 |
| | NO # | HARRIS H L | 757-0858 | 6 |
| | NO # | HARRIS MARK | 757-2309 | +0 |
| | NO # | HOFFNER ROBT J | 634-4007 | |
| | NO #★ | **LOWE DAVE** | **757-7474** | 5 |
| | NO # | LOWE DAVE | 682-2156 | 7 |
| | NO # | MAGGIORE F A | 634-4991 | 5 |
| | NO # | MAGGIORE FRANKLIN | 634-4176 | 7 |
| | NO #★ | **MARSH CRK KENNELS** | **757-7474** | 4 |
| | NO # | MCCAULEY MARTIN | 754-7662 | 7 |
| | NO # | MCCURLEY PAUL | 634-3141 | +0 |
| | NO # | PEDERSEN NORMAN R | 634-3866 | |
| | NO # | PERRY FRANK E | 634-4571 | 4 |

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | Haines Criss-Cross Directory |

# BALFOUR RD 1975

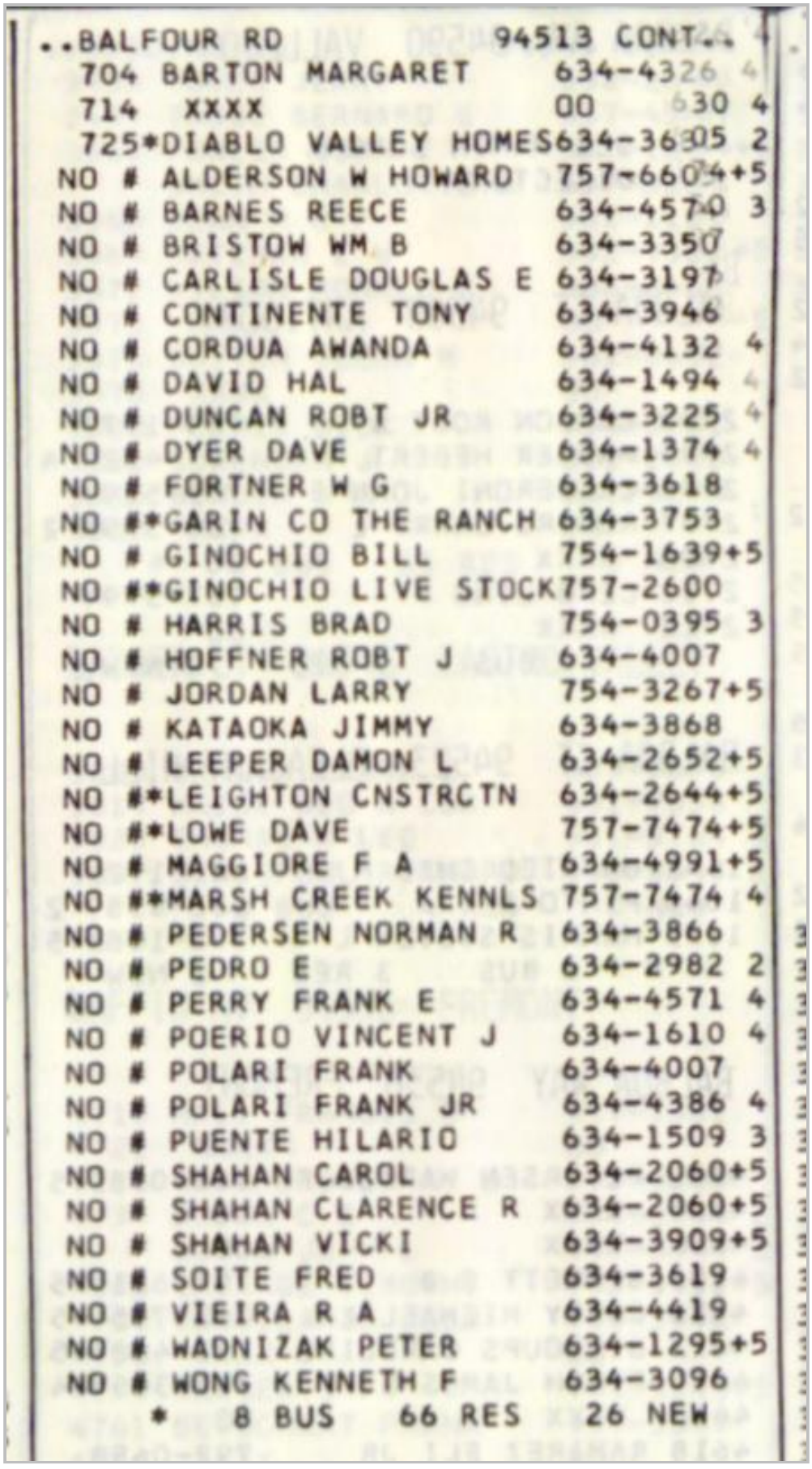


BALFOUR RD 94513 BRENTWOOD

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  2 GERRY LEONARD          634-3155
  8 SWOPE EDMOND           634-3631
 22 BIASI JOS D JR         634-2066+5
 40 LIBBEY V B             634-2895
 68 HERSKIND A S           634-4845
 88 CONTINENTE GERALD      634-4919
 90 DYER CARY              634-4120+5
106 PETERS MELVIN L        634-1713 3
116 MCCLELLAND WESLEY      634-3614
126 PORTWOOD HUGH          634-3861
136  XXXX                  OO
154 PEREIRA NORMAN L       634-3736
164  XXXX                  OO
172 WISELEY FREDDIE T      634-2594
182  XXXX                  OO
202 LAKKEN PETER O         634-3417
212 RYLEE K W              634-2203
222  XXXX                  OO
360 BETTENCOURT ROBT J     634-3071+5
500 WIRTH JOE              634-2665+5
505....WOODGATE MBL HM PK
    ACKERLEY L W           634-3070+5
    COMBS HASKEL           634-2683+5
    DILL WM A              634-4192+5
    HARRIS KENNETH E       634-2626+5
    LEWIS WESTIN E MRS     634-1395+5
    LOYD DONALD D          634-2477+5
    SARGENT CARL           634-3971+5
   *WOODGATE MBL HM PK     634-2626+5
505.....................
634 PROBST WM S            634-4453
644 REMMERS BARBARA A      634-2824+5
    REMMERS BOBBY LEE      634-2824+5
664½ FORTNER PAUL          634-2281+5
674 JACKSON B D            634-2019 4
684*WILLIAMS SANITRY SV    634-4855 4
694 HARRINGTON H R         634-4469
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| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | Haines Criss-Cross Directory |

# BALFOUR RD 1975



..BALFOUR RD 94513 CONT...

| | | |
|---|---|---|
| 704 | BARTON MARGARET | 634-4326 4 |
| 714 | XXXX | 00 630 4 |
| 725 | *DIABLO VALLEY HOMES | 634-3605 2 |
| NO # | ALDERSON W HOWARD | 757-6604+5 |
| NO # | BARNES REECE | 634-4570 3 |
| NO # | BRISTOW WM B | 634-3350 |
| NO # | CARLISLE DOUGLAS E | 634-3197 |
| NO # | CONTINENTE TONY | 634-3946 |
| NO # | CORDUA AWANDA | 634-4132 4 |
| NO # | DAVID HAL | 634-1494 4 |
| NO # | DUNCAN ROBT JR | 634-3225 4 |
| NO # | DYER DAVE | 634-1374 4 |
| NO # | FORTNER W G | 634-3618 |
| NO #* | GARIN CO THE RANCH | 634-3753 |
| NO # | GINOCHIO BILL | 754-1639+5 |
| NO #* | GINOCHIO LIVE STOCK | 757-2600 |
| NO # | HARRIS BRAD | 754-0395 3 |
| NO # | HOFFNER ROBT J | 634-4007 |
| NO # | JORDAN LARRY | 754-3267+5 |
| NO # | KATAOKA JIMMY | 634-3868 |
| NO # | LEEPER DAMON L | 634-2652+5 |
| NO #* | LEIGHTON CNSTRCTN | 634-2644+5 |
| NO #* | LOWE DAVE | 757-7474+5 |
| NO # | MAGGIORE F A | 634-4991+5 |
| NO #* | MARSH CREEK KENNLS | 757-7474 4 |
| NO # | PEDERSEN NORMAN R | 634-3866 |
| NO # | PEDRO E | 634-2982 2 |
| NO # | PERRY FRANK E | 634-4571 4 |
| NO # | POERIO VINCENT J | 634-1610 4 |
| NO # | POLARI FRANK | 634-4007 |
| NO # | POLARI FRANK JR | 634-4386 4 |
| NO # | PUENTE HILARIO | 634-1509 3 |
| NO # | SHAHAN CAROL | 634-2060+5 |
| NO # | SHAHAN CLARENCE R | 634-2060+5 |
| NO # | SHAHAN VICKI | 634-3909+5 |
| NO # | SOITE FRED | 634-3619 |
| NO # | VIEIRA R A | 634-4419 |
| NO # | WADNIZAK PETER | 634-1295+5 |
| NO # | WONG KENNETH F | 634-3096 |

* 8 BUS 66 RES 26 NEW



# APPENDIX F

## OLD REPUBLIC TITLE COMPANY

## Preliminary Title Report

OLD REPUBLIC TITLE COMPANY

1000 Burnett Ave, Suite 400
Concord, CA 94520
(925) 687-7880 Fax: (925) 687-4836

# PRELIMINARY REPORT

9TH AMEND

BLACKHAWK SERVICES
3820 Blackhawk Road
Danville, CA 94506

Our Order Number 0147013194-JQ

When Replying Please Contact:

Jennifer Quigley
JQuigley@ortc.com
(925) 687-7880

Property Address:

APN's 057-060-008 & 019-120-002, 007 & 008, Antioch, CA
[Unincorporated area of Contra Costa County]

In response to the above referenced application for a policy of title insurance, OLD REPUBLIC TITLE COMPANY, as issuing Agent of Old Republic National Title Insurance Company, hereby reports that it is prepared to issue, or cause to be issued, as of the date hereof, a Policy or Policies of Title Insurance describing the land and the estate or interest therein hereinafter set forth, insuring against loss which may be sustained by reason of any defect, lien or encumbrance not shown or referred to as an Exception below or not excluded from coverage pursuant to the printed Schedules, Conditions and Stipulations of said policy forms.

The printed Exceptions and Exclusions from the coverage and Limitations on Covered Risks of said Policy or Policies are set forth in Exhibit I attached. The policy to be issued may contain an arbitration clause. When the Amount of Insurance is less than that set forth in the arbitration clause, all arbitrable matters shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties. Limitations on Covered Risks applicable to the Homeowner's Policy of Title Insurance which establish a Deductible Amount and a Maximum Dollar Limit of Liability for certain coverages are also set forth in Exhibit I. Copies of the Policy forms should be read. They are available from the office which issued this report.

**Please read the exceptions shown or referred to below and the exceptions and exclusions set forth in Exhibit I of this report carefully. The exceptions and exclusions are meant to provide you with notice of matters which are not covered under the terms of the title insurance policy and should be carefully considered.**
**It is important to note that this preliminary report is not a written representation as to the condition of title and may not list all liens, defects, and encumbrances affecting title to the land.**

This report (and any supplements or amendments hereto) is issued solely for the purpose of facilitating the issuance of a policy of title insurance and no liability is assumed hereby. If it is desired that liability be assumed prior to the issuance of a policy of title insurance, a Binder or Commitment should be requested.

Dated as of January 18, 2019, at 7:30 AM

**OLD REPUBLIC TITLE COMPANY**
For Exceptions Shown or Referred to, See Attached

The form of policy of title insurance contemplated by this report is:

CLTA Standard Coverage Policy -1990. A specific request should be made if another form or additional coverage is desired.

The estate or interest in the land hereinafter described or referred or covered by this Report is:

Fee

Title to said estate or interest at the date hereof is vested in:

Peter Eugene Ginochio as Trustee of the Peter Eugene Ginochio Revocable Living Trust (Separate Property) dated November 15, 2006, as to an undivided 13.888889% interest; and

Joanne M. Baker, Trustee of the Joanne M. Baker Trust U/A/D 2/27/92, as to an undivided 13.888889% interest; and

Peter Eugene Ginochio and Joanne Baker, also known as Joanne Baker, as Co-Trustees of the James Ginochio Trust created under the declaration of 6/11/99, as to an undivided 5.555556% interest; and

John R. Ginochio, III, a married man as his sole and separate property, as to an undivided 20.777778% interest; and

Ronald S. Ginochio, Trustee of the John R. Ginochio III Children's 1999 Irrevocable Trust dated 4/5/99, as to an undivided 1.000000% interest; and

Ronald S. Ginochio and Sally N. Ginochio, Trustees of the Ron and Sally Ginochio Living Trust, as to an undivided 5.555556 interest; and

Anna M. Ginochio, Edward M. Ginochio and Paul L. Ginochio, Gina L. Ginochio-Robichaud and James M. Ginochio, as Co-Trustees of the Louis E. Ginochio Exemption Trust created 2/23/02, as to an undivided 4.666667% interest; and

Stephen M. Ginochio, a married man, as his sole and separate property, as to an undivided 1.666667% interest; and

Paul Ginochio and Patty Ginochio, Trustees of the Paul L. and Patty Ginochio Trust, U/A/D 6/24/02, as a Schedule 1 Community Property Asset, as to an undivided 7.166667% interest; and

Edward M. Ginochio, Trustee of the Edward M. Ginochio Separate Property Trust U/A/D 5/25/04, as to an undivided 7.166667% interest; and

Gina Ginochio-Robichaud, Trustee of the Gina L. Ginochio Separate Property Trust U/A/D 10/09/2012, as to an undivided 7.166667% interest; and

James Martin Ginochio, AKA James M. Ginochio, Trustee of the James M. Ginochio Trust U/A/D 11/27/2012, as to an undivided 7.166667% interest; and

Angelina Ginochio, a married woman as her sole and separate property, as to an undivided 1.666667% interest; and

Antonette Ginochio, a single woman, as to an undivided 1.666667% interest; and

John R. Ginochio, IV, a married man, as his sole and separate property, as to an undivided 1.000000% interest

The land referred to in this Report is situated in the unincorporated area of the County of Contra Costa, State of California, and is described as follows:

Section 16, the North 1/2 of Section 17 and the Southeast 1/4 of Section 17, Township 1 North, Range 2 East, Mount Diablo Base and Meridian.

EXCEPTING THEREFROM:

(A) As to the West 1/2 of the Southeast 1/4 of Section 16; the interest conveyed to Contra Costa County by deed recorded July 20, 1891 in Book 60 of Deeds, Page 219.

(B) As to the Southeast 1/4 of Section 17; the interest conveyed to Contra Costa County by deed recorded March 11, 1892 in Book 61 of Deeds, Page 216.

(C) As to the Southeast 1/4 of Section 17; The 9.10 acre parcel of land described in the deed to Andrew Smith, recorded July 6, 1893, Book 66, Deeds, Page 467.

(D) As to the North 1/2 of Section 17; The 5.10 acre parcel of land described in the deed to Andrew Smith, recorded April 30, 1894, Book 68 Deeds, Page 346.

(E) As to the East 1/2 of Section 17; the interest conveyed to Contra Costa County by deed recorded October 15, 1935 in Book 389 OR 423.

(F) The East 1/2 of the Southeast 1/4 of Section 16, Township 1 North, Range 2 East, Mount Diablo Base and Meridian.

(G) That portion thereof lying within Parcel 1 as described in the deed to Contra Costa County Flood Control and Water Conservation District, recorded June 8, 1965 in Book 4884 OR 425.

(H) An undivided one-half (1/2) right, title and interest and estate in and to all oil, gas and other hydrocarbons and minerals, as reserved in the deed from Louis D. Heidorn Shellenberger, et al, recorded March 12, 1946, Book 889, Page 43, Official Records.

(I) All oil, gas, casinghead gas and other hydrocarbons and minerals, as granted in the deeds to Louis E. Ginochio, et al in the deeds recorded December 24, 1964, Book 4770, Pages 815, 818, 821, 824, 836, 839 and 842, Official Records.

APN's 019-120-002; 019-120-007; 019-120-008; and 057-060-008

At the date hereof exceptions to coverage in addition to the Exceptions and Exclusions in said policy form would be as follows:

1. Taxes and assessments, general and special, for the fiscal year 2019 - 2020, a lien, but not yet due or payable.

2. Taxes and assessments, general and special, for the fiscal year 2018 - 2019, as follows:

| | | | |
|---|---|---|---|
| Assessor's Parcel No | : | 019-120-002 | |
| Code No. | : | 58-029 | |
| 1st Installment | : | $765.00 | Marked Paid |
| 2nd Installment | : | $765.00 | NOT Marked Paid |
| Land | : | $128,429.00 | |
| Imp. Value | : | $0.00 | |

3. Taxes and assessments, general and special, for the fiscal year 2018 - 2019, as follows:

| | | | |
|---|---|---|---|
| Assessor's Parcel No | : | 019-120-007 | |
| Code No. | : | 58-029 | |
| 1st Installment | : | $438.65 | Marked Paid |
| 2nd Installment | : | $438.65 | NOT Marked Paid |
| Land | : | $64,589.00 | |
| Imp. Value | : | $0.00 | |

4. Taxes and assessments, general and special, for the fiscal year 2018 - 2019, as follows:

| | | | |
|---|---|---|---|
| Assessor's Parcel No | : | 019-120-008 | |
| Code No. | : | 56-030 | |
| 1st Installment | : | $1,484.82 | Marked Paid |
| 2nd Installment | : | $1,484.82 | NOT Marked Paid |
| Land | : | $258,265.00 | |
| Imp. Value | : | $0.00 | |

5. Taxes and assessments, general and special, for the fiscal year 2018 - 2019, as follows:

| | | | |
|---|---|---|---|
| Assessor's Parcel No | : | 057-060-008 | |
| Code No. | : | 58-030 | |
| 1st Installment | : | $2,234.21 | Marked Paid |
| 2nd Installment | : | $2,234.21 | NOT Marked Paid |
| Land | : | $395,764.00 | |
| Imp. Value | : | $1,205.00 | |

6. The lien of supplemental taxes, if any, assessed pursuant to the provisions of Section 75, et seq., of the Revenue and Taxation Code of the State of California.

7. Rights of the public, County and/or City, in and to that portion of said land lying within the lines of Sand Creek Road, Deer Valley Road, Balfour Road and Empire Mine Road.

8. Any easement for water course over that portion of said land lying within the banks of Deer Creek.

9. An easement affecting that portion of said land and for the purposes stated herein and incidental purposes as provided in the following

| | | |
|---|---|---|
| Instrument | : | Deed |
| Granted To | : | Pacific Telephone and Telegraph Company |
| For | : | Pole Line Purposes |
| Recorded | : | February 13, 1913 in Book 190 of Official Records, Page 494 |
| Affects | : | A northerly portion |

10. An easement affecting that portion of said land and for the purposes stated herein and incidental purposes as provided in the following

| | | |
|---|---|---|
| Instrument | : | Grant of Right of Way |
| Granted to | : | Great Western Power Company of California |
| For | : | Pole line purposes |
| Recorded | : | March 30th, 1929 in Book 167 of Official Records, Page 408 |
| Affects | : | A portion |

11. An easement affecting that portion of said land and for the purposes stated herein and incidental purposes as provided in the following

| | | |
|---|---|---|
| Instrument | : | Easement |
| Granted to | : | Federal Engineering Company |
| For | : | Pipe line and pole line purposes |
| Recorded | : | January 24th, 1930 in Book 226 of Official Records, Page 26 |
| Affects | : | A portion |

NOTE: The location of the pole line was amended by Agreement by and between Peter Ginochio, et al, and Standard Pacific Gas Line Incorporated, recorded October 17, 1962 in Book 4224 OR 469.

12. An easement affecting that portion of said land and for the purposes stated herein and incidental purposes as provided in the following

| | | |
|---|---|---|
| Instrument | : | Easement |
| Granted to | : | Federal Engineering Company |
| For | : | Pipe line and pole line purposes |
| Recorded | : | February 28th, 1930 in Book 237 of Official Records, Page 6 |
| Affects | : | A portion |

NOTE: An amendment thereto was recorded April 17, 1930 in Book 228 OR 161 and re-recorded January 21, 1931 in Book 245 OR 279.

| | | |
|---|---|---|
| NOTE | : | The location of the pole line was amended by Agreement by and between Peter Ginochio, et al, and Standard Pacific Gas Line Incorporated, recorded October 17, 1962 in Book 4224 OR 469. |

13. An easement affecting that portion of said land and for the purposes stated herein and incidental purposes as provided in the following

| | | |
|---|---|---|
| Instrument | : | Grant of Right of Way |
| Granted to | : | Great Western Power Company of California |
| For | : | Pole line purposes |
| Recorded | : | January 20th, 1933 in Book 332 of Official Records, Page 142 |
| Affects | : | A portion |

14. An easement affecting that portion of said land and for the purposes stated herein and incidental purposes as provided in the following

| | | |
|---|---|---|
| Instrument | : | Easement |
| Granted to | : | Standard Oil Company of California |
| For | : | Pipe line purposes and pole line purposes |
| Recorded | : | September 26th, 1945 in Book 827 of Official Records, Page 94 |
| Affects | : | A portion |

NOTE: Said easement was assigned to Chevron Pipe Line Company, by instrument recorded March 24, 1994, Recorder's Series No. 94-82879.

15. An easement affecting that portion of said land and for the purposes stated herein and incidental purposes as provided in the following

| | | |
|---|---|---|
| Instrument | : | Easement |
| Granted to | : | Standard Oil Company of California |
| For | : | Pipe line purposes and pole line purposes |
| Recorded | : | October 5th, 1945 in Book 822 of Official Records, Page 486 |
| Affects | : | A portion |

NOTE: Said easement was assigned to Chevron Pipe Line Company, by instrument recorded March 24, 1994, Recorder's Series No. 94-82879.

16. An easement affecting that portion of said land and for the purposes stated herein and incidental purposes as provided in the following

| | | |
|---|---|---|
| Instrument | : | Grant Deed |
| Reserved by | : | Louisa E. Shellenberger |
| For | : | All easements and rights necessary for the production, storage, transportation, exploration, testing, with the right to drill or mine, all oil, gas, and other hydrocarbons and minerals therein |
| Recorded | : | March 12th, 1946 in Book 889 of Official Records, Page 43 |
| Affects | : | A portion |

17. An easement affecting that portion of said land and for the purposes stated herein and incidental purposes as provided in the following

| | | |
|---|---|---|
| Instrument | : | Right of Way |
| Granted to | : | Southern Pacific Pipe Lines, Inc. |
| For | : | Pipe line purposes, 16.5 feet in width |
| Recorded | : | December 6th, 1956 in Book 2892 of Official Records, Page 575 |
| Affects | : | A portion - the location thereof is not defined of record |

18. Rights granted in the deed from Louis Ginochio and Eda Ginochio, to various individuals, recorded December 24, 1964 in Book 4770 OR, Pages 815, 818, 821, 824, 836, 839 and 842, respectively.

Said rights are "the right of ingress and egress at all times for the purposes of mining, drilling, exploring, operating and developing said lands for oil, gas and other minerals, and storing, handling, transporting and marketing the same therefrom".

19. Easement for temporary detention of waters, sediment or debris and for flowage of run off waters and appurtenances thereto granted to Contra Costa County Flood Control and Water Conservation District recorded June 8, 1965, Book 4884, Official Records, Page 425.

(Affects a portion)

20. Williamson Act - Land Conservation Contract as follows:

| | | |
|---|---|---|
| City/County | : | Contra Costa |
| Landowner | : | John Ginochio, Jr., a married man, dealing with his separate property, Louis Ginochio and Eda Ginochio, his wife and Peter Ginochio, and Edith Ginochio, his wife |
| Recorded | : | February 27th, 1969 in Book 5821 of Official Records, Page 451 |
| Contract/File No. | : | 15/1318-RZ |

NOTE: The effect of the Notice of Nonrenewal, by the City of Antioch, recorded September 27, 1993, Book 18982, OR 863. and Recorded December 11, 2000, under Recorder's Serial Number 2000-0277604

21. An easement affecting that portion of said land and for the purposes stated herein and incidental purposes as provided in the following

| | | |
|---|---|---|
| Instrument | : | Right of Way |
| Granted to | : | Southern Pacific Pipe Lines, Inc. |
| For | : | Pipe line purposes |
| Recorded | : | September 2nd, 1983 in Book 11418 of Official Records, Page 105 |
| Affects | : | A portion |

22. Agreement for : Limited surface access
Executed By : Angelina Ginochio et al
and Between : Peter Eugene Ginochio et al

On the terms, covenants and conditions contained therein,

Dated : December 15, 1999
Recorded : January 18, 2000 in Official Records under Recorder's Serial Number 2000-10657

Affects this and other property.

23. Terms and conditions contained in the John R. Ginochio, III Children's 1999 Irrevocable Trust dated 4/5/99 as disclosed by Gift Deed

Recorded : April 6, 1999 in Official Records under Recorder's Serial Number 99-93573

NOTE: The requirement that:
A Certification of Trust be furnished in accordance with Probate Code Section 18100.5
The Company reserves the right to make additional exceptions and/or requirements.

24. Terms and conditions contained in the James Ginochio Trust created under Declaration of 6/11/99 as disclosed by Trustee's Grant Deed

Recorded : October 5, 1999 in Official Records under Recorder's Serial Number 99-264660

NOTE: The requirement that:
A Certification of Trust be furnished in accordance with Probate Code Section 18100.5
The Company reserves the right to make additional exceptions and/or requirements.

25. Terms and conditions contained in the Joanne Baker Trust U/A/D 2-27/92 as disclosed by Trust Transfer Deed

Recorded : May 22, 2001 in Official Records under Recorder's Serial Number 2001-133433

NOTE: The requirement that:
A Certification of Trust be furnished in accordance with Probate Code Section 18100.5
The Company reserves the right to make additional exceptions and/or requirements.

26. Terms and conditions contained in the Paul L. and Patty Ginochio Trust U/A/D 6/24/02, as a Schedule 1 Community Property Asset as disclosed by Trust Transfer Deed

Recorded : July 26, 2002 in Official Records under Recorder's Serial Number 2002-261701

NOTE: The requirement that:
A Certification of Trust be furnished in accordance with Probate Code Section 18100.5
The Company reserves the right to make additional exceptions and/or requirements.

27. Terms and conditions contained in the Edward M. Ginochio Separate Property Trust U/A/D 5/25/04 as disclosed by Trust Transfer Deed

Recorded : May 26, 2004 in Official Records under Recorder's Serial Number 2004-199652

NOTE: The requirement that:
A Certification of Trust be furnished in accordance with Probate Code Section 18100.5
The Company reserves the right to make additional exceptions and/or requirements.

28. Terms and conditions contained in the Peter Eugene Ginochio Revocable Living Trust (Separate Property) dated November 15, 2006 as disclosed by Quitclaim Deed

Dated : August 3, 2007
Recorded : August 6, 2007 in Official Records under Recorder's Serial Number 2007-0225954-00

NOTE: The requirement that:
A Certification of Trust be furnished in accordance with Probate Code Section 18100.5
The Company reserves the right to make additional exceptions and/or requirements.

29. Terms and conditions contained in the Gina L. Ginochio Separate Property Trust as disclosed by Trust Transfer Deed

Recorded : October 10, 2012 in Official Records under Recorder's Serial Number 2012-250139

NOTE: The requirement that:
A Certification of Trust be furnished in accordance with Probate Code Section 18100.5
The Company reserves the right to make additional exceptions and/or requirements.

30. Terms and conditions contained in the James M. Ginochio Trust as disclosed by Trust Transfer Deed

Recorded : November 28, 2012 in Official Records under Recorder's Serial Number 2012-302911

NOTE: The requirement that:
A Certification of Trust be furnished in accordance with Probate Code Section 18100.5
The Company reserves the right to make additional exceptions and/or requirements.

31. Agreement for : Tenancy in Common
Executed By : Peter Eugene Ginochio et al
and Between : Joanne Baker et al

On the terms, covenants and conditions contained therein,

Recorded : December 15, 2013 in Official Records under Recorder's Serial Number 2013-0012304

The interest of Ronald S. Ginochio was assigned to Ronald S. Ginochio and Sally N. Ginochio, as Trustees of the Ron and Sally Ginochio Living Trust, by Assignment of Tenancy-In-Common Agreement, recorded August 4, 2017 in Official Records under Recorder's Series No. 2017-0140841.

32. An easement affecting that portion of said land and for the purposes stated herein and incidental purposes as provided in the following

Instrument : Cathodic Protection Facility Easement
Granted To : Chevron Pipe Line Company, a Delaware corporation
For : Cathodic pipe protection system
Recorded : January 24, 2014 in Official Records under Recorder's Serial Number 2014-0012506
Affects : A portion

Upon the terms and provisions contained therein

33. Oil and Gas Lease for and upon the terms, covenants and conditions contained or referred to therein,

| | | |
|---|---|---|
| Dated | : | March 20, 2014 |
| Lessor | : | Donna McKenzie, as an Heir and Devisee of the Estate of Edith M. Shellenberger, deceased |
| Lessee | : | West Coast Land Service, a sole proprietorship |
| Recorded | : | June 13, 2014 in Official Records under Recorder's Serial Number 2014-0096944 |

Affects the northeast quarter of Section 16

NOTE: The Lessee's interest under said lease was assigned of record,

| | | |
|---|---|---|
| From | : | West Coast Land Service, a sole proprietorship |
| To | : | Orchard E&P, LLC, a California limited liability company |
| Recorded | : | September 30, 2014 in Official Records under Recorder's Serial Number 2014-0167278 |

NOTE: The Lessee's interest under said lease was assigned of record,

| | | |
|---|---|---|
| From | : | Orchard E&P, LLC, a California limited liability company |
| To | : | Powerdrive Oil & Gas Company, LLC, a Nevada limited liability company |
| Recorded | : | December 8, 2016 in Official Records under Recorder's Serial Number 2016-0266586 |

34. Oil and Gas Lease for and upon the terms, covenants and conditions contained or referred to therein,

| | | |
|---|---|---|
| Dated | : | March 20, 2014 |
| Lessor | : | Hugh Shellenberger, as an Heir and Devisee of the Estate of Edith M. Shellenberger, deceased |
| Lessee | : | West Coast Land Service, a sole proprietorship |
| Recorded | : | June 13, 2014 in Official Records under Recorder's Serial Number 2014-0096945 |

Affects the northeast quarter of Section 16

NOTE: The Lessee's interest under said lease was assigned of record,

| | | |
|---|---|---|
| From | : | West Coast Land Service, a sole proprietorship |
| To | : | Orchard E&P, LLC, a California limited liability company |
| Recorded | : | September 30, 2014 in Official Records under Recorder's Serial Number 2014-0167278 |

NOTE: The Lessee's interest under said lease was assigned of record,

| | | |
|---|---|---|
| From | : | Orchard E&P, LLC, a California limited liability company |
| To | : | Powerdrive Oil & Gas Company, LLC, a Nevada limited liability company |
| Recorded | : | December 8, 2016 in Official Records under Recorder's Serial Number 2016-0266586 |

35. Oil and Gas Lease for and upon the terms, covenants and conditions contained or referred to therein,

| | | |
|---|---|---|
| Dated | : | March 20, 2014 |
| Lessor | : | Robert Shellenberger, a married man, as his sole and separate property |
| Lessee | : | West Coast Land Service, a sole proprietorship |
| Recorded | : | June 13, 2014 in Official Records under Recorder's Serial Number 2014-0096946 |

Affects the northeast quarter of Section 16

NOTE: The Lessee's interest under said lease was assigned of record,

| | | |
|---|---|---|
| From | : | West Coast Land Service, a sole proprietorship |
| To | : | Orchard E&P, LLC, a California limited liability company |
| Recorded | : | September 30, 2014 in Official Records under Recorder's Serial Number 2014-0167278 |

NOTE: The Lessee's interest under said lease was assigned of record,

| | | |
|---|---|---|
| From | : | Orchard E&P, LLC, a California limited liability company |
| To | : | Powerdrive Oil & Gas Company, LLC, a Nevada limited liability company |
| Recorded | : | December 8, 2016 in Official Records under Recorder's Serial Number 2016-0266586 |

36. Oil and Gas Lease for and upon the terms, covenants and conditions contained or referred to therein,

| | | |
|---|---|---|
| Dated | : | March 20, 2014 |
| Lessor | : | William C. Shellenberger, a married man, as his sole and separate property |
| Lessee | : | West Coast Land Service, a sole proprietorship |
| Recorded | : | June 13, 2014 in Official Records under Recorder's Serial Number 2014-0096947 |

Affects the northeast quarter of Section 16

NOTE: The Lessee's interest under said lease was assigned of record,

| | | |
|---|---|---|
| From | : | West Coast Land Service, a sole proprietorship |
| To | : | Orchard E&P, LLC, a California limited liability company |
| Recorded | : | September 30, 2014 in Official Records under Recorder's Serial Number 2014-0167278 |

NOTE: The Lessee's interest under said lease was assigned of record,

| | | |
|---|---|---|
| From | : | Orchard E&P, LLC, a California limited liability company |
| To | : | Powerdrive Oil & Gas Company, LLC, a Nevada limited liability company |
| Recorded | : | December 8, 2016 in Official Records under Recorder's Serial Number 2016-0266586 |

37. Oil and Gas Lease for and upon the terms, covenants and conditions contained or referred to therein,

| | | |
|---|---|---|
| Dated | : | March 20, 2014 |
| Lessor | : | Dewey Claude DeMartini, as an Heir and Devisee of the Estate of Caroline DeMartini, deceased, sole Heir and Devisee of the Estate of Emma LeMoin, also known as Emma C. LeMoin, deceased |
| Lessee | : | West Coast Land Service, a sole proprietorship |
| Recorded | : | June 26, 2014 in Official Records under Recorder's Serial Number 2014-0104986 |

Affects the northeast quarter of Section 16

NOTE: The Lessee's interest under said lease was assigned of record,

| | | |
|---|---|---|
| From | : | West Coast Land Service, a sole proprietorship |
| To | : | Orchard E&P, LLC, a California limited liability company |
| Recorded | : | September 30, 2014 in Official Records under Recorder's Serial Number 2014-0167278 |

NOTE: The Lessee's interest under said lease was assigned of record,

| | | |
|---|---|---|
| From | : | Orchard E&P, LLC, a California limited liability company |
| To | : | Powerdrive Oil & Gas Company, LLC, a Nevada limited liability company |
| Recorded | : | December 8, 2016 in Official Records under Recorder's Serial Number 2016-0266586 |

38. Oil and Gas Lease for and upon the terms, covenants and conditions contained or referred to therein,

| | | |
|---|---|---|
| Dated | : | March 20, 2014 |
| Lessor | : | Linda Carol Machado, as an Heir and Devisee of the Estate of Caroline DeMartini, deceased, sole Heir and Devisee of the Estate of Emma LeMoin, also known as Emma C. LeMoin, deceased |
| Lessee | : | West Coast Land Service, a sole proprietorship |
| Recorded | : | June 26, 2014 in Official Records under Recorder's Serial Number 2014-0104987 |

Affects the northeast quarter of Section 16

NOTE: The Lessee's interest under said lease was assigned of record,

| | | |
|---|---|---|
| From | : | West Coast Land Service, a sole proprietorship |
| To | : | Orchard E&P, LLC, a California limited liability company |
| Recorded | : | September 30, 2014 in Official Records under Recorder's Serial Number 2014-0167278 |

NOTE: The Lessee's interest under said lease was assigned of record,

| | | |
|---|---|---|
| From | : | Orchard E&P, LLC, a California limited liability company |
| To | : | Powerdrive Oil & Gas Company, LLC, a Nevada limited liability company |
| Recorded | : | December 8, 2016 in Official Records under Recorder's Serial Number 2016-0266586 |

39. Oil and Gas Lease for and upon the terms, covenants and conditions contained or referred to therein,

| | | |
|---|---|---|
| Dated | : | January 1, 2014 |
| Lessor | : | Ronald S. Ginochio, et al |
| Lessee | : | Sunset Exploration, Inc., a California corporation |
| Recorded | : | January 9, 2015 in Official Records under Recorder's Serial Number 2015-0004288 |

40. Oil and Gas Lease for and upon the terms, covenants and conditions contained or referred to therein,

| | | |
|---|---|---|
| Dated | : | October 29, 2014 |
| Lessor | : | R. Paul Bonnar, as Conservator of the Estate of Diane B. Kaufman |
| Lessee | : | West Coast Land Service, a sole proprietorship |
| Recorded | : | March 12, 2015 in Official Records under Recorder's Serial Number 2015-0044128 |

NOTE: The Lessee's interest under said lease was assigned of record,

| | | |
|---|---|---|
| From | : | West Coast Land Service, a sole proprietorship |
| To | : | Orchard E&P, LLC, a California limited liability company |
| Recorded | : | May 14, 2015 in Official Records under Recorder's Serial Number 2015-0094861 |

41. Terms and conditions contained in the Ron and Sally Ginochio Living Trust as disclosed by Quitclaim Deed.

Recorded: September 21, 2015 in Official Records under Recorder's Serial Number 2015-0195352

The requirement that:

A Certification of Trust be furnished in accordance with Probate Code Section 18100.5; and

If the acting trustee is a successor trustee the additional requirement the Company is provided a complete copy of the trust, with all amendments and any intervening trustee is no longer acting in that capacity by providing copies of resignation letters, etc.

The Company reserves the right to make additional exceptions and/or requirements upon review of the above.

42. Option to Purchase,

| | | |
|---|---|---|
| Dated | : | January 14, 2014 |
| Optionor | : | Peter Eugene Ginochio, as Trustee of the Peter Eugene Ginochio Living Trust, et al |
| Optionee | : | GBN Partners LLC, a Delaware limited liability company |
| Disclosed by | : | Memorandum of Option |
| Recorded | : | September 25, 2017 in Official Records under Recorder's Serial Number 2017-0174855 |

43. Any unrecorded and subsisting leases.

44. Rights and claims of parties in possession.

45. Facts which would be disclosed by a comprehensive survey of the premises herein described.

46. The requirement that this company be provided with a suitable Owner's Affidavit from the Seller (form ORT 174). The Company reserves the right to make additional exceptions and/or requirements upon review of the Owner's Affidavit.

47. Note: It appears that Old Republic National Title Insurance may be asked to insure against the rights of Mechanics Lien claimants. The Company may require the following:

A. Signed indemnities by all parties.
B. A copy of the construction cost breakdown.
C. Appropriate financial statements from all Indemnitors.

48. The requirement that this Company be provided with an opportunity to inspect the land (the Company reserves the right to make additional exceptions and/or requirements upon completion of its inspection).

49. The effect of instruments, proceedings, liens, decrees or other matters which do not specifically describe said land but which, if any do exist, may affect the title or impose liens or encumbrances thereon. The name search necessary to ascertain the existence of such matters has not been completed and, in order to do so, we require a signed Statement of Identity from or on behalf of Joanne M. Baker.

50. The effect of instruments, proceedings, liens, decrees or other matters which do not specifically describe said land but which, if any do exist, may affect the title or impose liens or encumbrances thereon. The name search necessary to ascertain the existence of such matters has not been completed and, in order to do so, we require a signed Statement of Identity from or on behalf of Louis E. Ginochio.

51. Any interest of a spouse/domestic partner of Peter Eugene Ginochio, John R. Ginochio III, Paul L. Ginochio, Edward M. Ginochio, Gina L. Ginochio and James M. Ginochio.

**---------- Informational Notes ----------**

A. The applicable rate(s) for the policy(s) being offered by this report or commitment appears to be section(s) 1.2 and 2.1.

B. NOTE: The last recorded transfer or agreement to transfer the land described herein is as follows:

| | | |
|---|---|---|
| Instrument Entitled | : | Grant Deed |
| By/From | : | Peter Eugene Ginochio as Trustee of the Peter Eugene Ginochio Revocable Living Trust (Separate Property) dated November 15, 2006, and Joanne M. Baker, Trustee of the Joanne M. Baker Trust U/A/D 2/27/92, and Peter Eugene Ginochio and Joanne Baker, also known as Joanne Baker, as Co-Trustees of the James Ginochio Trust created under the declaration of 6/11/99, and John R. Ginochio, III, a married man as his sole and separate property, and Ronald S. Ginochio, Trustee of the John R. Ginochio III Children's 1999 Irrevocable Trust dated 4/5/99, and Ronald S. Ginochio, a married man, as his sole and separate property, and Anna M. Ginochio, Edward M. Ginochio and Paul L. Ginochio, Co-Trustees of the Louis E. Ginochio Exemption Trust created 2/23/02, and Stephen M. Ginochio, a married man, as his sole and separate property, and Paul Ginochio and Patty Ginochio, Trustees of the Paul L. and Patty Ginochio Trust, U/A/D 6/24/02, as a Schedule 1 Community Property Asset, and Edward M. Ginochio, Trustee of the Edward M. Ginochio Separate Property Trust U/A/D 5/25/04, and Gina Ginochio-Robichaud, Trustee of the Gina L. Ginochio Separate Property Trust U/A/D 10/09/2012, and James Martin Ginochio, AKA James M. Ginochio, Trustee of the James M. Ginochio Trust U/A/D 11/27/2012, and Angelina Ginochio, a married woman as her sole and separate property, and Antonette Ginochio, a single woman, and John R. Ginochio, IV, a married man, as his sole and separate property |
| To | : | Peter Eugene Ginochio as Trustee of the Peter Eugene Ginochio Revocable Living Trust (Separate Property) dated November 15, 2006, as to an undivided 13.888889% interest; and Joanne M. Baker, Trustee of the Joanne M. Baker Trust U/A/D 2/27/92, as to an undivided 13.888889% interest; and Peter Eugene Ginochio and Joanne Baker, also known as Joanne Baker, as Co-Trustees of the James Ginochio Trust created under the declaration of 6/11/99, as to an undivided 5.555556% interest; and John R. Ginochio, III, a married man as his sole and separate property, as to an undivided 20.777778% interest; and Ronald S. Ginochio, Trustee of the John R. Ginochio III Children's 1999 Irrevocable Trust dated 4/5/99, as to an undivided 1.000000% interest; and Ronald S. Ginochio, a married man, as his sole and separate property, as to an undivided 5.555556 interest; and Anna M. Ginochio, Edward M. Ginochio and Paul L. Ginochio, Co-Trustees of the Louis E. Ginochio Exemption Trust created 2/23/02, as to an undivided 4.666667% interest; and Stephen M. Ginochio, a married man, as his sole and separate property, as to an undivided 1.666667% interest; and Paul Ginochio and Patty Ginochio, Trustees of the Paul L. and Patty Ginochio Trust, U/A/D 6/24/02, as a Schedule 1 Community Property Asset, as to an undivided 7.166667% interest; and Edward M. Ginochio, Trustee of |

the Edward M. Ginochio Separate Property Trust U/A/D 5/25/04, as to an undivided 7.166667% interest; and Gina Ginochio-Robichaud, Trustee of the Gina L. Ginochio Separate Property Trust U/A/D 10/09/2012, as to an undivided 7.166667% interest; and James Martin Ginochio, AKA James M. Ginochio, Trustee of the James M. Ginochio Trust U/A/D 11/27/2012, as to an undivided 7.166667% interest; and Angelina Ginochio, a married woman as her sole and separate property, as to an undivided 1.666667% interest; and Antonette Ginochio, a single woman, as to an undivided 1.666667% interest; and John R. Ginochio, IV, a married man, as his sole and separate property, as to an undivided 1.000000% interest

Recorded : September 5, 2014 in Official Records under Recorder's Serial Number 2014-0150642

C. NOTE: The last recorded transfer or agreement to transfer the land described herein is as follows:

Instrument
Entitled : Quitclaim Deed
By/From : Ronald S. Ginochio, a married man, as his sole and separate property
To : Ronald S. Ginochio and Sally N. Ginochio, Trustees of rhte Ron and Sally Ginochio Living Trust
Recorded : September 21, 2015 in Official Records under Recorder's Serial Number 2015-0195352

D. Affidavit - Change of Trustees; the current acting trustees of The Louis E. Ginochio Exemption Trust created under Louis E. and Anna M. Ginochio Trust dated 8/11/93, are Anna M. Ginochio, Edward M. Ginochio, Paul L. Ginochio, Gina L. Ginochio-Robichaud and James M. Ginochio, as C0-Trustees, recorded December 4, 2018 in Official Records, under Recorder's Series No. 2018-0194091.

Exhibit I

**CALIFORNIA LAND TITLE ASSOCIATION**
**STANDARD COVERAGE POLICY - 1990**
**EXCLUSIONS FROM COVERAGE**

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building or zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or {iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien, or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.-

   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.

2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.

3. Defects, liens, encumbrances, adverse claims or other matters:

   (a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;

   (b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;.

   (c) resulting in no loss or damage to the insured claimant;

   (d) attaching or created subsequent to Date of Policy; or

   (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage or for the estate or interest insured by this policy.

4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with the applicable doing business laws of the state in which the land Is situated.

5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.

6. Any claim, which arises out of the transaction vesting in the insured the estate of interest insured by this policy or the transaction creating the interest of the insured lender, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws.

**EXCEPTIONS FROM COVERAGE - SCHEDULE B, PART I**

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments Which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.

   Proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the public records.

2. Any facts, rights, interests, or claims Which are not shown by the public records but which could be ascertained by an inspection of the land which may be asserted by persons in possession thereof,

3. Easements, liens or encumbrances, or claims thereof, which are not shown by the public records.

4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by the public records.

5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b) or (c) are shown by the public records.

6. Any lien or right to a lien for services, labor or material not shown by the public records.

OLD REPUBLIC TITLE

rev. 07/2016

**FACTS**

# WHAT DOES OLD REPUBLIC TITLE DO WITH YOUR PERSONAL INFORMATION?

| | |
|---|---|
| **Why?** | Financial companies choose how they share your personal information. Federal law gives consumers the right to limit some but not all sharing. Federal law also requires us to tell you how we collect, share, and protect your personal information. Please read this notice carefully to understand what we do. |
| **What?** | The types of personal information we collect and share depend on the product or service you have with us. This information can include:<br>• Social Security number and employment information<br>• Mortgage rates and payments and account balances<br>• Checking account information and wire transfer instructions<br>When you are no longer our customer, we continue to share your information as described in this notice. |
| **How?** | All financial companies need to share customers' personal information to run their everyday business. In the section below, we list the reasons financial companies can share their customers' personal information; the reasons Old Republic Title chooses to share; and whether you can limit this sharing. |

| Reasons we can share your personal information | Does Old Republic Title share? | Can you limit this sharing? |
|---|---|---|
| **For our everyday business purposes —** such as to process your transactions, maintain your account(s), or respond to court orders and legal investigations, or report to credit bureaus | **Yes** | **No** |
| **For our marketing purposes —** to offer our products and services to you | **No** | **We don't share** |
| **For joint marketing with other financial companies** | **No** | **We don't share** |
| **For our affiliates' everyday business purposes —** information about your transactions and experiences | **Yes** | **No** |
| **For our affiliates' everyday business purposes —** information about your creditworthiness | **No** | **We don't share** |
| **For our affiliates to market to you** | **No** | **We don't share** |
| **For non-affiliates to market to you** | **No** | **We don't share** |

| | |
|---|---|
| Questions | **Go to [www.oldrepublictitle.com](http://www.oldrepublictitle.com)** (Contact Us) |

| Who we are | |
|---|---|
| Who is providing this notice? | Companies with an Old Republic Title name and other affiliates. Please see below for a list of affiliates. |

| What we do | |
|---|---|
| **How does Old Republic Title protect my personal information?** | To protect your personal information from unauthorized access and use, we use security measures that comply with federal law. These measures include computer safeguards and secured files and buildings. For more information, visit http://www.OldRepublicTitle.com/newnational/Contact/privacy. |
| **How does Old Republic Title collect my personal information?** | We collect your personal information, for example, when you:<br>• Give us your contact information or show your driver's license<br>• Show your government-issued ID or provide your mortgage information<br>• Make a wire transfer<br>We also collect your personal information from others, such as credit bureaus, affiliates, or other companies. |
| **Why can't I limit all sharing?** | Federal law gives you the right to limit only:<br>• Sharing for affiliates' everyday business purposes - information about your creditworthiness<br>• Affiliates from using your information to market to you<br>• Sharing for non-affiliates to market to you<br><br>State laws and individual companies may give you additional rights to limit sharing. See the "Other important information" section below for your rights under state law. |

| Definitions | |
|---|---|
| **Affiliates** | Companies related by common ownership or control. They can be financial and nonfinancial companies.<br>• Our affiliates include companies with an Old Republic Title name, and financial companies such as Attorneys' Title Fund Services, LLC, Lex Terrae National Title Services, Inc., Mississippi Valley Title Services Company, and The Title Company of North Carolina. |
| **Non-affiliates** | Companies not related by common ownership or control. They can be financial and non-financial companies.<br>• Old Republic Title does not share with non-affiliates so they can market to you |
| **Joint marketing** | A formal agreement between non-affiliated financial companies that together market financial products or services to you.<br>• Old Republic Title doesn't jointly market. |

## Other Important Information

Oregon residents only: We are providing you this notice under state law. We may share your personal information (described on page one) obtained from you or others with non-affiliate service providers with whom we contract, such as notaries and delivery services, in order to process your transactions. You may see what personal information we have collected about you in connection with your transaction (other than personal information related to a claim or legal proceeding). To see your information, please click on "Contact Us" at www.oldrepublictitle.com and submit your written request to the Legal Department. You may see and copy the information at our office or ask us to mail you a copy for a reasonable fee. If you think any information is wrong, you may submit a written request online to correct or delete it. We will let you know what actions we take. If you do not agree with our actions, you may send us a statement.

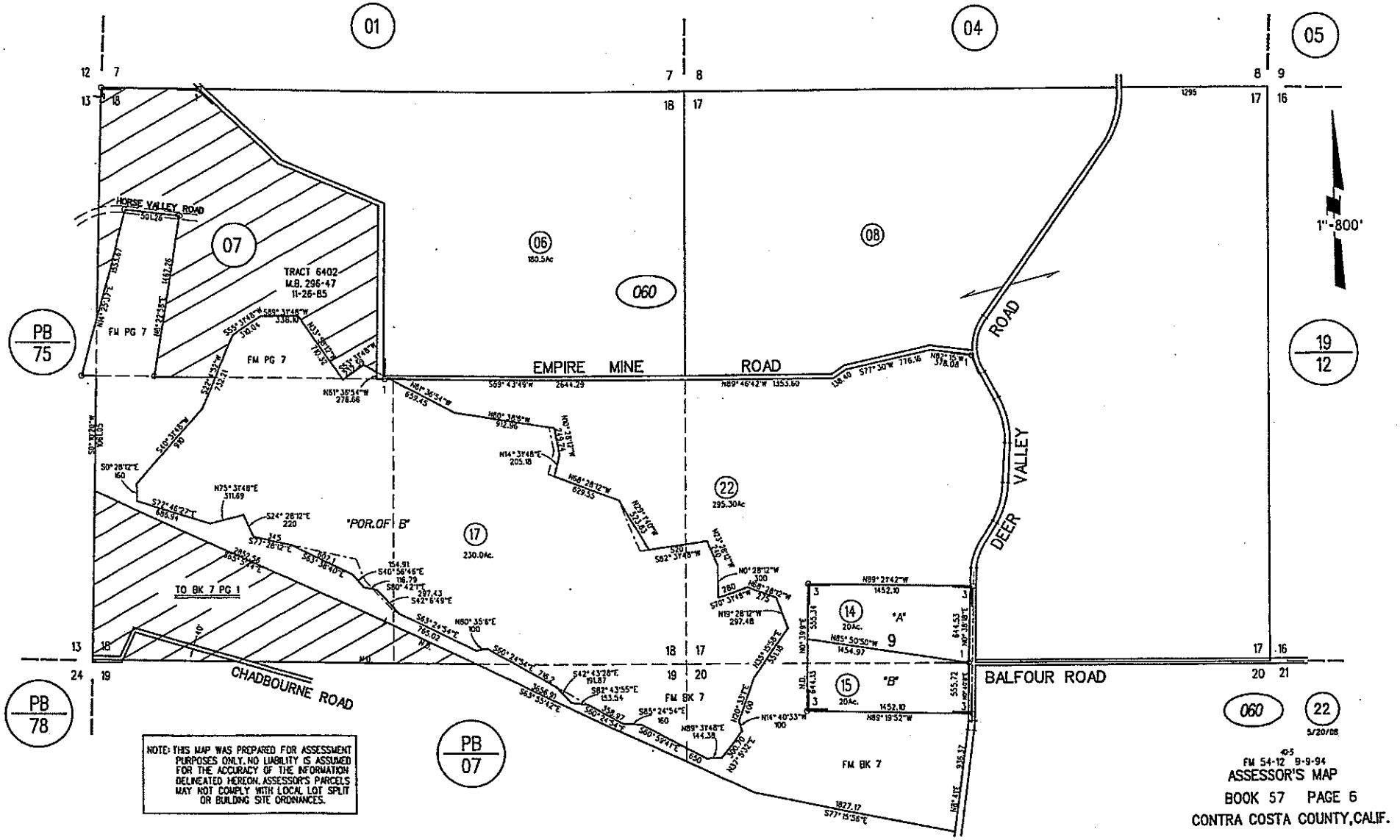
## Affiliates Who May be Delivering This Notice

| | | | | |
|---|---|---|---|---|
| **American First Abstract, LLC** | **American First Title & Trust Company** | **American Guaranty Title Insurance Company** | **Attorneys' Title Fund Services, LLC** | **Compass Abstract, Inc.** |
| **eRecording Partners Network, LLC** | **Genesis Abstract, LLC** | **Kansas City Management Group, LLC** | **L.T. Service Corp.** | **Lenders Inspection Company** |
| **Lex Terrae National Title Services, Inc.** | **Lex Terrae, Ltd.** | **Mara Escrow Company** | **Mississippi Valley Title Services Company** | **National Title Agent's Services Company** |
| **Old Republic Branch Information Services, Inc.** | **Old Republic Diversified Services, Inc.** | **Old Republic Exchange Company** | **Old Republic National Title Insurance Company** | **Old Republic Title and Escrow of Hawaii, Ltd.** |
| **Old Republic Title Co.** | **Old Republic Title Company of Conroe** | **Old Republic Title Company of Indiana** | **Old Republic Title Company of Nevada** | **Old Republic Title Company of Oklahoma** |
| **Old Republic Title Company of Oregon** | **Old Republic Title Company of St. Louis** | **Old Republic Title Company of Tennessee** | **Old Republic Title Information Concepts** | **Old Republic Title Insurance Agency, Inc.** |
| **Old Republic Title, Ltd.** | **Republic Abstract & Settlement , LLC** | **Sentry Abstract Company** | **The Title Company of North Carolina** | **Title Services, LLC** |
| **Trident Land Transfer Company, LLC** | | | | |

SEC 17&18 T1N R2E MDBM

1- POR 79PM18-22 7/26/79

2- 163PM19 10/11/93




FM 54-12 9-9-94

ASSESSOR'S MAP

BOOK 57 PAGE 6

CONTRA COSTA COUNTY, CALIF.

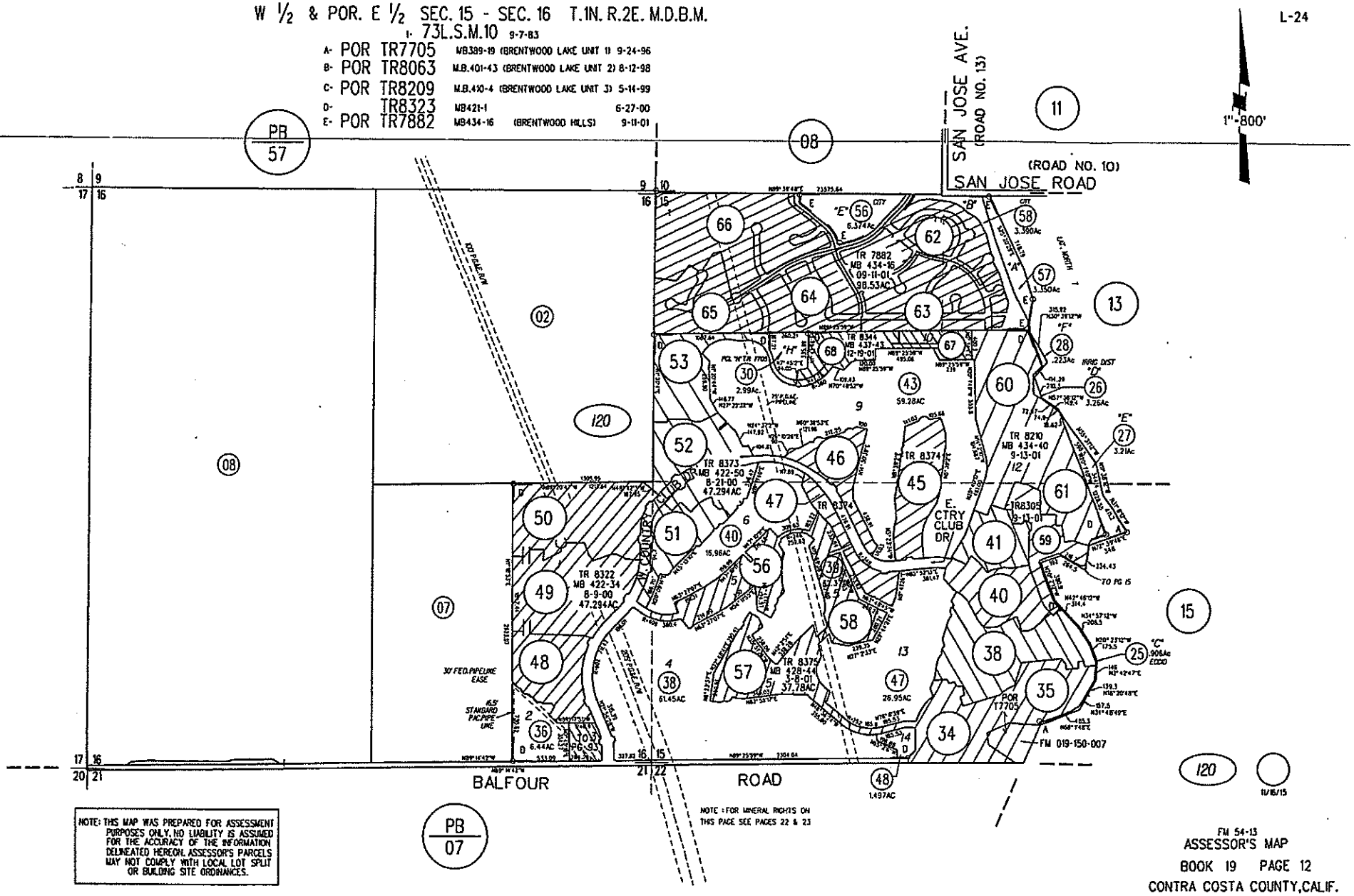
W ½ & POR. E ½ SEC. 15 - SEC. 16 T.1N. R.2E. M.D.B.M.

1- 73L.S.M.10 9-7-83

A- POR TR7705 MB389-19 (BRENTWOOD LAKE UNIT 1) 9-24-96
B- POR TR8063 M.B.401-43 (BRENTWOOD LAKE UNIT 2) 8-12-98
C- POR TR8209 M.B.430-4 (BRENTWOOD LAKE UNIT 3) 5-14-99
D- TR8323 MB421-1 6-27-00
E- POR TR7882 MB434-16 (BRENTWOOD HILLS) 9-11-01

L-24

1"=800'




NOTE: THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSES ONLY. NO LIABILITY IS ASSUMED FOR THE ACCURACY OF THE INFORMATION DELINEATED HEREON. ASSESSOR'S PARCELS MAY NOT COMPLY WITH LOCAL LOT SPLIT OR BUILDING SITE ORDINANCES.

11/16/15

FM 54-13
ASSESSOR'S MAP
BOOK 19 PAGE 12
CONTRA COSTA COUNTY, CALIF.



# APPENDIX G

## ENVIRONMENTAL SITE ASSESSMENT QUESTIONNAIRES (2)

Project Name: Ginochio Property
Project No. 4894.002.000

ENGEO
Expect Excellence


| | |
|---|---|
| ☐ 2010 Crow Canyon Place • Suite 250 • San Ramon, CA 94583 | (925) 866-9000 • Fax (888) 279-2698 |
| ☐ 2213 Plaza Drive • Rocklin, CA 95765 | (916) 786-8883 • Fax (888) 279-2698 |
| ☐ 101 California Street • Suite 875 • San Francisco, CA 94104 | (415) 284-9900 • Fax (888) 279-2698 |
| ☐ 6399 San Ignacio Avenue • Suite 150 • San Jose, CA 95119 | (408) 574-4900 • Fax (888) 279-2698 |
| ■ 17278 Golden Valley Parkway • Lathrop, CA 95330 | (209) 835-0610 • Fax (888) 279-2698 |
| ☐ 2646 Santa Maria Way • Suite 107 • Santa Maria, CA 93455 | (805) 888-1110 • Fax (888) 279-2698 |
| ☐ 6 Morgan • Suite 162 • Irvine, CA 92618 | (949) 529-3479 • Fax (888) 279-2698 |
| ☐ 1630 San Pablo Avenue • Suite 200 • Oakland, CA 94612 | (510) 451-1255 • Fax (888) 279-2698 |


## ENVIRONMENTAL SITE ASSESSMENT QUESTIONNAIRE FOR CLIENT

To evaluate the potential for possible environmentally related impacts and site contamination the following information is requested. This questionnaire is to be completed by the user of the phase one environmental site assessment, or their authorized representative.

**PART I**

1. Property address and Assessor's Parcel Number (APN):
   Balfour Road at Deer Valley Road
   APN's 019-120-002, -007, -008 & 057-060-008
   east of Deer Valley Road.
2. Current property owner (name, address, voice/fax number):
   Ginochio Family, contact Anna Ginochio
   3401 Walnut Ave. Concord CA 94519
3. Date current property owner assumed title of property:
   1930's
4. Current property development/improvements: Vacant
   one active gas well in NE section
   3 gaslines traversing site: Chevron/StanPac 24" 18"
   Kinder Morgan + PG+E Line (abandoned 26")
5. Past property use, development/improvements:
   dry-land farming + grazing
   prev. oil production on site (biggest in east) abandoned
6. Neighboring property uses:
   North: dryland farming. Current application for urban development in the City of Antioch.
   West: Roddy Ranch + Open Space
   South: vacant land with ranchettes, & high school.
   East: Shadow Lakes Residential Community.

Project Name: Ginochio Property
Project No. 4894.002.000

ENGEO
Expect Excellence


| | |
|---|---|
| ☐ 2010 Crow Canyon Place • Suite 250 • San Ramon, CA 94583 | (925) 866-9000 • Fax (888) 279-2698 |
| ☐ 2213 Plaza Drive • Rocklin, CA 95765 | (916) 786-8883 • Fax (888) 279-2698 |
| ☐ 101 California Street • Suite 875 • San Francisco, CA 94104 | (415) 284-9900 • Fax (888) 279-2698 |
| ☐ 6399 San Ignacio Avenue • Suite 150 • San Jose, CA 95119 | (408) 574-4900 • Fax (888) 279-2698 |
| ☒ 7278 Golden Valley Parkway • Lathrop, CA 95330 | (209) 835-0610 • Fax (888) 279-2698 |
| ☐ 2646 Santa Maria Way • Suite 107 • Santa Maria, CA 93455 | (805) 888-1110 • Fax (888) 279-2698 |
| ☐ 6 Morgan • Suite 162 • Irvine, CA 92618 | (949) 529-3479 • Fax (888) 279-2698 |
| ☐ 1630 San Pablo Avenue • Suite 200 • Oakland, CA 94612 | (510) 451-1255 • Fax (888) 279-2698 |


## ENVIRONMENTAL SITE ASSESSMENT QUESTIONNAIRE FOR KEY SITE MANAGER

To evaluate the potential for possible environmentally related impacts and site contamination the following information is requested. This questionnaire is to be preferably completed by the current property owner, or owner representative, leasing agent, or other person having good knowledge of the uses and physical characteristics of the property (Key Site Manager).

**PART I**

1. Property Address/Location and Assessor's Parcel Number (APN):
   Balfour at Deer Valley Road.
   APN's 019-120-002, -007-008 + 057-060-008
   east of Deer Valley Road.
2. Current property owner (name, address, voice/fax number):
   Ginochio Family contact Anna Ginochio
   3401 Walnut Ave, Concord Ca 94519
3. Date current property owner assumed title of property:
   1930's
4. Current property development/improvements:
   Vacant. One active gas well in NE section.
   3 galines traversing the site: 24" Chevron/Stan Pac,
   18" Kinder Morgan + a 26" abandoned PG+E line.
5. Past property use, development/improvements:
   dry-land farming + grazing
   previous oil production on site, mostly in east, abandoned.
6. Neighboring property uses:
   City of Antioch to West + North. Urban residential currently proposed to North. EBRPD Lands (Roddy Ranch) to West. City of Brentwood Shadow Lakes Residential homes to east. Vacant/ranchette homes & High School campus to South.

**PART II**

| | | Yes | No | N/A |
|---|---|---|---|---|
| 1. | Are you aware of any environmental cleanup liens against the *property* that are filed under federal, tribal, local or state law? | ☐ | ☑ | |
| 2. | Are you aware of any activity and land use limitations, such as engineering controls, land use restrictions, or institutional controls that are in place at the property and/or have been filed or recorded in a registry under federal, tribal, state or local law? | ☐ | ☑ | |
| 3. | Do you have any specialized knowledge or experience related to the *property* or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the *property* or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business? | ☑ | ☐ | |
| 4. | If a property transaction is occurring in conjunction with this environmental assessment, does the purchase price of this *property* reasonably reflect the fair market value of the *property*? | ☑ | ☐ | |
| 5. | If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the *property*? | ☐ | ☐ | ☑ |
| 6. | Are you aware of any commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example,<br>(a) do you know of specific chemicals that are present or once were present at the *property*?<br>(b) do you know of spills or other chemical releases that have taken place at the *property*?<br>(c) do you know of any environmental cleanups that have taken place at the *property*? | ☐ | ☑ | |
| 7. | Based on your knowledge and experience related to the *property* are there any obvious indicators that point to the presence or likely presence of contamination at the *property*? | ☐ | ☑ | |

**If a "Yes" response was provided to any of the above questions, please provide details below:**

4. Bob Nunn currently has active gas well onsite (NW location)

I certify that the information herein is true and correct to the best of my knowledge as of the date signed below.

Name (Printed/Typed): Lisa M. Borba

Signature: Lisa M Borba Date: 11.19.18



# APPENDIX H

## QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONAL

## SHAWN MUNGER, CHG
## Principal Geologist

### EDUCATION

BS, Geology, U.C. Davis, 1985

### EXPERIENCE

Years with ENGEO: 31
Years with Other Firms: 0

### REGISTRATIONS & CERTIFICATIONS

Certified Hydrogeologist, CA, 413

8 Hour HAZWOPER Training, CA, 160115576014

Professional Geologist, CA, 5810

Certified Environmental Manager, NV, 1332

40 Hour HAZWOPER Training, CA, 100830513934

### SPECIALIZATIONS

- Environmental Assessments and Remediation
- Environmental Restoration
- Water Quality Studies
- Water Wells/Hydrogeology

Since joining ENGEO in 1985, Shawn has been managing groundwater supply evaluations, hydrogeologic studies, chemical assessments, Phase I and II Site Assessment projects, UST site investigations, risk based corrective action (RBCA), VOC remediation, and agricultural impact evaluations. He serves as Principal-in-Charge or Project Manager for environmental and hazardous materials projects involving groundwater hydrology, contaminant fate and transport, and remediation. He is Principal-in-Charge of the environmental components of our on-call contracts with the City of Sacramento and the County of Sacramento.

### Select Project Experience

**14234 Saratoga Sunnyvale Road—Saratoga, CA**
*Project Geologist*. Shawn performed Principal review of ENGEO's environmental documents. This 2.2-acre townhome site is planned for a new multi-family development comprising up to 20 units in 8 buildings. The site immediately borders Saratoga Creek and contains numerous mature trees, many of which are to be saved. Site challenges include shallow groundwater, creek bank stability, and the potential for liquefaction and lateral spreading.

**Lenihan Dam Outlet Modification—Los Gatos, CA**
*Principal Geologist*. Shawn provided technical advice, coordination, consultation, and review of ENGEO's documents to provide quality mitigation measures. The findings were presented to SCVWD and it was concluded that the stockpile was sufficient for transportation. This analysis led to significant project budget savings by avoiding removal and disposal at a solid waste disposal facility. The project consisted of a stockpile approximately 6,000 cubic yards that required profiling as requested by Santa Clara Valley Water District before use of as site backfill.

**199 River Oaks Parkway—San Jose, CA**
*Principal in Charge*. Shawn provided principal oversight, data analysis, and consultation regarding site characterization, risk evaluation, and demolition observation plans. The project consists of a proposed six-story podium structure with one level to be constructed below grade. The property is a former semiconductor facility that has received conditional closure from the Regional Water Quality Control Board and is approved for construction.

**Riverside Avenue Property—Roseville, CA**
*Principal in Charge*. Shawn provided principal oversight of a Phase II Environmental Site Assessments and site

characterization. The project site consists of an active auto sales and service facility. The historic use of the facility for industrial purposes resulted in soil and groundwater impacts beneath the site. The City of Roseville revised its plans for acquiring and redeveloping the site due to the identified soil and groundwater impacts.

**1301 Standard Oil Ave—Pittsburg, CA**
*Principal in Charge*. Shawn provided principal oversight of a Phase II Environmental Site Characterization. The property is an abandoned wastewater treatment plant with processing buildings, clarifier tanks, and sludge beds.

**Pleasant Hill BART Station—Walnut Creek, CA**
*Principal in Charge*. Shawn provided oversight, data analysis and consultation during the preparation of a Phase II Environmental Site Assessment. The property is an existing BART station that encompasses 20 acres, including the platform/station area, electrical facilities, a parking garage and additional paved parking areas.

**County Crossings Property—Antioch, CA**
*Principal in Charge*. Shawn provided environmental consultation and data review with regard to soil and groundwater contamination. Constituents of concern include petroleum hydrocarbons, nitrates and manganese. The approximately 264-acre site includes several former industrial facilities and petroleum pipelines. Soil and groundwater at the site has been impacted with petroleum hydrocarbons, nitrates and manganese. Planned uses include commercial, residential, retail, and a BART-oriented transit village. The center, which is currently in the entitlement phase, is estimated to break ground in 2011.

**620 North Ninth Street—San Jose, CA**
*Principal in Charge*. Shawn provided oversight of soil, groundwater and soil gad characterizations, risk evaluations and Remedial Action Plan preparation. Shawn also closely interacted with RWQCB staff to achieve approval for residential development. The property is a former fruit packing plant and food preparation facility. The proposed development consists of a single-family residential subdivision.

**Westshore—Richmond, CA**
*Project Manager*. Shawn conducted Phase I and II Site Assessments, risk evaluations and prepared a soil management plan. The property was a former automotive manufacturing plant proposed for a multi-unit condominium development, including a 6-story podium structure to include five residential floors with 269 units and one parking floor.

**Mills Ranch—King City, CA**
*Principal in Charge*. Shawn provided principal oversight of Phase I/II Environmental Site Assessments and risk evaluations. The approximate 80-acre property is used for agricultural cultivation and commercial uses. The proposed mixed-use development includes over 400 single-family residential lots.

**Select Foods Site/Cross Creek—Hayward, CA**
*Principal in Charge*. Shawn provided principal oversight, consultation, and data analysis. The property was a former processed food facility, a drum recycling business, battery manufacturing operation and a bus assembly plant. Following completion of soil remediation under RWQCB oversight, the property was developed into a single-family residential subdivision.

**Arroyo Crossing—Livermore, CA**
*Principal in Charge*. Shawn provided oversight, data analysis and regulatory consultation while ENGEO provided geotechnical and environmental engineering services for this 34-acre site. This former corporation yard and quarry site was developed into a single-family residential subdivision.

**Renaissance Square—Concord, CA**
*Project Manager*. Shawn provided consultation, data analysis, and field observation. This former automotive dealership was redeveloped as a five-story multi-family residential structure supported on slab-on-grade foundations, with two levels of below-grade parking. Petroleum hydrocarbon-impacted soil was encountered during excavation of the parking structure, which required characterization and remediation. Soil impacts were attributed to former sumps, USTs and hydraulic lifts.

**Union Pacific Railroad Corridor—San Jose, CA**
*Project Manager*. Shawn prepared a Phase I and II Environmental Site Assessment. Work included a site reconnaissance, historical records research and recovery of soil samples with laboratory analysis. Lead impacted soil was identified which required risk evaluation. This former1800 lineal foot section of the former Union Pacific Railroad Corridor was proposed for mixed-use development.

**Former SFPP Alignment—Concord, CA**
*Project Manager*. Shawn prepared a Phase I and II Environmental Site Assessment. The site was a former ±6,500-foot corridor formerly occupied by the Southern Pacific Railroad. Kinder Morgan petroleum pipelines existed within an easement along the property. The southern portion of the site was crossed by East Bay Municipal Utilities District water distribution lines and a multi-lane highway overpass. The corridor was developed as a self-storage facility. Work included the recovery of soil and groundwater samples along the SP right of way.

**Hercules Property—Hercules, CA**
*Project Manager*. Shawn provided oversight of a Phase I Environmental Site Assessment, site asbestos survey, site characterization, and demolition observation/contaminant assessment. The project area consists of ±167 acres located near and along the southeastern shore of San Pablo Bay in Hercules. The property was once a portion of a 1300-acre manufacturing facility that was operated by DuPont from 1879 to 1913 and Hercules Incorporated from 1913 to 1979. The planned development includes single/multi-family residential development with some commercial components.

**Highlands Ranch—Antioch, CA**
*Principal in Charge*. Shawn provided oversight, data analysis, and collaboration with RWQCB personnel. The project site consists of a 140-acre portion of the former Chevron Los Medanos Tank Farm located in Pittsburg, California. The site was historically occupied by 24 crude oil tanks and four wax ponds. Remediation of the crude oil tank and wax pond locations was conducted according to a remedial action plan (RAP) and oversight was provided by the CRWQCB. Remediation was performed over a period of four months and consisted of excavating approximately 110,000 cubic yards of impacted soil and placing the material in windrows for ex-situ bioremediation.



ENGEO

Expect Excellence

# Appendix F

# Noise Data

| Noise Measurement Field Data | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Project:** | Vineyards at Deer Creek | | | | **Job Number:** | | 197211001 | |
| **Site No.:** | 1 | | | | **Date:** | | 2/28/2019 | |
| **Analyst:** | Jared Stine | | | | **Time:** | | 12:30 PM | |
| **Location:** | Deer Valley Road (120ft s/o Tour Way) | | | | | | | |
| **Noise Sources:** | vehicle traffic along Deer Valley Road, birds | | | | | | | |
| **Comments:** | **run ended 12:40 PM** | | | | | | | |
| **Results (dBA):** | | | | | | | | |
| | **Leq:** | 71.7 | **Lmin:** | 34.0 | **Lmax:** | 84.1 | **Peak:** | 98.3 |

| Equipment | |
|---|---|
| **Sound Level Meter:** | SoundPro DL |
| **Calibrator:** | QC-10 |
| **Response Time:** | Fast |
| **Weighting:** | A |
| **Microphone Height:** | 5 feet |

| Weather | |
|---|---|
| **Temp. (degrees F):** | 61 |
| **Wind (mph):** | 7 |
| **Sky:** | Partly Cloudy |
| **Bar. Pressure:** | 30.11 |
| **Humidity:** | 88% |

**Photo:**



| Noise Measurement Field Data | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Project:** | Vineyards at Deer Creek | | | | **Job Number:** | | 197211001 | |
| **Site No.:** | 2 | | | | **Date:** | | 2/28/2019 | |
| **Analyst:** | Jared Stine | | | | **Time:** | | 1:06 PM | |
| **Location:** | Heritage High School North Gate Entrance | | | | | | | |
| **Noise Sources:** | | PE students, maintenance workers accessign storage, vehicles using gate | | | | | | |
| **Comments:** | | **run ended 1:16 PM** | | | | | | |
| **Results (dBA):** | | | | | | | | |
| | **Leq:** | 53.6 | **Lmin:** | 41.8 | **Lmax:** | 76.2 | **Peak:** | 94.0 |

| Equipment | |
|---|---|
| **Sound Level Meter:** | SoundPro DL |
| **Calibrator:** | QC-10 |
| **Response Time:** | Fast |
| **Weighting:** | A |
| **Microphone Height:** | 5 feet |

| Weather | |
|---|---|
| **Temp. (degrees F):** | 61 |
| **Wind (mph):** | 7 |
| **Sky:** | Partly Cloudy |
| **Bar. Pressure:** | 30.11 |
| **Humidity:** | 88% |

**Photo:**



## Noise Measurement Field Data

| | | | |
|---|---|---|---|
| **Project:** | Vineyards at Deer Creek | **Job Number:** | 197211001 |
| **Site No.:** | 3 | **Date:** | 2/28/2019 |
| **Analyst:** | Jared Stine | **Time:** | 1:26 PM |
| **Location:** | Northernmost Limits of Playground Walkway in Balfour-Guthrie Park (w/o Waterville Drive) | | |
| **Noise Sources:** | vehicle honking in distance, kids playing at playground, bird chatter, dogs barking | | |
| **Comments:** | **run ended 1:36 PM** | | |

**Results (dBA):**

| **Leq:** | 44.7 | **Lmin:** | 34.6 | **Lmax:** | 59.9 | **Peak:** | 80.9 |
|---|---|---|---|---|---|---|---|

| **Equipment** | |
|---|---|
| **Sound Level Meter:** | SoundPro DL |
| **Calibrator:** | QC-10 |
| **Response Time:** | Fast |
| **Weighting:** | A |
| **Microphone Height:** | 5 feet |

| **Weather** | |
|---|---|
| **Temp. (degrees F):** | 61 |
| **Wind (mph):** | 7 |
| **Sky:** | Partly Cloudy |
| **Bar. Pressure:** | 30.11 |
| **Humidity:** | 88% |

**Photo:**



## Noise Measurement Field Data

| | | | |
|---|---|---|---|
| **Project:** | Vineyards at Deer Creek | **Job Number:** | 197211001 |
| **Site No.:** | 4 | **Date:** | 2/28/2019 |
| **Analyst:** | Jared Stine | **Time:** | 1:45 PM |
| **Location:** | Northernmost Limits of Concrete Walkway in Rolling Hills Park (n/o Waterville Drive) | | |
| **Noise Sources:** | conversation, electrical hum from transmission cables, distant aircraft, chickens, scooter | | |
| **Comments:** | **run ended 1:55 PM** | | |

**Results (dBA):**

| **Leq:** | 41.4 | **Lmin:** | 31.5 | **Lmax:** | 63.3 | **Peak:** | 90.0 |
|---|---|---|---|---|---|---|---|

| **Equipment** | |
|---|---|
| **Sound Level Meter:** | SoundPro DL |
| **Calibrator:** | QC-10 |
| **Response Time:** | Fast |
| **Weighting:** | A |
| **Microphone Height:** | 5 feet |

| **Weather** | |
|---|---|
| **Temp. (degrees F):** | 61 |
| **Wind (mph):** | 7 |
| **Sky:** | Partly Cloudy |
| **Bar. Pressure:** | 30.11 |
| **Humidity:** | 88% |

**Photo:**



| Noise Measurement Field Data | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Project:** | Vineyards at Deer Creek | | | | **Job Number:** | | 197211001 | |
| **Site No.:** | 5 | | | | **Date:** | | 2/28/2019 | |
| **Analyst:** | Jared Stine | | | | **Time:** | | 2:21 PM | |
| **Location:** | 2735 Saint Regis Avenue | | | | | | | |
| **Noise Sources:** | distant aircraft, cars in distance, bird chatter, chickens, dogs barking | | | | | | | |
| **Comments:** | **run ended 2:31 PM** | | | | | | | |
| **Results (dBA):** | | | | | | | | |
| | **Leq:** | 41.6 | **Lmin:** | 32.8 | **Lmax:** | 66.3 | **Peak:** | 77.9 |

| Equipment | |
|---|---|
| **Sound Level Meter:** | SoundPro DL |
| **Calibrator:** | QC-10 |
| **Response Time:** | Fast |
| **Weighting:** | A |
| **Microphone Height:** | 5 feet |

| Weather | |
|---|---|
| **Temp. (degrees F):** | 61 |
| **Wind (mph):** | 7 |
| **Sky:** | Partly Cloudy |
| **Bar. Pressure:** | 30.11 |
| **Humidity:** | 88% |

**Photo:**



**FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels**

**Project Name:** Vineyards at Deer Creek
**Project Number:** 197211001
**Scenario:** Existing
**Ldn/CNEL:** Ldn

| Assumed 24-Hour Traffic Distribution: | Day | Evening | Night |
|---|---|---|---|
| Total ADT Volumes | 77.70% | 12.70% | 9.60% |
| Medium-Duty Trucks | 87.43% | 5.05% | 7.52% |
| Heavy-Duty Trucks | 89.10% | 2.84% | 8.06% |

| | | | | | | | | Vehicle Mix | | Distance from Centerline of Roadway | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Median | ADT | Speed | Alpha | Medium | Heavy | Ldn at | Distance to Contour | | |
| # | Roadway | Segment | Lanes | Width | Volume | (mph) | Factor | Trucks | Trucks | 100 Feet | 70 Ldn | 65 Ldn | 60 Ldn | 55 Ldn |
| 1 | Balfour Road | Deer Valley Road to Project Retail Drive | 2 | 0 | 8,478 | 50 | 0 | 2.0% | 1.0% | 62.9 | - | 61 | 193 | 610 |
| 2 | Balfour Road | Project Driveway to American Avenue Ex | 2 | 0 | 9,243 | 50 | 0 | 2.0% | 1.0% | 63.2 | - | 66 | 210 | 665 |
| 3 | Balfour Road | American Avenue Extension to Project R | 2 | 0 | 9,305 | 50 | 0 | 2.0% | 1.0% | 63.3 | - | 67 | 212 | 669 |
| 4 | Balfour Road | Project Roadway to W. Country Club Dri | 2 | 0 | 9,305 | 50 | 0 | 2.0% | 1.0% | 63.3 | - | 67 | 212 | 669 |
| 5 | Balfour Road | W. Country Club Drive to Foothill Drive | 4 | 24 | 20,823 | 45 | 0 | 2.0% | 1.0% | 65.9 | - | 123 | 389 | 1,229 |
| 6 | Balfour Road | Foothill Drive to John Muir Parkway | 4 | 24 | 19,765 | 45 | 0 | 2.0% | 1.0% | 65.7 | - | 117 | 369 | 1,166 |
| 7 | Balfour Road | John Muir Parkway to SR-4 EB Ramps | 4 | 35 | 23,438 | 45 | 0 | 2.0% | 1.0% | 66.5 | - | 141 | 446 | 1,411 |
| 8 | Balfour Road | SR-4 EB Ramps to SR-4 WB Ramps | 4 | 24 | 27,005 | 45 | 0 | 2.0% | 1.0% | 67.0 | - | 159 | 504 | 1,594 |
| 9 | Balfour Road | SR-4 WB Ramps to Summerset Drive | 4 | 24 | 23,770 | 45 | 0 | 2.0% | 1.0% | 66.5 | - | 140 | 444 | 1,403 |
| 10 | Balfour Road | Summerset Drive to Fairview Avenue | 4 | 24 | 23,663 | 45 | 0 | 2.0% | 1.0% | 66.4 | - | 140 | 442 | 1,396 |
| 11 | Sand Creek Road | West of Hillcrest Avenue | 4 | 24 | 0 | 45 | 0 | 2.0% | 1.0% | | | | | |
| 12 | Sand Creek Road | Hillcrest Avenue to Heridon Ranch Road | 4 | 24 | 0 | 45 | 0 | 2.0% | 1.0% | | | | | |
| 13 | Sand Creek Road | Heridon Ranch Road to SR-4 EB Ramps | 4 | 24 | 10 | 45 | 0 | 2.0% | 1.0% | 32.7 | - | - | - | - |
| 14 | Deer Valley Road | North of Balfour Road | 2 | 0 | 7,540 | 45 | 0 | 2.0% | 1.0% | 61.3 | - | 43 | 134 | 425 |
| 15 | Deer Valley Road | South of Balfour Road | 2 | 0 | 1,495 | 45 | 0 | 2.0% | 1.0% | 54.2 | - | - | - | 84 |
| 16 | American Avenue | South of Balfour Road | 4 | 24 | 9,893 | 25 | 0 | 2.0% | 1.0% | 58.0 | - | - | 64 | 204 |
| 17 | Hillcrest Avenue | Balfour Road to Sand Creek Road | 4 | 24 | 0 | 45 | 0 | 2.0% | 1.0% | | | | | |
| 18 | Hillcrest Avenue | North of Sand Creek Road | 4 | 24 | 0 | 45 | 0 | 2.0% | 1.0% | | | | | |

[1] Distance is from the centerline of the roadway segment to the receptor location.
"-" = contour is located within the roadway right-of-way.

**FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels**

**Project Name:** Vineyards at Deer Creek
**Project Number:** 197211001
**Scenario:** Existing Plus Project
**Ldn/CNEL:** Ldn

| Assumed 24-Hour Traffic Distribution: | Day | Evening | Night |
|---|---|---|---|
| Total ADT Volumes | 77.70% | 12.70% | 9.60% |
| Medium-Duty Trucks | 87.43% | 5.05% | 7.52% |
| Heavy-Duty Trucks | 89.10% | 2.84% | 8.06% |

| | | | | | | | | | Vehicle Mix | | Distance from Centerline of Roadway | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Median | ADT | Speed | Alpha | Medium | Heavy | Ldn at | Distance to Contour | | | |
| # | Roadway | Segment | Lanes | Width | Volume | (mph) | Factor | Trucks | Trucks | 100 Feet | 70 Ldn | 65 Ldn | 60 Ldn | 55 Ldn |
| 1 | Balfour Road | Deer Valley Road to Project Retail Drive | 2 | 0 | 10,198 | 50 | 0 | 2.0% | 1.0% | 63.7 | - | 73 | 232 | 734 |
| 2 | Balfour Road | Project Driveway to American Avenue Ex | 2 | 0 | 12,143 | 50 | 0 | 2.0% | 1.0% | 64.4 | - | 87 | 276 | 874 |
| 3 | Balfour Road | American Avenue Extension to Project R | 2 | 0 | 14,033 | 50 | 0 | 2.0% | 1.0% | 65.0 | - | 101 | 319 | 1,010 |
| 4 | Balfour Road | Project Roadway to W. Country Club Dri | 2 | 0 | 19,893 | 50 | 0 | 2.0% | 1.0% | 66.6 | 45 | 143 | 453 | 1,431 |
| 5 | Balfour Road | W. Country Club Drive to Foothill Drive | 4 | 24 | 29,375 | 45 | 0 | 2.0% | 1.0% | 67.4 | - | 173 | 548 | 1,733 |
| 6 | Balfour Road | Foothill Drive to John Muir Parkway | 4 | 24 | 28,228 | 45 | 0 | 2.0% | 1.0% | 67.2 | - | 167 | 527 | 1,666 |
| 7 | Balfour Road | John Muir Parkway to SR-4 EB Ramps | 4 | 35 | 31,493 | 45 | 0 | 2.0% | 1.0% | 67.8 | - | 190 | 600 | 1,896 |
| 8 | Balfour Road | SR-4 EB Ramps to SR-4 WB Ramps | 4 | 24 | 32,665 | 45 | 0 | 2.0% | 1.0% | 67.9 | 61 | 193 | 610 | 1,928 |
| 9 | Balfour Road | SR-4 WB Ramps to Summerset Drive | 4 | 24 | 26,700 | 45 | 0 | 2.0% | 1.0% | 67.0 | - | 158 | 498 | 1,576 |
| 10 | Balfour Road | Summerset Drive to Fairview Avenue | 4 | 24 | 26,593 | 45 | 0 | 2.0% | 1.0% | 67.0 | - | 157 | 496 | 1,569 |
| 11 | Sand Creek Road | West of Hillcrest Avenue | 4 | 24 | 0 | 45 | 0 | 2.0% | 1.0% | | | | | |
| 12 | Sand Creek Road | Hillcrest Avenue to Heridon Ranch Road | 4 | 24 | 0 | 45 | 0 | 2.0% | 1.0% | | | | | |
| 13 | Sand Creek Road | Heridon Ranch Road to SR-4 EB Ramps | 4 | 24 | 10 | 45 | 0 | 2.0% | 1.0% | 32.7 | - | - | - | - |
| 14 | Deer Valley Road | North of Balfour Road | 2 | 0 | 9,150 | 45 | 0 | 2.0% | 1.0% | 62.1 | - | 52 | 163 | 516 |
| 15 | Deer Valley Road | South of Balfour Road | 2 | 0 | 1,605 | 45 | 0 | 2.0% | 1.0% | 54.5 | - | - | - | 91 |
| 16 | American Avenue | South of Balfour Road | 4 | 24 | 9,843 | 25 | 0 | 2.0% | 1.0% | 58.0 | - | - | 64 | 203 |
| 17 | Hillcrest Avenue | Balfour Road to Sand Creek Road | 4 | 24 | 8,335 | 45 | 0 | 2.0% | 1.0% | 61.8 | - | - | 155 | 490 |
| 18 | Hillcrest Avenue | North of Sand Creek Road | 4 | 24 | 0 | 45 | 0 | 2.0% | 1.0% | | | | | |

[1] Distance is from the centerline of the roadway segment to the receptor location.
"-" = contour is located within the roadway right-of-way.

**FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels**

**Project Name:** Vineyards at Deer Creek
**Project Number:** 197211001
**Scenario:** Opening Year
**Ldn/CNEL:** Ldn

| Assumed 24-Hour Traffic Distribution: | Day | Evening | Night |
|---|---|---|---|
| Total ADT Volumes | 77.70% | 12.70% | 9.60% |
| Medium-Duty Trucks | 87.43% | 5.05% | 7.52% |
| Heavy-Duty Trucks | 89.10% | 2.84% | 8.06% |

| | | | | | | | | Vehicle Mix | | Distance from Centerline of Roadway | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Median | ADT | Speed | Alpha | Medium | Heavy | Ldn at | Distance to Contour | | | |
| # | Roadway | Segment | Lanes | Width | Volume | (mph) | Factor | Trucks | Trucks | 100 Feet | 70 Ldn | 65 Ldn | 60 Ldn | 55 Ldn |
| 1 | Balfour Road | Deer Valley Road to Project Retail Drive | 2 | 0 | 9,310 | 50 | 0 | 2.0% | 1.0% | 63.3 | - | 67 | 212 | 670 |
| 2 | Balfour Road | Project Driveway to American Avenue Ex | 2 | 0 | 10,115 | 50 | 0 | 2.0% | 1.0% | 63.6 | - | 73 | 230 | 728 |
| 3 | Balfour Road | American Avenue Extension to Project R | 2 | 0 | 10,180 | 50 | 0 | 2.0% | 1.0% | 63.6 | - | 73 | 232 | 732 |
| 4 | Balfour Road | Project Roadway to W. Country Club Dri | 2 | 0 | 10,178 | 50 | 0 | 2.0% | 1.0% | 63.6 | - | 73 | 232 | 732 |
| 5 | Balfour Road | W. Country Club Drive to Foothill Drive | 4 | 24 | 22,270 | 45 | 0 | 2.0% | 1.0% | 66.2 | - | 131 | 416 | 1,314 |
| 6 | Balfour Road | Foothill Drive to John Muir Parkway | 4 | 24 | 21,183 | 45 | 0 | 2.0% | 1.0% | 66.0 | - | 125 | 395 | 1,250 |
| 7 | Balfour Road | John Muir Parkway to SR-4 EB Ramps | 4 | 35 | 25,810 | 45 | 0 | 2.0% | 1.0% | 66.9 | - | 155 | 491 | 1,554 |
| 8 | Balfour Road | SR-4 EB Ramps to SR-4 WB Ramps | 4 | 24 | 30,230 | 45 | 0 | 2.0% | 1.0% | 67.5 | 56 | 178 | 564 | 1,784 |
| 9 | Balfour Road | SR-4 WB Ramps to Summerset Drive | 4 | 24 | 26,975 | 45 | 0 | 2.0% | 1.0% | 67.0 | - | 159 | 503 | 1,592 |
| 10 | Balfour Road | Summerset Drive to Fairview Avenue | 4 | 24 | 26,903 | 45 | 0 | 2.0% | 1.0% | 67.0 | - | 159 | 502 | 1,587 |
| 11 | Sand Creek Road | West of Hillcrest Avenue | 4 | 24 | 3,450 | 45 | 0 | 2.0% | 1.0% | 58.1 | - | - | 64 | 204 |
| 12 | Sand Creek Road | Hillcrest Avenue to Heridon Ranch Road | 4 | 24 | 5,730 | 45 | 0 | 2.0% | 1.0% | 60.3 | - | - | 107 | 338 |
| 13 | Sand Creek Road | Heridon Ranch Road to SR-4 EB Ramps | 4 | 24 | 7,708 | 45 | 0 | 2.0% | 1.0% | 61.6 | - | - | 144 | 455 |
| 14 | Deer Valley Road | North of Balfour Road | 2 | 0 | 8,125 | 45 | 0 | 2.0% | 1.0% | 61.6 | - | 46 | 145 | 458 |
| 15 | Deer Valley Road | South of Balfour Road | 2 | 0 | 2,185 | 45 | 0 | 2.0% | 1.0% | 55.9 | - | - | 39 | 123 |
| 16 | American Avenue | South of Balfour Road | 4 | 24 | 10,388 | 25 | 0 | 2.0% | 1.0% | 58.2 | - | - | 68 | 214 |
| 17 | Hillcrest Avenue | Balfour Road to Sand Creek Road | 4 | 24 | 0 | 45 | 0 | 2.0% | 1.0% | | | | | |
| 18 | Hillcrest Avenue | North of Sand Creek Road | 4 | 24 | 5,530 | 45 | 0 | 2.0% | 1.0% | 59.9 | - | - | 103 | 325 |

[1] Distance is from the centerline of the roadway segment to the receptor location.
"-" = contour is located within the roadway right-of-way.

**FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels**

**Project Name:** Vineyards at Deer Creek
**Project Number:** 197211001
**Scenario:** Opening Year
**Ldn/CNEL:** Ldn

| Assumed 24-Hour Traffic Distribution: | Day | Evening | Night |
|---|---|---|---|
| Total ADT Volumes | 77.70% | 12.70% | 9.60% |
| Medium-Duty Trucks | 87.43% | 5.05% | 7.52% |
| Heavy-Duty Trucks | 89.10% | 2.84% | 8.06% |

| | | | | | | | | Vehicle Mix | | Distance from Centerline of Roadway | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Median | ADT | Speed | Alpha | Medium | Heavy | Ldn at | Distance to Contour | | | |
| # | Roadway | Segment | Lanes | Width | Volume | (mph) | Factor | Trucks | Trucks | 100 Feet | 70 Ldn | 65 Ldn | 60 Ldn | 55 Ldn |
| 1 | Balfour Road | Deer Valley Road to Project Retail Drive | 2 | 0 | 11,030 | 50 | 0 | 2.0% | 1.0% | 64.0 | - | 79 | 251 | 794 |
| 2 | Balfour Road | Project Driveway to American Avenue Ex | 2 | 0 | 13,065 | 50 | 0 | 2.0% | 1.0% | 64.7 | - | 94 | 297 | 940 |
| 3 | Balfour Road | American Avenue Extension to Project R | 2 | 0 | 14,055 | 50 | 0 | 2.0% | 1.0% | 65.0 | - | 101 | 320 | 1,011 |
| 4 | Balfour Road | Project Roadway to W. Country Club Dri | 2 | 0 | 19,913 | 50 | 0 | 2.0% | 1.0% | 66.6 | 45 | 143 | 453 | 1,433 |
| 5 | Balfour Road | W. Country Club Drive to Foothill Drive | 4 | 24 | 30,823 | 45 | 0 | 2.0% | 1.0% | 67.6 | 58 | 182 | 575 | 1,819 |
| 6 | Balfour Road | Foothill Drive to John Muir Parkway | 4 | 24 | 29,645 | 45 | 0 | 2.0% | 1.0% | 67.4 | - | 175 | 553 | 1,749 |
| 7 | Balfour Road | John Muir Parkway to SR-4 EB Ramps | 4 | 35 | 33,865 | 45 | 0 | 2.0% | 1.0% | 68.1 | 64 | 204 | 645 | 2,039 |
| 8 | Balfour Road | SR-4 EB Ramps to SR-4 WB Ramps | 4 | 24 | 35,888 | 45 | 0 | 2.0% | 1.0% | 68.3 | 67 | 212 | 670 | 2,118 |
| 9 | Balfour Road | SR-4 WB Ramps to Summerset Drive | 4 | 24 | 29,903 | 45 | 0 | 2.0% | 1.0% | 67.5 | - | 176 | 558 | 1,765 |
| 10 | Balfour Road | Summerset Drive to Fairview Avenue | 4 | 24 | 29,833 | 45 | 0 | 2.0% | 1.0% | 67.5 | - | 176 | 557 | 1,760 |
| 11 | Sand Creek Road | West of Hillcrest Avenue | 4 | 24 | 3,450 | 45 | 0 | 2.0% | 1.0% | 58.1 | - | - | 64 | 204 |
| 12 | Sand Creek Road | Hillcrest Avenue to Heridon Ranch Road | 4 | 24 | 5,730 | 45 | 0 | 2.0% | 1.0% | 60.3 | - | - | 107 | 338 |
| 13 | Sand Creek Road | Heridon Ranch Road to SR-4 EB Ramps | 4 | 24 | 7,778 | 45 | 0 | 2.0% | 1.0% | 61.6 | - | - | 145 | 459 |
| 14 | Deer Valley Road | North of Balfour Road | 2 | 0 | 9,735 | 45 | 0 | 2.0% | 1.0% | 62.4 | - | 55 | 174 | 549 |
| 15 | Deer Valley Road | South of Balfour Road | 2 | 0 | 2,295 | 45 | 0 | 2.0% | 1.0% | 56.1 | - | - | 41 | 129 |
| 16 | American Avenue | South of Balfour Road | 4 | 24 | 10,388 | 25 | 0 | 2.0% | 1.0% | 58.2 | - | - | 68 | 214 |
| 17 | Hillcrest Avenue | Balfour Road to Sand Creek Road | 4 | 24 | 5,815 | 45 | 0 | 2.0% | 1.0% | 60.2 | - | - | 108 | 342 |
| 18 | Hillcrest Avenue | North of Sand Creek Road | 4 | 24 | 5,530 | 45 | 0 | 2.0% | 1.0% | 59.9 | - | - | 103 | 325 |

[1] Distance is from the centerline of the roadway segment to the receptor location.
"-" = contour is located within the roadway right-of-way.

**FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels**

**Project Name:** Vineyards at Deer Creek
**Project Number:** 197211001
**Scenario:** Horizon Year
**Ldn/CNEL:** Ldn

| Assumed 24-Hour Traffic Distribution: | Day | Evening | Night |
|---|---|---|---|
| Total ADT Volumes | 77.70% | 12.70% | 9.60% |
| Medium-Duty Trucks | 87.43% | 5.05% | 7.52% |
| Heavy-Duty Trucks | 89.10% | 2.84% | 8.06% |

| | | | | | | | | Vehicle Mix | | | Distance from Centerline of Roadway | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Median | ADT | Speed | Alpha | Medium | Heavy | Ldn at | Distance to Contour | | | |
| # | Roadway | Segment | Lanes | Width | Volume | (mph) | Factor | Trucks | Trucks | 100 Feet | 70 Ldn | 65 Ldn | 60 Ldn | 55 Ldn |
| 1 | Balfour Road | Deer Valley Road to Project Retail Drive | 2 | 0 | 12,250 | 50 | 0 | 2.0% | 1.0% | 64.5 | - | 88 | 279 | 881 |
| 2 | Balfour Road | Project Driveway to American Avenue E | 2 | 0 | 12,250 | 50 | 0 | 2.0% | 1.0% | 64.5 | - | 88 | 279 | 881 |
| 3 | Balfour Road | American Avenue Extension to Project R | 2 | 0 | 12,675 | 50 | 0 | 2.0% | 1.0% | 64.6 | - | 91 | 288 | 912 |
| 4 | Balfour Road | Project Roadway to W. Country Club Dri | 2 | 0 | 12,625 | 50 | 0 | 2.0% | 1.0% | 64.6 | - | 91 | 287 | 908 |
| 5 | Balfour Road | W. Country Club Drive to Foothill Drive | 4 | 24 | 25,850 | 45 | 0 | 2.0% | 1.0% | 66.8 | - | 153 | 482 | 1,525 |
| 6 | Balfour Road | Foothill Drive to John Muir Parkway | 4 | 24 | 24,625 | 45 | 0 | 2.0% | 1.0% | 66.6 | - | 145 | 460 | 1,453 |
| 7 | Balfour Road | John Muir Parkway to SR-4 EB Ramps | 4 | 35 | 28,825 | 45 | 0 | 2.0% | 1.0% | 67.4 | - | 174 | 549 | 1,736 |
| 8 | Balfour Road | SR-4 EB Ramps to SR-4 WB Ramps | 4 | 24 | 33,700 | 45 | 0 | 2.0% | 1.0% | 68.0 | 63 | 199 | 629 | 1,989 |
| 9 | Balfour Road | SR-4 WB Ramps to Summerset Drive | 4 | 24 | 29,350 | 45 | 0 | 2.0% | 1.0% | 67.4 | - | 173 | 548 | 1,732 |
| 10 | Balfour Road | Summerset Drive to Fairview Avenue | 4 | 24 | 29,350 | 45 | 0 | 2.0% | 1.0% | 67.4 | - | 173 | 548 | 1,732 |
| 11 | Sand Creek Road | West of Hillcrest Avenue | 4 | 24 | 18,350 | 45 | 0 | 2.0% | 1.0% | 65.3 | - | 108 | 342 | 1,083 |
| 12 | Sand Creek Road | Hillcrest Avenue to Heridon Ranch Road | 4 | 24 | 18,650 | 45 | 0 | 2.0% | 1.0% | 65.4 | - | 110 | 348 | 1,101 |
| 13 | Sand Creek Road | Heridon Ranch Road to SR-4 EB Ramps | 4 | 24 | 31,150 | 45 | 0 | 2.0% | 1.0% | 67.6 | 58 | 184 | 581 | 1,838 |
| 14 | Deer Valley Road | North of Balfour Road | 2 | 0 | 11,700 | 45 | 0 | 2.0% | 1.0% | 63.2 | - | 66 | 209 | 660 |
| 15 | Deer Valley Road | South of Balfour Road | 2 | 0 | 3,150 | 45 | 0 | 2.0% | 1.0% | 57.5 | - | - | 56 | 178 |
| 16 | American Avenue | South of Balfour Road | 4 | 24 | 13,600 | 25 | 0 | 2.0% | 1.0% | 59.4 | - | - | 89 | 280 |
| 17 | Hillcrest Avenue | Balfour Road to Sand Creek Road | 4 | 24 | 2,350 | 45 | 0 | 2.0% | 1.0% | 56.3 | - | - | - | 138 |
| 18 | Hillcrest Avenue | North of Sand Creek Road | 4 | 24 | 6,900 | 45 | 0 | 2.0% | 1.0% | 60.9 | - | - | 128 | 406 |

[1] Distance is from the centerline of the roadway segment to the receptor location.
"-" = contour is located within the roadway right-of-way.

**FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels**

**Project Name:** Vineyards at Deer Creek
**Project Number:** 197211001
**Scenario:** Horizon Year Plus Project
**Ldn/CNEL:** Ldn

| Assumed 24-Hour Traffic Distribution: | Day | Evening | Night |
|---|---|---|---|
| Total ADT Volumes | 77.70% | 12.70% | 9.60% |
| Medium-Duty Trucks | 87.43% | 5.05% | 7.52% |
| Heavy-Duty Trucks | 89.10% | 2.84% | 8.06% |

| | | | | | | | | Vehicle Mix | | Distance from Centerline of Roadway | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Roadway | Segment | Lanes | Median Width | ADT Volume | Speed (mph) | Alpha Factor | Medium Trucks | Heavy Trucks | Ldn at 100 Feet | Distance to Contour 70 Ldn | 65 Ldn | 60 Ldn | 55 Ldn |
| 1 | Balfour Road | Deer Valley Road to Project Retail Drive | 2 | 0 | 13,610 | 50 | 0 | 2.0% | 1.0% | 64.9 | - | 98 | 310 | 979 |
| 2 | Balfour Road | Project Driveway to American Avenue E | 2 | 0 | 14,390 | 50 | 0 | 2.0% | 1.0% | 65.2 | 33 | 104 | 327 | 1,035 |
| 3 | Balfour Road | American Avenue Extension to Project R | 2 | 0 | 15,620 | 50 | 0 | 2.0% | 1.0% | 65.5 | 36 | 112 | 355 | 1,124 |
| 4 | Balfour Road | Project Roadway to W. Country Club Dri | 2 | 0 | 19,295 | 50 | 0 | 2.0% | 1.0% | 66.4 | 44 | 139 | 439 | 1,388 |
| 5 | Balfour Road | W. Country Club Drive to Foothill Drive | 4 | 24 | 31,455 | 45 | 0 | 2.0% | 1.0% | 67.7 | 59 | 186 | 587 | 1,856 |
| 6 | Balfour Road | Foothill Drive to John Muir Parkway | 4 | 24 | 30,208 | 45 | 0 | 2.0% | 1.0% | 67.5 | 56 | 178 | 564 | 1,783 |
| 7 | Balfour Road | John Muir Parkway to SR-4 EB Ramps | 4 | 35 | 34,003 | 45 | 0 | 2.0% | 1.0% | 68.1 | 65 | 205 | 647 | 2,047 |
| 8 | Balfour Road | SR-4 EB Ramps to SR-4 WB Ramps | 4 | 24 | 38,040 | 45 | 0 | 2.0% | 1.0% | 68.5 | 71 | 224 | 710 | 2,245 |
| 9 | Balfour Road | SR-4 WB Ramps to Summerset Drive | 4 | 24 | 32,820 | 45 | 0 | 2.0% | 1.0% | 67.9 | 61 | 194 | 612 | 1,937 |
| 10 | Balfour Road | Summerset Drive to Fairview Avenue | 4 | 24 | 32,820 | 45 | 0 | 2.0% | 1.0% | 67.9 | 61 | 194 | 612 | 1,937 |
| 11 | Sand Creek Road | West of Hillcrest Avenue | 4 | 24 | 18,680 | 45 | 0 | 2.0% | 1.0% | 65.4 | - | 110 | 349 | 1,102 |
| 12 | Sand Creek Road | Hillcrest Avenue to Heridon Ranch Road | 4 | 24 | 20,460 | 45 | 0 | 2.0% | 1.0% | 65.8 | - | 121 | 382 | 1,207 |
| 13 | Sand Creek Road | Heridon Ranch Road to SR-4 EB Ramps | 4 | 24 | 32,300 | 45 | 0 | 2.0% | 1.0% | 67.8 | 60 | 191 | 603 | 1,906 |
| 14 | Deer Valley Road | North of Balfour Road | 2 | 0 | 12,950 | 45 | 0 | 2.0% | 1.0% | 63.6 | - | 73 | 231 | 730 |
| 15 | Deer Valley Road | South of Balfour Road | 2 | 0 | 3,260 | 45 | 0 | 2.0% | 1.0% | 57.6 | - | - | 58 | 184 |
| 16 | American Avenue | South of Balfour Road | 4 | 24 | 13,600 | 25 | 0 | 2.0% | 1.0% | 59.4 | - | - | 89 | 280 |
| 17 | Hillcrest Avenue | Balfour Road to Sand Creek Road | 4 | 24 | 6,375 | 45 | 0 | 2.0% | 1.0% | 60.6 | - | - | 119 | 375 |
| 18 | Hillcrest Avenue | North of Sand Creek Road | 4 | 24 | 8,130 | 45 | 0 | 2.0% | 1.0% | 61.6 | - | - | 151 | 478 |

[1] Distance is from the centerline of the roadway segment to the receptor location.
"-" = contour is located within the roadway right-of-way.

# Appendix G



Prepared by
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*July 2019*

Transportation Impact Assessment

# Vineyards at Deer Creek

Prepared for:
GBN Partners

# Vineyards at Deer Creek

# Transportation Impact Assessment

**Prepared for:**
**GBN Partners**

July 2019

WC16-3328

FEHR PEERS

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# 1. INTRODUCTION

This report presents the analysis and findings of the Transportation Impact Assessment (TIA) prepared for the Vineyards at Deer Creek development (project) located in Contra Costa County, adjacent to the City of Brentwood. This chapter discusses the TIA purpose, study locations and analysis scenarios, analysis methods, criteria used to identify significant impacts, and report organization.

## STUDY PURPOSE

The study's purpose is to evaluate the transportation impacts of the Vineyards at Deer Creek development located north of Balfour Road and east of Deer Valley Road in unincorporated Contra Costa County, as shown on **Figure 1.** Although the project site is located in unincorporated Contra Costa County, it is within the City of Brentwood Planning area and designated as a Special Planning Area. As part of the project, the site would be annexed into the City of Brentwood. The site is currently undeveloped and is proposed to be developed with up to 2,400 single-family homes, including 1,920 age restricted (55+) active adult single family homes, and up to 480 market rate homes. A 20-acre area on Balfour Road at Deer Valley Road could be developed with a mixture of community-serving uses, which could include local serving retail uses or a boutique hotel. The project would also include other community facilities, including parks, trails and a recreational facility. A conceptual project site plan is shown on **Figure 2.**

As currently proposed, primary access to the project site would be provided from a new roadway connection to Balfour Road. This entry road would provide access to two residential neighborhoods and the Community Recreation Center. Vehicular access to the remainder of the project site and emergency vehicle access would be from a restricted (gated) access that would be provided from the future northerly extension of Hillcrest Avenue in the City of Antioch. The road would connect to a series of collector and local streets providing access to individual residential neighborhoods. Within the site Hillcrest Avenue would be access restricted, such that there would not be a public vehicle connection between the future Sand Creek Road and Balfour Road via the Hillcrest Avenue alignment.

As part of the project, Balfour Road would be widened to four lanes from American Avenue to the future American Avenue Loop connection. A two-lane extension of American Avenue from its current terminus would also be constructed as part of the project, connecting to Balfour Road approximately 4,000 feet from the existing American Avenue intersection at Balfour Road, providing additional access to Heritage High School and Adams Middle School, as shown on **Figure 3**. From the loop connection, Balfour Road would taper to a two-lane cross section to Deer Valley Road, but would be improved to current City standards.

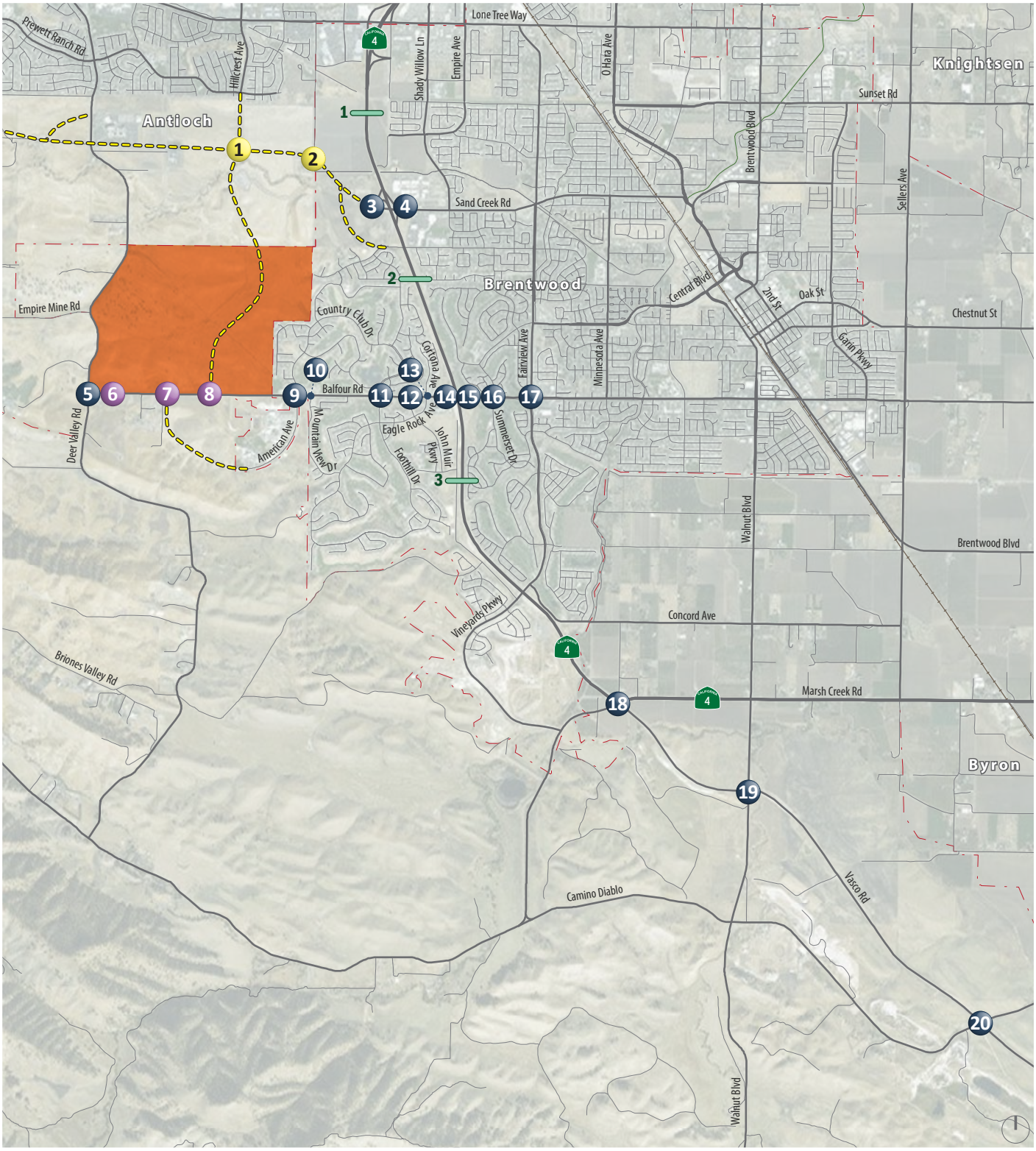



Figure 1

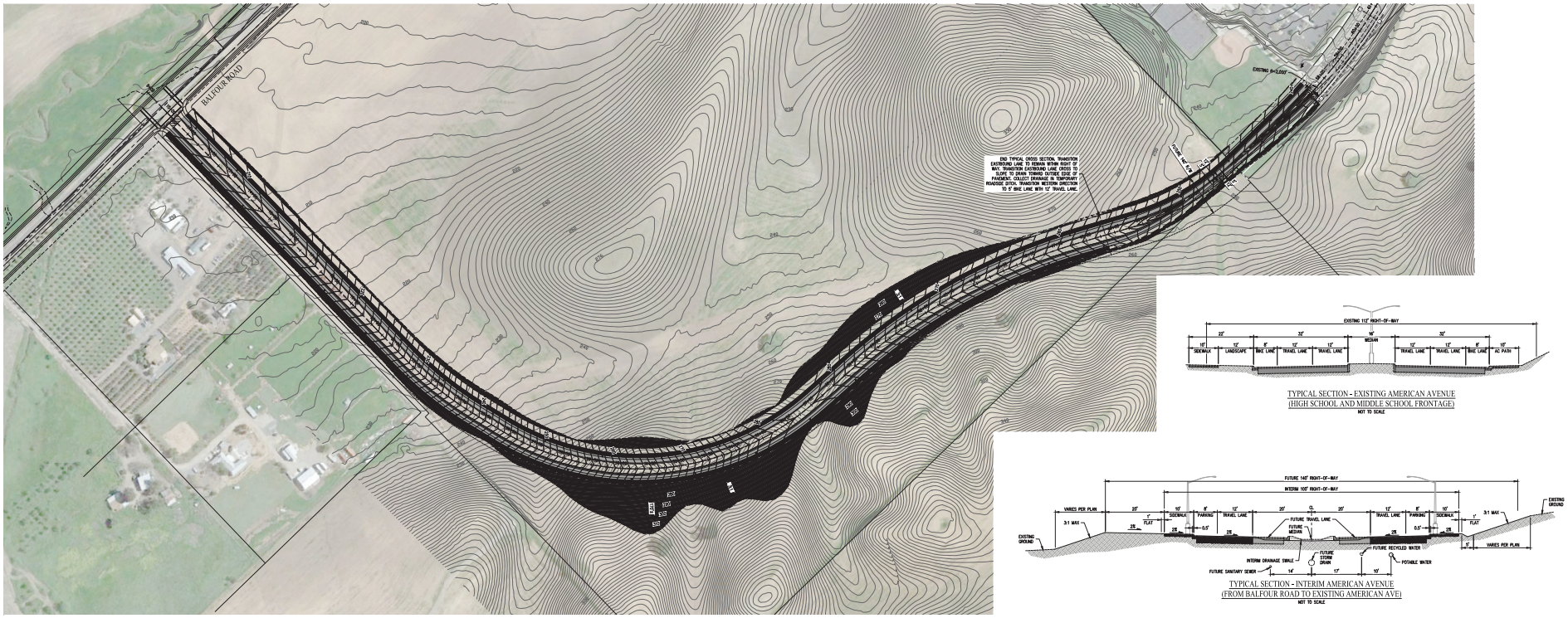
# Project Site Vicinity Map

WC16-3328_1_SiteVic




Figure 2

## Conceptual Project Site Plan




***Site Plan Source:*** Carlson, Barbee & Gibson, Inc., Jan. 9, 2019

Figure 3

# American Avenue Extension

The primary project access roadway would be located approximately equidistant between the two intersections of American Avenue with Balfour Road. A secondary driveway providing access to the commercial site would be provided east of Deer Valley Road.

## STUDY LOCATIONS AND ANALYSIS SCENARIOS

Project impacts on study area roadway facilities were determined by measuring the effect project traffic would have on intersections in the vicinity of the site during the morning (6:00 to 9:00 AM) and evening (3:00 to 6:00 PM) peak periods. As shown on Figure 1, the following intersections were selected based on a review of the project location, estimates of the added traffic from the project, and locations of planned roadways in the area:

1. Sand Creek Road at Hillcrest Avenue (Future Intersection)
2. Sand Creek Road at Heidorn Ranch Road (Future Intersection)
3. Sand Creek Road at State Route 4 Eastbound Ramps
4. Sand Creek Road at State Route 4 Westbound Ramps
5. Balfour Road at Deer Valley Road
6. Balfour Road at Commercial Entrance (With Project Intersection)
7. Balfour Road at American Avenue Extension (With Project Intersection)
8. Balfour Road at Hillcrest Avenue (With Project Intersection)
9. Balfour Road at American Avenue/W Country Club Drive
10. Balfour Road at Mountain View Drive
11. Balfour Road at Foothill Drive/E Country Club Drive
12. Balfour Road at John Muir Parkway
13. Balfour Road at Eagle Rock Way/Cortona Way
14. Balfour Road at State Route 4 Eastbound Ramps
15. Balfour Road at State Route 4 Westbound Ramps
16. Balfour Road at Summerset Drive
17. Balfour Road at Fairview Avenue
18. Marsh Creek Road/State Route 4 at Vasco Road
19. Walnut Boulevard at Vasco Road
20. Camino Diablo Road at Vasco Road

The following freeway segments were also evaluated as part of the analysis:

1. State Route 4 between Lone Tree Way and Sand Creek Road
2. State Route 4 between Sand Creek Road and Balfour Road

3. State Route 4 between Balfour Road and Marsh Creek Road

The following scenarios were evaluated:

- ***Existing*** – Existing (2019) conditions based on recent traffic counts.
- ***Existing with Project*** – Existing (2019) conditions with project-related traffic.
- ***Near-Term without Project*** – Existing (2019) conditions considering the development of approved projects within the study area that could be constructed over the next five to ten years.
- ***Near-Term with Project*** – Near-Term conditions with project-related traffic.
- ***Cumulative without Project*** – Forecasts for the cumulative scenario based on traffic growth trends as described in both the Antioch and Brentwood General Plan EIR, and supplemented by a check of traffic forecasts for the study area in the most recent Contra Costa Transportation Authority Countywide travel demand model, considering the recently adopted Priority Area One Specific Plan. The scenario reflects conditions over the next 20 to 25 years.
- ***Cumulative with Project*** – Future forecast conditions with project-related traffic.

# ANALYSIS METHODS

The operations of roadway facilities are described with the term "level of service" (LOS). LOS is a qualitative description of traffic flow from a vehicle driver's perspective based on factors such as speed, travel time, delay, and freedom to maneuver. Six levels of service are defined ranging from LOS A (free-flow conditions) to LOS F (over capacity conditions). LOS E corresponds to operations "at capacity." When volumes exceed capacity, stop-and-go conditions result and operations are designated LOS F.

## SIGNALIZED INTERSECTIONS

Traffic conditions at signalized intersections were evaluated using methods developed by the Transportation Research Board (TRB), as documented in the 2010 *Highway Capacity Manual* (2010 HCM) for vehicles. The HCM method calculates control delay at an intersection based on inputs such as traffic volumes, lane geometry, signal phasing and timing, pedestrian crossing times, and peak hour factors. Control delay is defined as the delay directly associated with the traffic control device (i.e., a stop sign or a traffic signal) and specifically includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The relationship between LOS and control delay at signalized intersections is summarized in **Table 1**.

**TABLE 1**
**SIGNALIZED INTERSECTION LOS CRITERIA**

| Level of Service | Description | Delay in Seconds |
|---|---|---|
| A | Progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay. | < 10.0 |
| B | Progression is good, cycle lengths are short, or both. More vehicles stop than with LOS A, causing higher levels of average delay. | > 10.0 to 20.0 |
| C | Higher congestion may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level, though many still pass through the intersection without stopping. | > 20.0 to 35.0 |
| D | The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable. | > 35.0 to 55.0 |
| E | This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. | > 55.0 to 80.0 |
| F | This level is considered unacceptable with oversaturation, which is when arrival flow rates exceed the capacity of the intersection. This level may also occur at high V/C ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to such delay levels. | > 80.0 |

Source: 2010 *Highway Capacity Manual*

## UNSIGNALIZED INTERSECTIONS

For unsignalized (all-way stop controlled and side-street stop controlled) intersections, the 2010 HCM method for unsignalized intersections was used. With this method, operations are defined by the average control delay per vehicle (measured in seconds). The control delay incorporates delay associated with deceleration, acceleration, stopping, and moving up in queue. **Table 2** summarizes the relationship between LOS and delay for unsignalized intersections. At side-street stop controlled intersections, the delay is calculated for each stop-controlled movement, the left turn movement from the major street, as well as the intersection average. The intersection average delay and highest movement/approach delay are reported for side-street stop controlled intersections.

**TABLE 2**
**UNSIGNALIZED INTERSECTION LOS CRITERIA**

| Level of Service | Description | Delay in Seconds |
|---|---|---|
| A | Little or no delays | ≤ 10.0 |
| B | Short traffic delays | > 10.0 to 15.0 |
| C | Average traffic delays | > 15.0 to 25.0 |
| D | Long traffic delays | > 25.0 to 35.0 |
| E | Very long traffic delays | > 35.0 to 50.0 |
| F | Extreme traffic, delays where intersection capacity exceeded | > 50.0 |

Source: 2010 *Highway Capacity Manual*

### FREEWAY SEGMENTS

For freeway segments, the *East County Action Plan for Routes of Regional Significance,* CCTA has established the delay index as the Multimodal Transportation Service Objective (MTSO) for State Route 4 (SR 4) through the study area. The delay index is the ratio of actual travel times on a facility divided by the travel times that occur during non-congested free-flow periods. Should the delay index exceed 2.5 during either the AM or PM peak period, freeway operations would be considered deficient. This would equate to peak hour travel taking more than 2.5 times longer than off-peak travel or an average travel speed below 26 miles per hour assuming a non-congested free-flow speed of 65 miles per hour.

## REGULATORY SETTING AND SIGNIFICANCE CRITERIA

The project could have a significant impact on the environment if it would cause an increase in traffic which is substantial in relation to the traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, or delay and congestion at intersections), or change the condition of an existing street (e.g., street closures, changing direction of travel) in a manner that would substantially impact access or traffic load and capacity of the street system. Significance criteria are used to determine whether a project impact is considered significant and therefore requires mitigation.

As part of the City of Brentwood 2014 Adopted General Plan, the following are the Routes of Regional Significance identified within the study area by the *East County Action Plan for Routes of Regional Significance*. These routes must maintain the Multimodal Transportation Service Objective (MTSO) set forth

by the *East County Action Plan,* produced by the TRANSPLAN Committee and Contra Costa Transportation Authority (CCTA).

1. State Route (SR) 4 (freeway)
2. Balfour Road (suburban arterial route)
3. Deer Valley Road (rural roads, unimproved portion)
4. Fairview Avenue (suburban arterial route)
5. Marsh Creek Road (rural road)
6. Walnut Boulevard (rural road)
7. Vasco Road (rural road)

The General Plan and East County Action Plan outlines that:

- For freeway Multi-modal Transportation Service Objectives (MTSO), the delay index should not exceed 2.5 during the peak hour. This applies to SR 4 freeway segments.
- For signalized **suburban arterial routes**, intersection levels of service should be maintained at LOS D or better.
- For non-signalized **rural roads**, roadway levels of service should be maintained at LOS D or better.

For the Caltrans freeway facilities, the operational standards and significance criteria are established by the Contra Costa Transportation Authority (CCTA) acting as the designated Congestion Management Agency (CMA) representing the jurisdictions of Contra Costa County. As the acting CMA, the CCTA establishes the traffic LOS standards for all state highway facilities in Contra Costa County, which supersede the general Caltrans operational standard for all state highways.[1]

Other policies from the 2014 Adopted General Plan include:

> ***Policy CIR I-5:*** Maintain LOS D or better operation at intersections within Brentwood that are not on designated Routes of Significance, and LOS E or better operation at intersections in the Downtown Specific Plan area. At unsignalized intersections, levels of service shall be determined for both controlled movements and for the overall intersection. Controlled movements operating at LOS E or LOS F are allowable if the intersection is projected to operate at LOS C or better overall, and/or if the "Peak Hour" signal warrant outlined in the CA Manual on Uniform Traffic Control Devices remains unmet.

[1] *2013 Contra Costa Congestion Management Plan*, Contra Costa Transportation Authority, Walnut Creek, CA, 94598, December 19, 2013.

***Policy CIR I-6:*** Intersections may be exempted from the LOS standards established in Policy CIR I-5 in cases where the City Council finds that the infrastructure improvements needed to maintain vehicle LOS (such as roadway or intersection widening) would be in conflict with goals of improving multimodal circulation, or would lead to other potentially adverse environmental impacts. For those locations where the City allows a reduced motor vehicle LOS or queuing standard, additional multimodal improvements may be required in order to reduce impacts to mobility.

***Policy CIR 1-7:*** Improve circulation in locations with high levels of congestion, but avoid major increases in street capacities unless necessary to remedy severe traffic congestion on major arterial corridors.

***Policy CIR 4-2:*** Require new development to contribute its proportional cost of circulation improvements necessary to address cumulative transportation impacts on roadways throughout the City, as well as the bicycle and pedestrian network.

***Policy CSF 4-2:*** Encourage, and work cooperatively with, the East Contra Costa Fire Protection District and providers of emergency medical services to maintain a three to five minute response time for all emergency response calls within Brentwood.

## VEHICLE MILES OF TRAVEL

In response to Senate Bill 743 (SB 743), the Office of Planning and Research (OPR) is updated the California Environmental Quality Act (CEQA) guidelines to include new transportation-related evaluation metrics. Draft guidelines were developed in August 2014, with final guidelines published in November 2017 incorporating public comments from the August 2014 and January 2016 guidelines. In December 2018 the California Natural Resources Agency certified and adopted the CEQA Guidelines update package along with an updated Technical Advisory related to Evaluating Transportation Impacts in CEQA (December 2018). Full compliance with the guidelines is expected by July 2020. In response to the final guidelines, a preliminary assessment of vehicle miles of travel (VMT) generated by the proposed project was prepared for informational purposes only as the City of Brentwood has not yet adopted significance thresholds related to VMT.

## SIGNIFICANCE CRITERIA

Based on guidance contained in the City of Brentwood General Plan and the updated CEQA guidelines, the following specific criteria was applied.

Would the project:

A. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit roadway, bicycle and pedestrian facilities?

***Signalized Intersections*** - Project-related operational impacts on the signalized study intersections in the City of Brentwood are considered significant if:

1. Project-related traffic causes the Level of Service (LOS) rating to deteriorate from LOS D (55-seconds) or better to LOS E or F, or from LOS E to LOS F;

2. For intersections already operating at an unacceptable LOS without the project it is considered a significant impact of the project increase the average intersection delay by more than 5 seconds.

***Unsignalized Intersections*** - Project-related operational impacts on unsignalized intersections are considered significant if:

1. Project generated traffic causes the worst-case movement to operate at LOS E or F, the average delay to be LOS D or worse, and/or results in the satisfaction of the peak hour signal warrants.

***Freeway System*** – The project would create a significant impact related to the freeway system if the following criteria is met:

1. Should the delay index exceed 2.5 during either the AM or PM peak period, freeway operations would be considered deficient. This would equate to peak hour travel taking 2.5 times as long as off-peak travel or an average travel speed below 26 miles per hour assuming a non-congested free-flow speed of 65 miles per hour.

2. For project impact assessment purposes, an impact is significant if the project adds traffic to a mixed flow segment projected to have a delay index over 2.5 without project traffic.

***Transit System*** - The project would create a significant impact related to transit service if the following criteria is met:

1. The project interferes with existing transit facilities or precludes the construction of planned transit facilities.

***Bicycle System*** - The project would create a significant impact related to the bicycle system if any of the following criteria are met:

1. Disrupt existing bicycle facilities; or

2. Interfere with planned bicycle facilities; or

3. Create inconsistencies with adopted bicycle system plans, guidelines, policies, or standards.

***Pedestrian System*** - The project would create a significant impact related to the pedestrian system if any of the following criteria are met:

1. Disrupt existing pedestrian facilities; or

2. Interfere with planned pedestrian facilities; or

3. Create inconsistencies with adopted pedestrian system plans, guidelines, policies, or standards.

B. Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

C. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

D. Result in inadequate emergency access?

## REPORT ORGANIZATION

This report is divided into nine chapters as described below:

- **Chapter 1 – Introduction** discusses the purpose and organization of the report.
- **Chapter 2 – Existing Conditions** describes the transportation system in the project vicinity, including the surrounding roadway network morning and evening peak period intersection turning movement volumes, existing bicycle, pedestrian, and transit facilities, and intersection operations.
- **Chapter 3 – Project Characteristics** presents relevant project information, such as the Project components and project trip generation, distribution, and assignment.
- **Chapter 4 – Existing with Project Traffic Conditions** addresses the existing conditions with the project, and discusses project vehicular impacts.
- **Chapter 5 – Near-Term Traffic Conditions** addresses the near-term future conditions, both without and with the project, and discusses project vehicular impacts.
- **Chapter 6 – Cumulative Traffic Conditions** addresses the long-term future conditions, both without and with the project, and discusses project vehicular impacts.

- **Chapter 7 – Freeway Analysis** presents the results of the freeway analysis under existing, near-term and cumulative conditions.
- **Chapter 8 – Site Plan Review** describes project access and circulation for all travel modes. A review of the CEQA checklist is also conducted.
- **Chapter 9 – Vehicle Miles of Travel** presents the results of the VMT assessment conducted for the site for informational purposes only.

# 2. EXISTING CONDITIONS

This chapter describes transportation facilities in the project study area, including the surrounding roadway network, transit, pedestrian, and bicycle facilities in the project site vicinity. Existing intersection operations are also described.

## ROADWAY SYSTEM

The project site is located north of Balfour Road, east of Deer Valley Road, and west of American Avenue in unincorporated Contra Costa County, adjacent to the City of Brentwood. Brentwood is located in eastern Contra Costa County, adjacent to the cities of Antioch and Oakley, located northeast and north, respectively. Land uses in the immediate site vicinity are primarily vacant or agricultural, with a single-family residential neighborhoods located to the east as well as a high school and middle school. Regional access to the site is provided by State Route 4. In the near-term, local access to the site would be provided from Balfour Road. In the long-term, an extension of Hillcrest Avenue would also provide site access. The Hillcrest Avenue extension would ultimately connect Balfour Road to Sand Creek Road, and north into Antioch as various roadway sections are constructed by others in conjunction with adjacent development. Within the site the roadway would be access restricted, such that there would not be a public vehicle connection between the future Sand Creek Road and Balfour Road via the Hillcrest Avenue alignment.

The following discusses the roadways that would provide access to the site and are most likely to experience direct traffic impacts, if any, from the proposed project.

***State Route 4 (SR 4)*** is an east-west freeway (although oriented north-south in the study area), connecting Eastern Contra Costa County with the San Francisco Bay Area and California's Central Valley. SR 4 currently provides four travel lanes in each direction from Pittsburg to State Route 160; three travel lanes are provided in each direction from State Route 160 to Laurel Road in Oakley. Two travel lanes in each direction are provided from Laurel Road to Balfour Road, and a single travel lane in each direction is provided south of Balfour Road. State Route 4 is a designated Route of Regional Significance.

***Balfour Road*** is an east-west oriented major arterial that provides two travel lanes in each direction to the east of American Avenue, and one travel lane in each direction west of American Avenue. To the west of American Avenue, the areas adjacent to the roadways are mostly undeveloped. Balfour Road connects Deer Valley Road in the west to Bixler Road in the east, where it terminates. Sidewalks and bicycle lanes are provided on Balfour Road adjacent to existing development. Balfour Road is a designated Route of Regional Significance.

***Deer Valley Road*** is a north-south rural roadway that provides one travel lane in each direction, connecting Brentwood to Antioch. Areas adjacent to this roadway are mostly undeveloped and agricultural. It has a posted speed limit of 45 miles per hour. No bicycle or pedestrian facilities are provided in the study area. Deer Valley Road is a designated Route of Regional Significance.

***American Avenue*** is a four-lane north-south collector roadway that connects Balfour Road to Heritage High School and Adams Middle School. It currently terminates at the City limits at Adams Middle School, but is planned to be extended in a loop, connecting to Balfour Road approximately ¾-mile west of its current connection to Balfour Road. Sidewalks and bicycle lanes are provided on American Avenue adjacent to existing development.

***West County Club Drive*** is a two-lane collector roadway that forms the north leg of the Balfour Road at American Avenue intersection, and loops through a residential neighborhood, connecting to Balfour Road at Foothill Drive/East County Club Drive. Sidewalks and bicycle lanes are provided on County Club.

***Foothill Drive*** is a two-lane north-south collector roadway that forms the southern leg of the East County Club Drive at Balfour Road intersection. Foothill Drive serves a residential neighborhood and is planned to extend to John Muir Parkway. Sidewalks are provided on Foothill Drive.

***John Muir Parkway*** is a north-south oriented minor arterial that generally provides one travel lane in each direction. It connects Balfour Road to Vineyards Parkway via Concord Avenue. Sidewalks and bicycle lanes are provided on portions of John Muir Parkway.

***Fairview Avenue*** is a two to four lane minor arterial south of Balfour Road; west of State Route 4, it transitions to Vineyards Parkway. Between Balfour Road and Sand Creek Road, it is a four lane major arterial. The posted speed limit is 35 to 45 MPH. Sidewalks and bicycle lanes are provided on Fairview Avenue. Fairview Avenue is a designated Route of Regional Significance.

***Vasco Road*** is a two to four lane rural highway connecting the East County area to Livermore. The posted speed limit on Vasco Road is 45 to 55 MPH. Sidewalks and bicycle facilities are not provided on Vasco Road. Vasco Road is a designated Route of Regional Significance.

***Marsh Creek Road*** is an east-west oriented rural roadway connecting far East Contra Costa County (i.e. Discovery Bay) with Central County (i.e. Clayton and Concord). It parallels Balfour Road for much of its length through Brentwood. The roadway provides one travel lane per direction. Sidewalks and bicycle facilities are not provided on Marsh Creek Road. Marsh Creek Road is a designated Route of Regional Significance.

***Sand Creek Road*** is a four-lane, east-west roadway that extends east from State Route 4 through Brentwood. The posted speed limit is 45 mph. No on-street parking is permitted on Sand Creek Road.



Class II bicycle lanes and sidewalks are provided along most of the roadway through Brentwood. Sand Creek Road from Brentwood Boulevard to its current terminus at State Route 4 is a Route of Regional significance. An extension of Sand Creek Road that would connect State Route 4 to Deer Valley Road is planned as part of development in the area. When constructed, the future extension of Sand Creek Road would also be a designated Route of Regional Significance.

***Hillcrest Avenue*** is a north-south oriented roadway that provides two travel lanes per direction. Hillcrest Avenue currently terminates at Prewett Ranch Drive in the south and Jacobsen Street in the north, past State Route 4. The posted speed limit is 45 mph in the study area. Sidewalks and bicycle facilities are provided along the full length of Hillcrest Avenue within the study area. Hillcrest Avenue, north of Lone Tree Way is a designated Route of Regional Significance. Hillcrest Avenue is planned to be extended from its current terminus to the site as adjacent development occurs.

## EXISTING PEDESTRIAN AND BICYCLE FACILITIES

Pedestrian facilities in the study area include sidewalks, crosswalks, pedestrian signals and multi-use trails. Improved roadways in the study area generally provide sidewalks on both sides of the street. No sidewalks are provided along Balfour Road along the project frontage, but would be constructed with the project on the north side of the street along the project frontage. At the signalized intersections in the area, crosswalks and pedestrian push-button actuated signals are provided. Bicycle facilities in Brentwood include the following:

- **Bike paths (Class I)** – Bike paths provide a completely separate right-of-way and are designated for the exclusive use of people riding bicycles and walking with minimal cross-flow traffic. Such paths can be well situated along creeks, canals, and rail lines. Class I Bikeways can also offer opportunities not provided by the road system by serving as both recreational areas and/or desirable commuter routes.
- **Bike lanes (Class II)** – Bike lanes provide designated street space for bicyclists, typically adjacent to the outer vehicle travel lanes. Bike lanes include special lane markings, pavement legends, and signage. Bike lanes may be enhanced with painted buffers between vehicle lanes and/or parking, and green paint at conflict zones (such as driveways or intersections).
- **Bike routes (Class III)** – Bike routes provide enhanced mixed-traffic conditions for bicyclists through signage, striping, and/or traffic calming treatments, and to provide continuity to a bikeway network. Bike routes are typically designated along gaps between bike trails or bike lanes, or along low-volume, low-speed streets. Bicycle boulevards provide further enhancements to bike routes to encourage slow speeds and discourage non-local vehicle traffic via traffic

diverters, chicanes, traffic circles, and/or speed tables. Bicycle boulevards can also feature special wayfinding signage to nearby destinations or other bikeways.

- **Separated Bikeway (Class IV)** – Separated bikeways, also referred to as cycle tracks or protected bikeways, are bikeways for the exclusive use of bicycles which are physically separated from vehicle traffic. Separated Bikeways were adopted by Caltrans in 2015. Types of separation may include, but are not limited to, grade separation, flexible posts, physical barriers, or on-street parking.

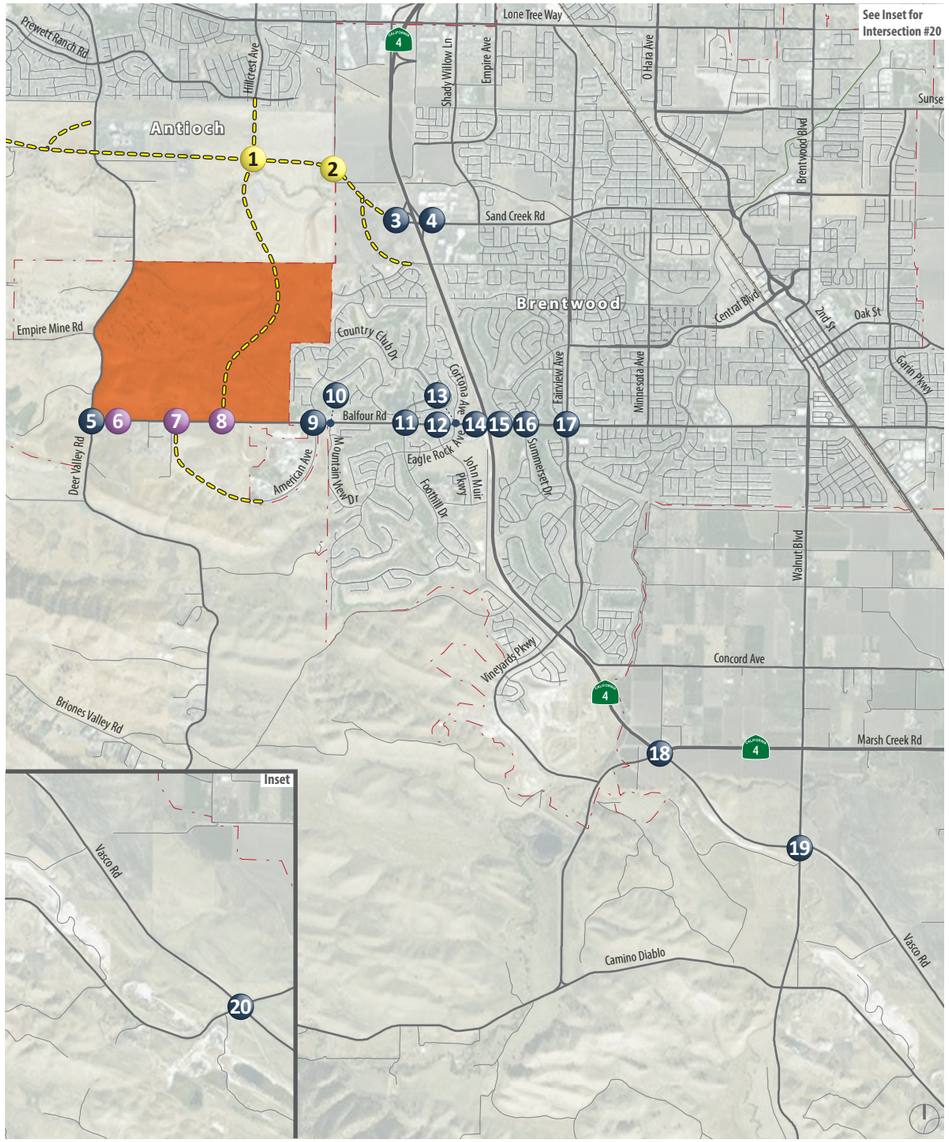
The City of Brentwood currently has ten miles of Class I Bicycle paths and sixteen miles of Class II bike lanes. In the immediate study area, there are Class II bike lanes along Balfour Road, American Avenue, County Club Drive, John Muir Parkway, and Fairview Avenue.

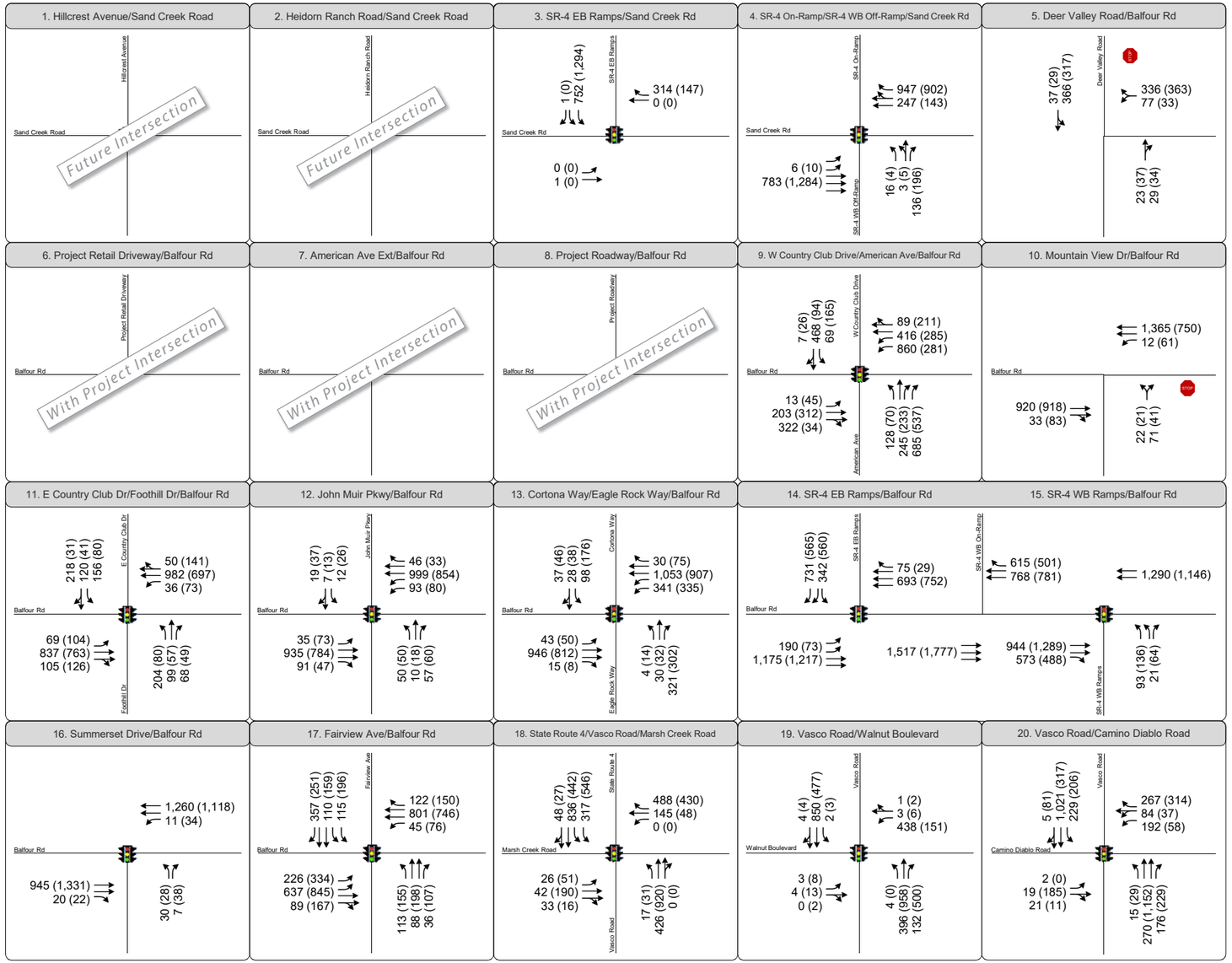
## EXISTING TRANSIT SERVICE

Eastern Contra Costa Transit Authority (Tri Delta Transit) provides transit service in eastern Contra Costa County, serving the communities of Brentwood, Antioch, Oakley, Concord, Discovery Bay, Bay Point and Pittsburg. Thirteen routes operate on weekdays, with four routes operating on weekends. Route 385 provides limited school hour service to American Avenue around school bell times. No other transit service is provided in the area.

## EXISTING TRAFFIC COUNTS

Weekday morning (6:00 to 9:00 AM) and evening (3:00 to 6:00 PM) peak period intersection turning movement counts were collected at the study intersections, including separate counts of pedestrians and bicyclists, in January 2019 with area schools in normal session. Peak hour intersection volumes are summarized on **Figure 4** along with existing lane configurations and traffic controls. The traffic counts for existing conditions are provided in **Appendix A**.




XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

Stop Sign

Project Site

Study Intersection

With Project Study Intersection

Future Study Intersection

Planned Future Roadway

Figure 4

## Existing Peak Hour
## Intersection Traffic Volumes, Lane Configurations and Traffic Controls

# EXISTING OPERATIONS ASSESSMENT

## INTERSECTION OPERATIONS

Existing operations were evaluated using the methods described in Chapter 1 for the weekday AM and PM peak hours at the study intersections, as summarized in **Table 3**. The analysis was based on the volumes, lane configurations, and traffic control presented on Figure 4. Observed peak hour factors[2] were used at all intersections for the existing analysis. Pedestrian and bicycle activity was also factored into the analysis. Detailed intersection LOS calculation worksheets are presented in **Appendix B**.

**TABLE 3**
**EXISTING CONDITIONS PEAK HOUR INTERSECTION LOS SUMMARY**

| | Intersection | Control[1] | Peak Hour | Delay[2, 3] | LOS |
|---|---|---|---|---|---|
| 1 | Sand Creek Road at Hillcrest Avenue | (Future Intersection) | | | |
| 2 | Sand Creek Road at Heidorn Ranch Road | (Future Intersection) | | | |
| 3 | Sand Creek Road at State Route 4 Eastbound Ramps | Signal | AM<br>PM | 11<br>6 | B<br>A |
| 4 | Sand Creek Road at State Route 4 Westbound Ramps | Signal | AM<br>PM | 7<br>7 | A<br>A |
| 5 | Balfour Road at Deer Valley Road | SSSC | AM<br>PM | 14 (22)<br>10 (14) | B (C)<br>A (B) |
| 6 | Balfour Road at Commercial Entrance | (With Project Intersection) | | | |
| 7 | Balfour Road at American Avenue Extension | (With Project Intersection) | | | |
| 8 | Balfour Road at Main Project Entry | (With Project Intersection) | | | |
| 9 | Balfour Road at American Avenue/W Country Club Drive | Signal | AM<br>PM | **58**<br>35 | **E**<br>C |

[2] The peak hour factor is the relationship between the peak 15-minute flow rate and the full hourly volume: PHF = Hourly volume / (4 x (volume during the peak 15 minutes of flow)). The analysis level of served is based on peak rates of flow occurring within the peak hour because substantial short term fluctuations typically occurring during an hour.

**TABLE 3**
**EXISTING CONDITIONS PEAK HOUR INTERSECTION LOS SUMMARY**

| Intersection | | Control[1] | Peak Hour | Delay[2, 3] | LOS |
|---|---|---|---|---|---|
| 10 | Balfour Road at Mountain View Drive[4] | SSSC | AM<br>PM | 1 (36)<br>4 **(107)** | A (E)<br>A **(F)** |
| 11 | Balfour Road at Foothill Drive/E Country Club Drive | Signal | AM<br>PM | 49<br>33 | D<br>C |
| 12 | Balfour Road at John Muir Parkway | Signal | AM<br>PM | 22<br>20 | C<br>B |
| 13 | Balfour Road at Eagle Rock Way/Cortona Way | Signal | AM<br>PM | 33<br>**69** | D<br>**E** |
| 14 | Balfour Road at State Route 4 Eastbound Ramps | Signal | AM<br>PM | 31<br>29 | C<br>C |
| 15 | Balfour Road at State Route 4 Westbound Ramps | Signal | AM<br>PM | 28<br>23 | C<br>C |
| 16 | Balfour Road at Summerset Drive | Signal | AM<br>PM | 4<br>5 | A<br>A |
| 17 | Balfour Road at Fairview Avenue | Signal | AM<br>PM | 27<br>34 | C<br>C |
| 18 | Marsh Creek Road/State Route 4 at Vasco Road | Signal | AM<br>PM | 21<br>21 | C<br>C |
| 19 | Walnut Boulevard at Vasco Road | Signal | AM<br>PM | 19<br>12 | B<br>B |
| 20 | Camino Diablo Road at Vasco Road | Signal | AM<br>PM | 24<br>27 | C<br>C |

Notes: **Bold** text indicates potentially unacceptable intersection operations.
1. Signal = Signalized intersection; SSSC = Side-street stop-controlled intersections; traffic on the main street does not stop while traffic on the side-street is controlled by a stop sign.
2. Average intersection delay is calculated for all signalized intersections using the 2010 HCM method for vehicles.
3. For SSSC intersections, average delay or LOS is listed first followed by the delay or LOS for the worst approach in parentheses.
4. During the morning peak hour around school bell times, signage prohibits the northbound left-turn movement from Mountain View Drive to Balfour Road.
Source: Fehr & Peers, 2019.

The signalized intersections of Balfour Road at American Avenue/West Country Club Drive and Balfour Road at Eagle Rock Way/Cortona Way currently operate at LOS E during at least one peak hour, which exceeds the level of service standard for the intersections. The unsignalized intersection of Balfour Road at Mountain View Drive currently experiences deficient operations for the side-street movements turning from Mountain View Drive to Balfour Road. However, the intersection operates at an overall acceptable service level. All remaining study intersections operate within their level of service standard.

## SIGNAL WARRANTS

To assess the need for signalization of stop-controlled intersections, the Manual of Uniform Traffic Control (MUTCD) (Federal Highway Administration 2009) presents nine signal warrants. The peak hour volume warrant was used in this study as a supplemental analysis tool to assess operations at unsignalized intersections.[3] The Balfour Road at Mountain View Drive and Balfour Road at Deer Valley Road intersections do not currently meet peak hour volume signal warrants. Signal warrant worksheets are provided in **Appendix C**.

[3] Unsignalized intersection warrant analysis is intended to examine the general correlation between existing conditions and the need to install new traffic signals. Existing peak-hour volumes are compared against a subset of the standard traffic signal warrants recommended in the MUTCD and associated State guidelines. This analysis should not serve as the only basis for deciding whether and when to install a signal. To reach such a decision, the full set of warrants should be investigated based on field-measured traffic data and a thorough study of traffic and roadway conditions by an experienced engineer. Furthermore, the decision to install a signal should not be based solely on the warrants because the installation of signals can lead to certain types of collisions. The responsible State or local agency should undertake regular monitoring of actual traffic conditions and accident data and conduct a timely re-evaluation of the full set of warrants in order to prioritize and program intersections for signalization.

# 3. PROJECT CHARACTERISTICS

This chapter provides an overview of the proposed project components and addresses the proposed project trip generation, distribution, and assignment characteristics, allowing for an evaluation of project impacts on the surrounding roadway network. The amount of traffic associated with the project was estimated using a three-step process:

1. **Trip Generation** – The *amount* of vehicle traffic entering/exiting the project site was estimated.
2. **Trip Distribution** – The *direction* trips would use to approach and depart the site was projected.
3. **Trip Assignment** – Trips were then *assigned* to specific roadway segments and intersection turning movements.

## PROJECT DESCRIPTION

The project site is located to the north of Balfour Road and to the east of Deer Valley Road in unincorporated Contra Costa County. Although the project site is located in unincorporated Contra Costa County, it is within the City of Brentwood Planning area and designated as a Special Planning Area. As part of the project, the site would be annexed into the City of Brentwood. The site is currently undeveloped.

The approximately 815 acre site is proposed to be developed with up to 2,400 single-family homes, including 1,920 age restricted (55+) active adult single family homes, and up to 480 market rate homes on approximately 555 acres. Approximately 15-acres within the residential area would be designated for community recreation areas that would be restricted to residents of the development. An approximately 20-acre area on Balfour Road at Deer Valley Road could be developed with a mixture of community-serving uses, which might include local serving retail uses. The remaining 225-acres would be dedicated open space.

As currently contemplated, vehicular access would occur from Balfour Road and an extension of Hillcrest Avenue. The Hillcrest Avenue extension would ultimately connect Balfour Road to Sand Creek Road, and north into Antioch as various sections are constructed by others in conjunction with adjacent development. Within the site the roadway would be access restricted, such that there would not be a public vehicle connection between the future Sand Creek Road and Balfour Road via the Hillcrest Avenue alignment. The analysis results presented in the following chapters assumes that in the existing and near-term condition, all site access would occur from Balfour Road, and that in the Cumulative Condition, access would be provided via the Hillcrest Avenue Extension.



As currently proposed, primary access to the project site would be provided from a new roadway connection to Balfour Road. This entry road would provide access to two residential neighborhoods and the Community Recreation Center. Vehicular access to the remainder of the project site and emergency vehicle access would be from a restricted (gated) access that would be provided from the future northerly extension of Hillcrest Avenue in the City of Antioch. The road would connect to a series of collector and local streets providing access to individual residential neighborhoods. Within the site Hillcrest Avenue would be access restricted, such that there would not be a public vehicle connection between the future Sand Creek Road and Balfour Road via the Hillcrest Avenue alignment.

The following off-site roadway improvements would be provided as a part of the project.

- American Avenue Extension. Consistent with the General Plan (Figure CIR-1: Circulation Diagram), American Avenue would be extended to the west and north to reconnect to Balfour Road, creating a continuous loop road. The interim design would include a landscaped median and one travel lane, a parking or bike lane, and sidewalk in each direction.
  Construction of the American Avenue extension would occur in connection with the first phase of residential development within the project. The exact timing of construction would be subject to posting of bonds to guarantee construction, and the completion of any necessary permitting effort with Contra Costa County and other relevant agencies.
- Balfour Road. Consistent with the General Plan (Figure CIR-1: Circulation Diagram), Balfour Road would be widened from two to four lanes from the existing eastern American Avenue intersection west to the new western American Avenue intersection (described above). Improvements to Balfour Road would be completed in at least three phases, as follows:

  - Phase 1: Balfour Road would be widened from two to four lanes from the existing American Avenue intersection to the project entrance and improved as a two-lane road west to Deer Valley Road.

  - Phase 2: Balfour Road would then be widened from two to four lanes from the project entrance, west to the new American Avenue intersection (described above). This improvement would be implemented as traffic demand necessitates and would be evaluated with each small-lot final subdivision map.

  - Phase 3: Balfour Road would be improved as a two-lane road from the new western American Avenue intersection west to Deer Valley Road. These improvements are consistent with the General Plan (Figure CIR-1: Circulation Diagram) and would not preclude this portion of Balfour Road from being subsequently widened from two to four lanes. This improvement would be implemented as traffic demand necessitates and would be evaluated with each small-lot final subdivision map.

The primary project access roadway would be located approximately equidistant between the two intersections of American Avenue with Balfour Road. A secondary driveway providing access to the commercial site would be provided east of Deer Valley Road.

## PROJECT TRIP GENERATION

Trip generation refers to the process of estimating the amount of vehicular traffic a project would add to the surrounding roadway system. Estimates are created for the daily condition and for the peak one-hour period during the morning and evening commute when traffic volumes on the adjacent streets are typically the highest. Project trip generation was estimated using rates from the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (10th Edition) for single-family homes and the potential commercial uses on Balfour Road. For the active adult single-family homes, Fehr & Peers conducted a trip generation survey of over 1,700 active adult residences in Brentwood over a two-day period. The trip generation study is provided in **Appendix D**. As no specific uses are proposed for the commercial site, it was assumed to be developed with up to 91,500 square-feet of general retail space. At the time development is proposed for the commercial site, the trip generating potential of proposed uses should be estimated and compared to the assumptions of this study to determine if additional transportation analysis might be required.

As shown in **Table 4**, the project is expected to generate approximately 14,970 daily vehicle trips, with approximately 750 morning peak hour and 1,360 evening peak hour trips, including the trip generating potential of the commercial uses on Balfour Road.

The Specific Plan may allow for residential uses to be constructed within the commercial area, provided that the overall level of residential development within the entire project does not exceed 2,400 dwelling units. Although the overall number of dwelling units would not exceed 2,400, constructing residential within the commercial zone would change the overall project traffic loads to Balfour Road in the cumulative condition. Should residential uses ultimately be constructed in the commercial area, the level of commercial development would need to be reduced to maintain the overall conclusions of the analysis presented in the following chapters. For each 10 active adult homes constructed on the commercial area, the commercial square-footage would need to be reduced by 1,750 square feet. For each 10 traditional single-family homes constructed in the commercial area, the commercial square-footage would need to be reduced by 14,500 square feet.

**TABLE 4**
**TRIP GENERATION ESTIMATES**

| Use | Size | Weekday | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Daily | AM Peak Hour | | | PM Peak Hour | | |
| | | | In | Out | Total | In | Out | Total |
| Age Restricted Single Family Homes[1] | 1,920 dwelling units | 6,990 | 115 | 192 | 307 | 307 | 230 | 537 |
| Single-Family[2] | 480 dwelling units | 4,530 | 89 | 266 | 355 | 299 | 176 | 475 |
| General Commercial[3] | 91,500 square feet | 3,450 | 53 | 33 | 86 | 168 | 181 | 349 |
| *Total Project Trips* | | ***14,970*** | ***257*** | ***491*** | ***748*** | ***774*** | ***587*** | ***1,361*** |

Notes:
1. Based on trip generation study, provided as Appendix D.
2. ITE land use category 210 – Single-Family Homes (Adj Streets, 7-9A, 4-6P):
   Daily: (T) = 9.44 (X)
   AM Peak Hour: T = 0.74 (X); Enter = 25%; Exit = 75%
   PM Peak Hour: T = 0.99 (X); Enter = 63%; Exit = 37%
3. ITE land use category 820 – General Commercial (Adj Streets, 7-9A, 4-6P):
   Daily: (T) = 37.75 (X)
   AM Peak Hour: T = 0.94 (X); Enter = 62%; Exit = 38%
   PM Peak Hour: T = 3.81 (X); Enter = 48%; Exit = 52%

Source: *Trip Generation Manual* (10th Edition), Web Version 2.3, ITE, 2019; Fehr & Peers, February 2019.

The Specific Plan may also allow for age restricted multi-family buildings in lieu of detached single-family units. There is limited available published data related to the trip generating characteristics of age restricted multi-family buildings without services, with most of the available published age restricted trip generation data reflecting single-family and duplex-style single-family homes without services, or large facilities with varying levels of outside support, including meal preparation and health care. A comparison of ITE trip generation rates between non-age restricted single-family and multi-family homes indicates that on average each non-age restricted multi-family home generates about 20 percent less daily vehicle activity and 40 percent less peak hour vehicle activity than a non-age restricted single-family home. It is expected that a similar decrease in vehicle trip generation between an age restricted multi-family home and age restricted single-family home would occur. However, as limited published trip generation data is available for age-restricted multi-family homes, and the provision of age restricted multi-family units would not increase the overall unit count, the overall findings of the transportation assessment would remain if age-restricted multi-family units are constructed in lieu of age restricted single-family homes.

# PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

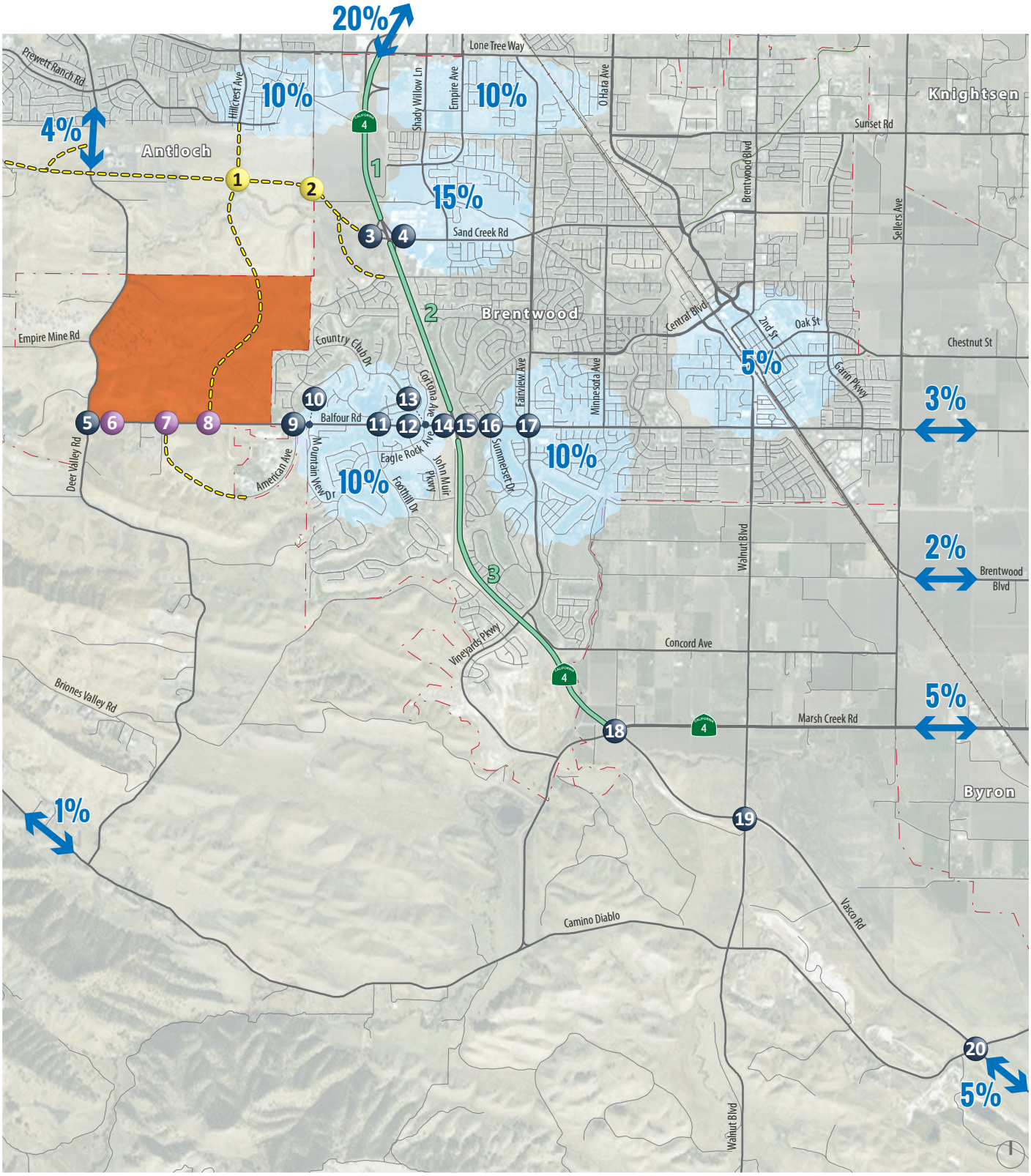
Project trip distribution refers to the directions of approach and departure that vehicles would take to access and leave the site. Estimates of regional project trip distribution were developed based on existing travel patterns in the area, a select zone analysis using the Contra Costa Transportation Authority (CCTA) travel demand model, and the location of complementary land uses. This data was used in combination with anonymized and aggregated location data from Global Positioning Systems (GPS) and mobile devices, referred to here as Big Data.

Fehr & Peers worked with StreetLight Data[4] to review thousands of anonymous data samples representing trips with an origin within the Summerset neighborhoods (an established 55+ development) and existing market-rate neighborhoods adjacent to the Summerset neighborhoods, reflecting typical City of Brentwood travel patterns. Data is representative of typical weekday conditions (Monday through Thursday) and weekend conditions (Saturday and Sunday) and is based on data from 2016. For the purposes of this assessment, we estimated how many trips remain within the City of Brentwood and adjacent communities, and how many trips travel on the regional roadway system, including Vasco Road, Byron Highway, State Route 4 west and State Route 4 east.

Review of the data indicates that for residential uses in Brentwood, approximately 70 percent of peak hour trips remain within Brentwood. Of the trips that leave the Brentwood area, approximately 5 percent travel to Livermore and beyond, 5 percent travel to Antioch, 15 percent travel further west of State Route 4 to destinations beyond Antioch, 2 percent travel on Byron Highway, and 3 percent travel on State Route 4 east. It is expected that project trips would have a similar overall trip distribution pattern, although the routes that project trips would differ based on their proposed location within the City of Brentwood.

The commercial uses are expected to be locally serving, such that most trips to/from the proposed retail uses would be from adjacent neighborhoods. Based on our review of the Big Data, and other available data sources, peak hour project trip distribution estimates are presented on **Figure 5.** Project trips were then assigned to the roadway network based on the directions of approach and departure, as presented on **Figure 6** for the existing and near-term condition roadway network (all access from Balfour Road) and **Figure 7** for the cumulative condition roadway network (access from Balfour Road and Hillcrest Avenue).

[4] Additional information about StreetLight Data can be found on its website: http://www.streetlightdata.com/



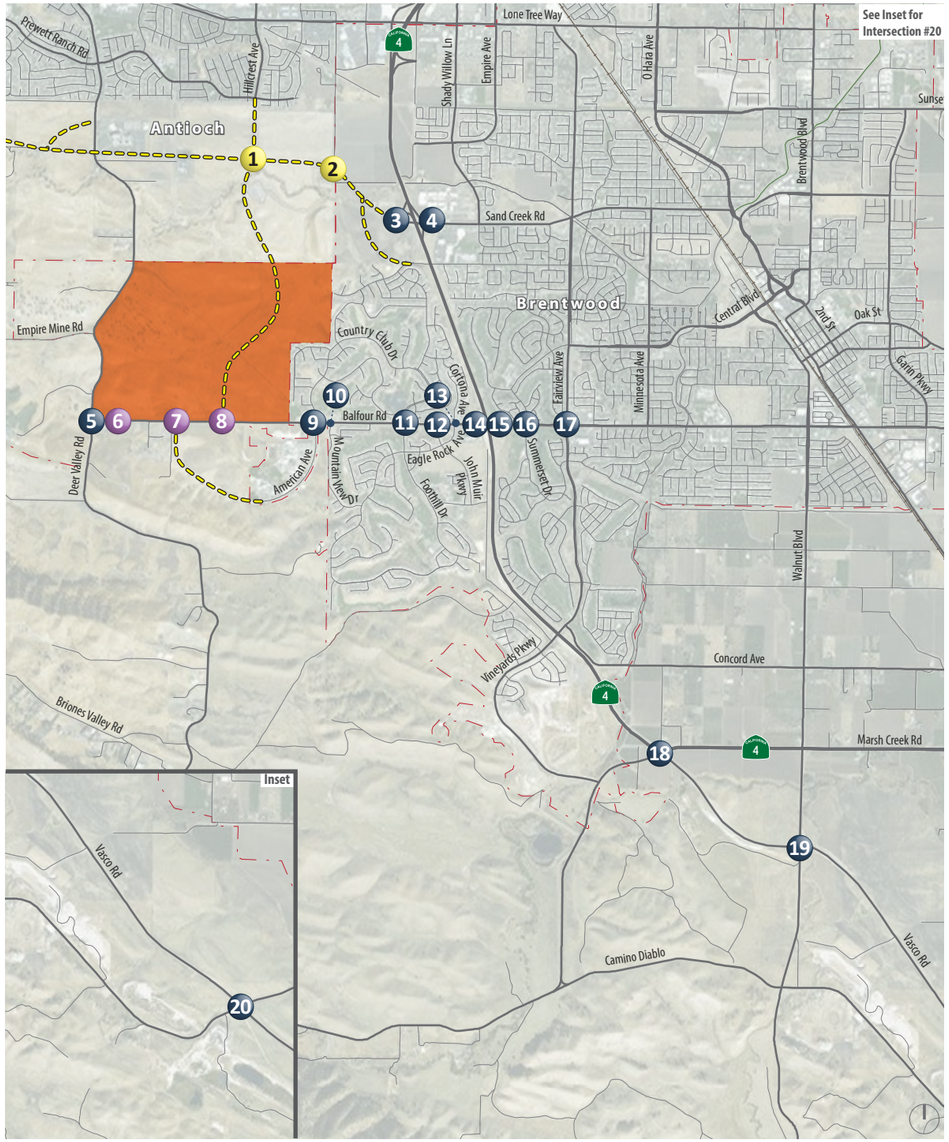

Project Site | Study Intersection | With Project Study Intersection | Future Study Intersection

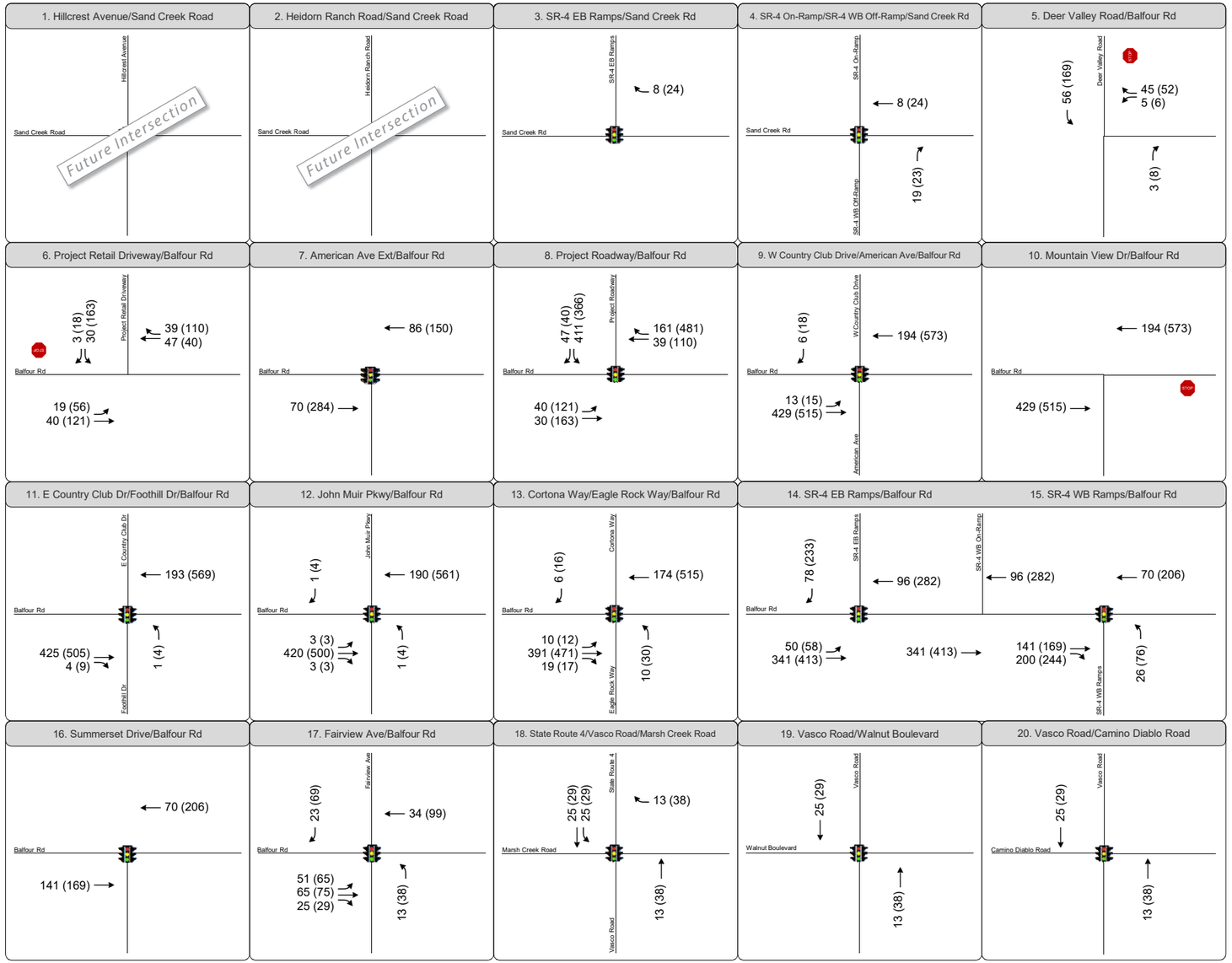
Planned Future Roadway | Freeway Study Segment | X% Project Trip Distribution

Figure 5

# Preliminary Project Trip Distribution

WC16-3328_5_TripDistro




XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

Stop Sign

Project Site

Study Intersection

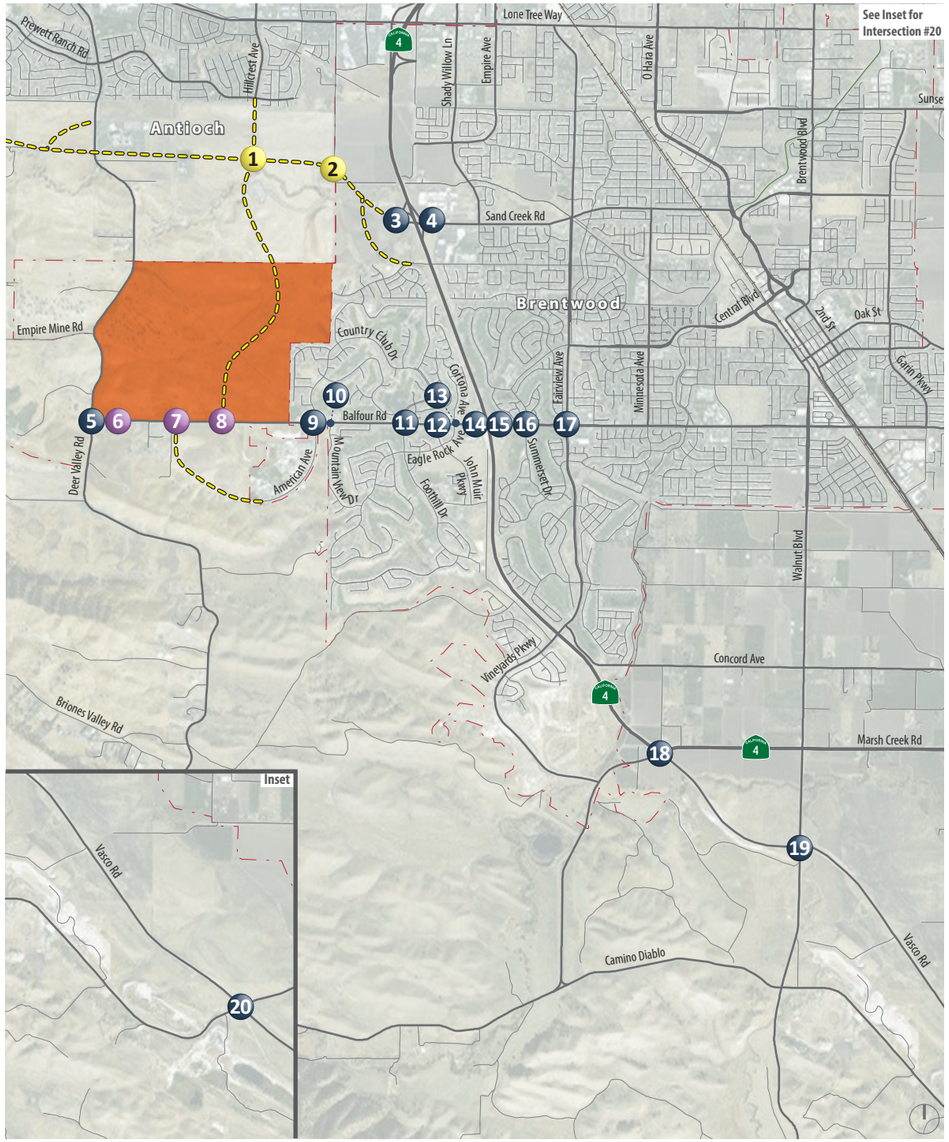
With Project Study Intersection

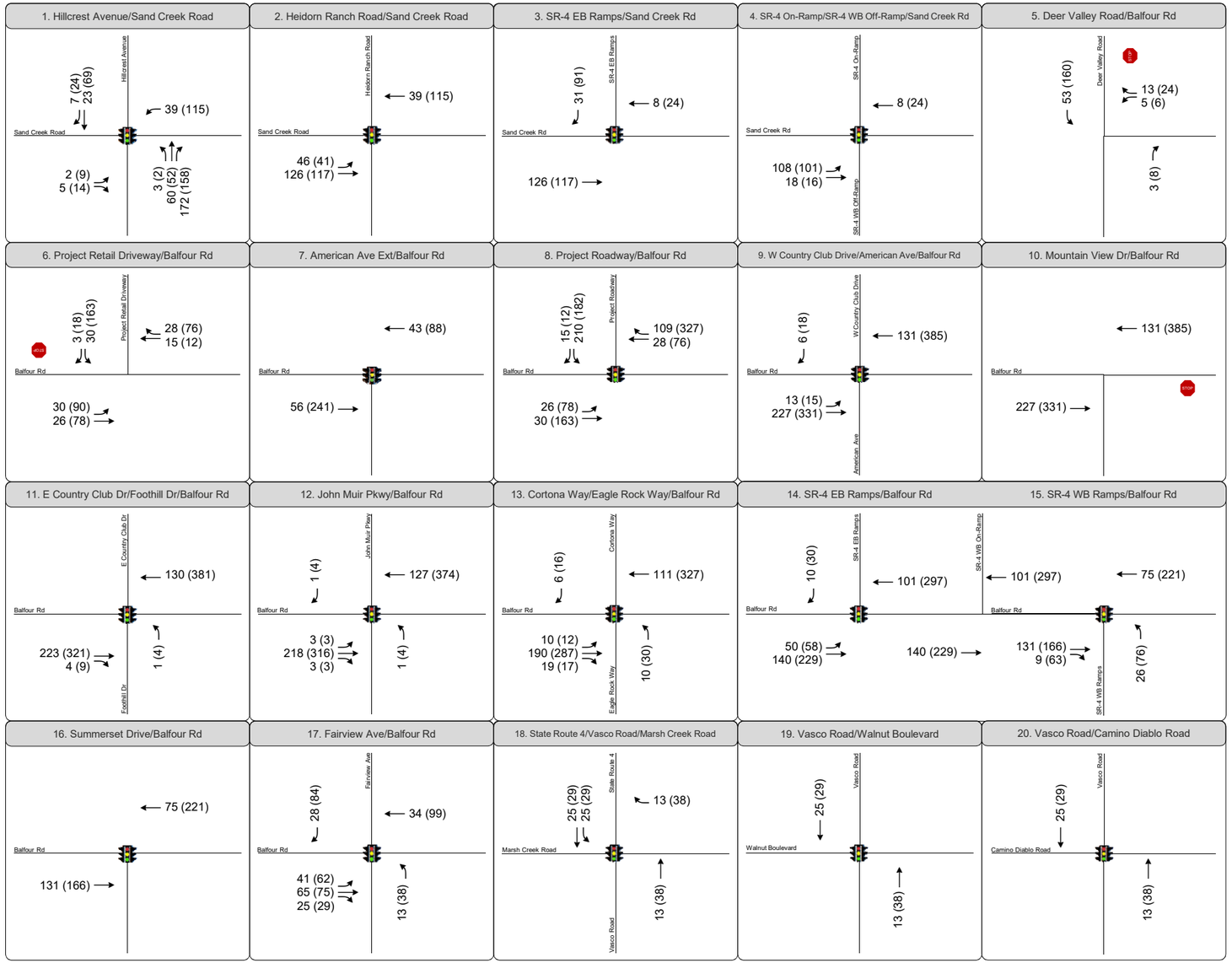
Future Study Intersection

Planned Future Roadway

Figure 6

## Project Trip Assignment — Existing and Near-Term Roadway Network




XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

Stop Sign

Project Site

Study Intersection

With Project Study Intersection

Future Study Intersection

Planned Future Roadway

Figure 7

# Project Trip Assignment — Cumulative Roadway Network

# 4. EXISTING WITH PROJECT TRAFFIC CONDITIONS

This chapter evaluates potential off-site traffic impacts under Existing with Project conditions.

## EXISTING WITH PROJECT TRAFFIC VOLUMES

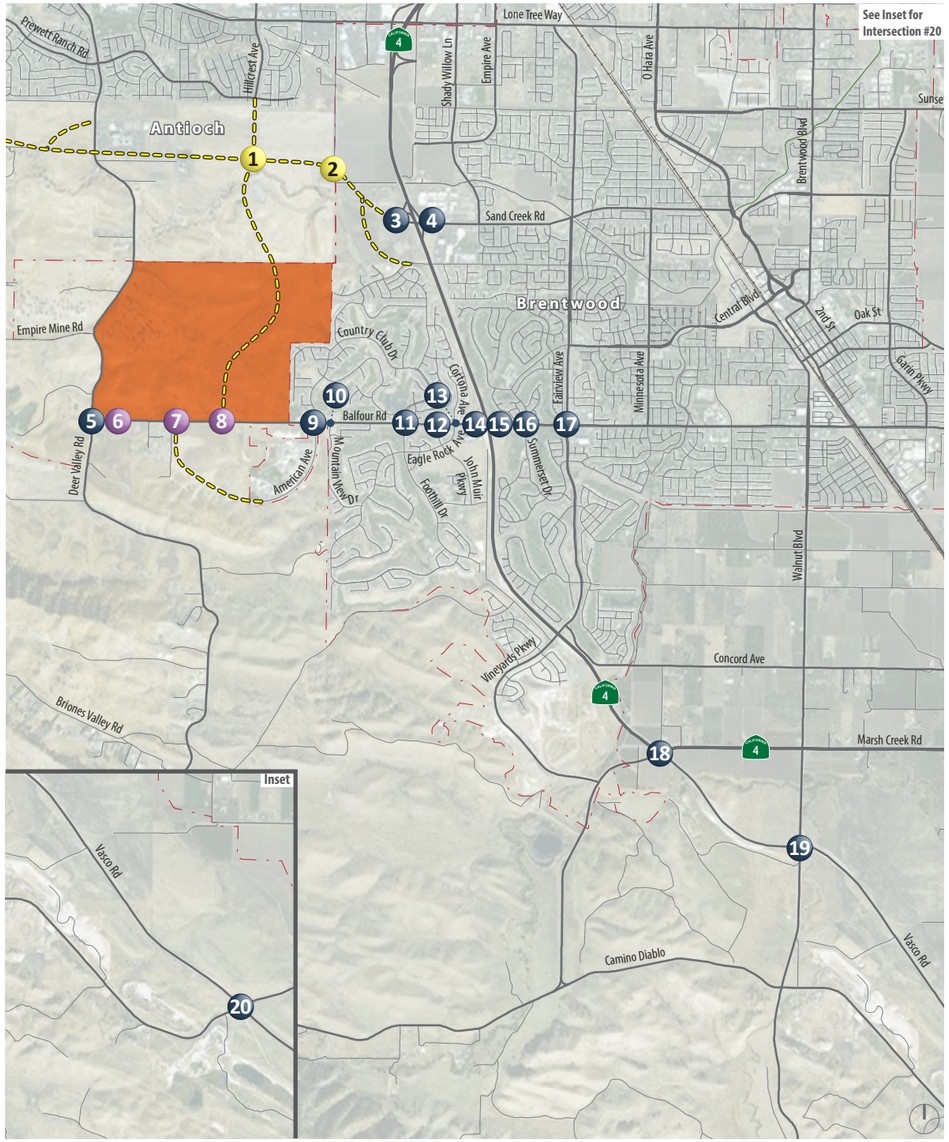
The project traffic volumes on Figure 6 were added to the existing traffic volumes from Figure 4 to estimate the Existing with Project traffic volumes, as shown on **Figure 8**. In the existing condition, all vehicular access to the project site would occur from Balfour Road. As part of the project, Balfour Road would be widened to four lanes from American Avenue to the future American Avenue Loop connection. An extension of American Avenue from its current terminus would also be constructed as part of the project, connecting to Balfour Road approximately 4,000 feet from the existing American Avenue intersection at Balfour Road, providing additional access to Heritage High School and Adams Middle School; the resulting volumes shown on **Figure 8** consider the expected traffic shifts with that new roadway connection. A signalized intersection on Balfour Road and Project Roadway is assumed as part of the project, as well as on Balfour Road at the American Avenue Extension intersection. The site plan review chapter provides an evaluation of the site access intersection with roundabout control.

## ANALYSIS OF EXISTING WITH PROJECT CONDITIONS

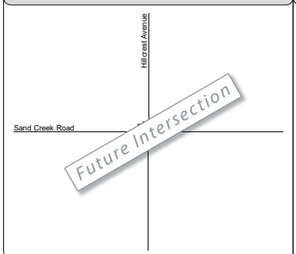
### INTERSECTION OPERATIONS

Existing with Project intersection operations were evaluated using the methods described in Chapter 1. The Existing with Project analysis results are presented in **Table 5**, based on the traffic volumes presented on **Figure 6**. In the existing condition, two study intersections operate beyond the Cities desired level of service standard within the established level of service standard: Balfour Road at American Avenue/West Country Club Drive and Balfour Road at Eagle Rock Way/Cortona Way.

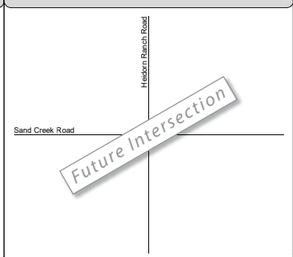
The addition of project traffic would slightly increase average delay at the Balfour Road at Eagle Rock Way/Cortona Way, but would reduce delay at the Balfour Road at American Avenue/West Country Club Drive and improve the level of service to an acceptable level with the construction of the American Avenue extension which would provide alternative access to Heritage High School and Adams Middle School.



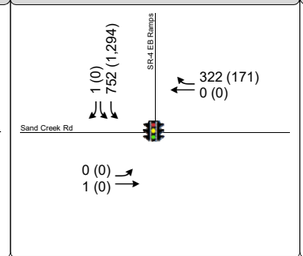

1. Hillcrest Avenue/Sand Creek Road



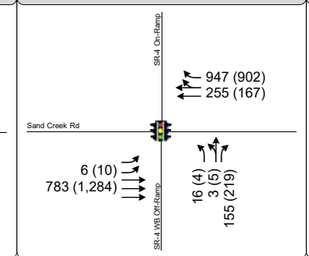

2. Heidorn Ranch Road/Sand Creek Road



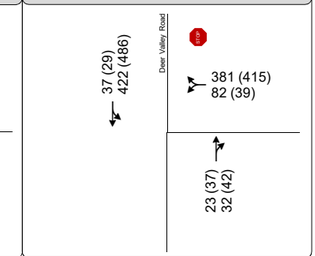

3. SR-4 EB Ramps/Sand Creek Rd



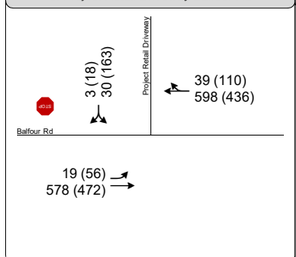

4. SR-4 On-Ramp/SR-4 WB Off-Ramp/Sand Creek Rd



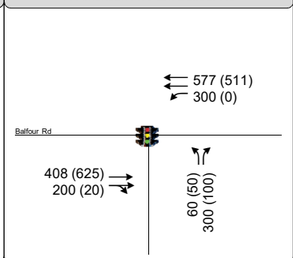

5. Deer Valley Road/Balfour Rd



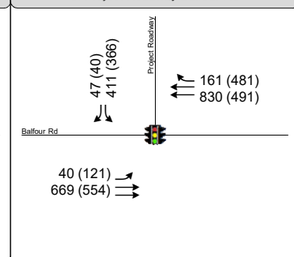

6. Project Retail Driveway/Balfour Rd



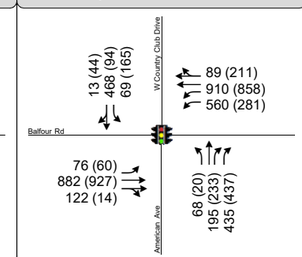

7. American Ave Ext/Balfour Rd



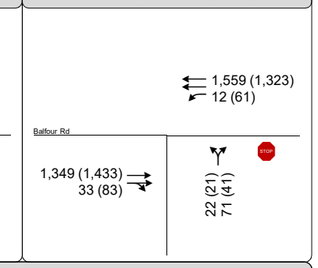

8. Project Roadway/Balfour Rd



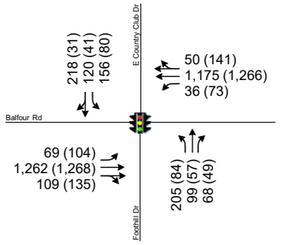

9. W Country Club Drive/American Ave/Balfour Rd



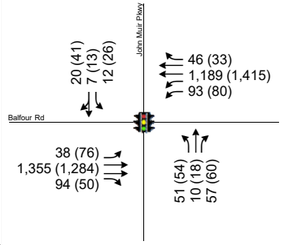

10. Mountain View Dr/Balfour Rd



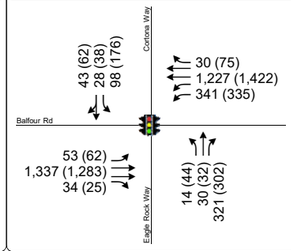

11. E Country Club Dr/Foothill Dr/Balfour Rd



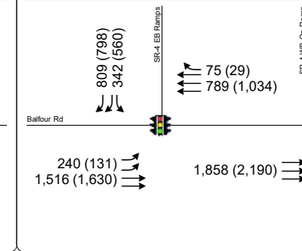

12. John Muir Pkwy/Balfour Rd



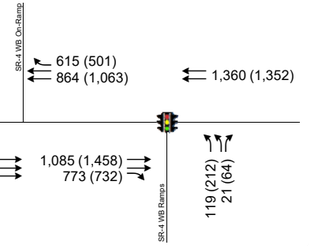

13. Cortona Way/Eagle Rock Way/Balfour Rd



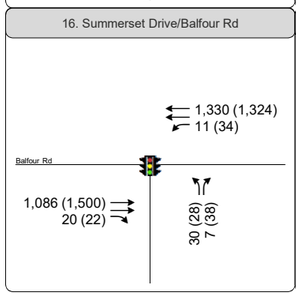

14. SR-4 EB Ramps/Balfour Rd



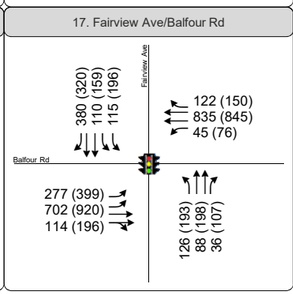

15. SR-4 WB Ramps/Balfour Rd



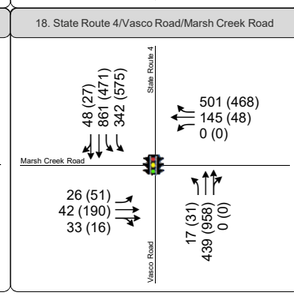

16. Summerset Drive/Balfour Rd



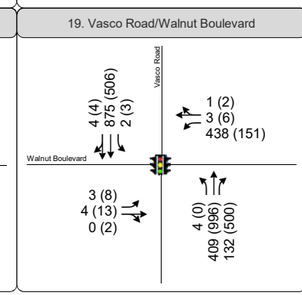

17. Fairview Ave/Balfour Rd



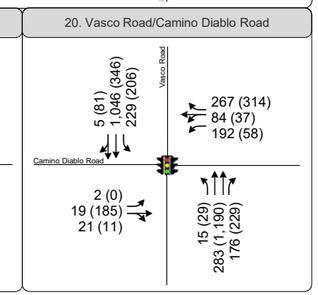

18. State Route 4/Vasco Road/Marsh Creek Road




19. Vasco Road/Walnut Boulevard




20. Vasco Road/Camino Diablo Road




XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

Stop Sign

Project Site

Study Intersection

With Project Study Intersection

Future Study Intersection

Planned Future Roadway

Figure 8

## Existing with Project Peak Hour Intersection Traffic Volumes, Lane Configurations and Traffic Controls

**TABLE 5**
**EXISTING WITH PROJECT CONDITIONS PEAK HOUR INTERSECTION LOS SUMMARY**

| Intersection | | Control[1] | Peak Hour | Existing | | Existing with Project | | Significant Impact? |
|---|---|---|---|---|---|---|---|---|
| | | | | Delay[2, 3] | LOS | Delay[2, 3] | LOS | |
| 1 | Sand Creek Road at Hillcrest Avenue | (Future Intersection) | | | | | | N/A |
| 2 | Sand Creek Road at Heidorn Ranch Road | (Future Intersection) | | | | | | N/A |
| 3 | Sand Creek Road at State Route 4 Eastbound Ramps | Signal | AM<br>PM | 11<br>6 | B<br>A | 12<br>8 | B<br>A | No |
| 4 | Sand Creek Road at State Route 4 Westbound Ramps | Signal | AM<br>PM | 7<br>7 | A<br>A | 8<br>9 | A<br>A | No |
| 5 | Balfour Road at Deer Valley Road | SSSC | AM<br>PM | 14 (22)<br>10 (14) | B (C)<br>A (B) | 20 (36)<br>14 (24) | C (E)<br>B (C) | No |
| 6 | Balfour Road at Commercial Entrance | SSSC | AM<br>PM | (With Project Intersection) | | 1 (31)<br>13 ***(90)*** | A (D)<br>B ***(F)*** | **Yes**; side-street operates at LOS F and peak hour signal warrants met |
| 7 | Balfour Road at American Avenue Extension | Signal | AM<br>PM | (With Project Intersection) | | 16<br>6 | B<br>A | No |
| 8 | Balfour Road at Main Project Entry | Signal | AM<br>PM | (With Project Intersection) | | 14<br>11 | B<br>B | No |
| 9 | Balfour Road at American Avenue/W Country Club Drive | Signal | AM<br>PM | **58**<br>35 | **E**<br>C | 50<br>40 | D<br>D | No; improves LOS to acceptable |
| 10 | Balfour Road at Mountain View Drive[4] | SSSC | AM<br>PM | 1 (36)<br>4 **(107)** | A (E)<br>A **(F)** | 5 **(168)**<br>**41 (>180)** | A **(F)**<br>**E (F)** | **Yes**; intersection average delay worse than LOS C. |
| 11 | Balfour Road at Foothill Drive/E Country Club Drive | Signal | AM<br>PM | 49<br>33 | D<br>C | ***81***<br>***62*** | ***F***<br>***E*** | **Yes**; results in LOS E or F |
| 12 | Balfour Road at John Muir Parkway | Signal | AM<br>PM | 22<br>20 | C<br>B | 24<br>26 | C<br>C | No |
| 13 | Balfour Road at Eagle Rock Way/Cortona Way | Signal | AM<br>PM | 33<br>**69** | D<br>**E** | 33<br>***76*** | D<br>***E*** | **Yes**; average delay increases more than 5-seconds |
| 14 | Balfour Road at State Route 4 Eastbound Ramps | Signal | AM<br>PM | 31<br>29 | C<br>C | 47<br>52 | D<br>D | No |

**TABLE 5**
**EXISTING WITH PROJECT CONDITIONS PEAK HOUR INTERSECTION LOS SUMMARY**

| | Intersection | Control[1] | Peak Hour | Existing | | Existing with Project | | Significant Impact? |
|---|---|---|---|---|---|---|---|---|
| | | | | Delay[2, 3] | LOS | Delay[2, 3] | LOS | |
| 15 | Balfour Road at State Route 4 Westbound Ramps | Signal | AM<br>PM | 28<br>23 | C<br>C | 29<br>23 | C<br>C | No |
| 16 | Balfour Road at Summerset Drive | Signal | AM<br>PM | 4<br>5 | A<br>A | 4<br>6 | A<br>A | No |
| 17 | Balfour Road at Fairview Avenue | Signal | AM<br>PM | 27<br>34 | C<br>C | 29<br>42 | C<br>D | No |
| 18 | Marsh Creek Road/State Route 4 at Vasco Road | Signal | AM<br>PM | 21<br>21 | C<br>C | 21<br>26 | C<br>C | No |
| 19 | Walnut Boulevard at Vasco Road | Signal | AM<br>PM | 19<br>12 | B<br>B | 19<br>14 | B<br>B | No |
| 20 | Camino Diablo Road at Vasco Road | Signal | AM<br>PM | 24<br>27 | C<br>C | 24<br>32 | C<br>C | No |

Notes: **Bold** text indicates potentially unacceptable intersection operations. ***Bold Italic*** indicates potentially significant impact.
1. Signal = Signalized intersection; SSSC = Side-street stop-controlled intersections; traffic on the main street does not stop while traffic on the side-street is controlled by a stop sign.
2. Average intersection delay is calculated for all signalized intersections using the 2010 HCM method for vehicles.
3. For SSSC intersections, average delay or LOS is listed first followed by the delay or LOS for the worst approach in parentheses.
4. During the morning peak hour around school bell times, signage prohibits the northbound left-turn movement from Mountain View Drive to Balfour Road.
Source: Fehr & Peers, 2019.

The addition of project traffic would worsen the operations of the Balfour Road at Eagle Rock Way/Cortona Way intersection and would increase overall delay by more than five seconds.

The addition of project traffic in combination with the American Avenue extension would improve operations at the Balfour Road at American Avenue/W Country Club Drive and result in acceptable levels of service during the morning peak hour when the intersection currently operates at a deficient level. This is due to the potential for some vehicle trips to shift their travel pattern to use the new Balfour Road at American Avenue intersection as either part of their inbound route or outbound route (or both).

However, the addition of project traffic would potentially result in three intersections degrading beyond their established level of service standard:

- Balfour Road at Commercial Entrance
- Balfour Road at Mountain View Drive
- Balfour Road at Foothill Drive/East Country Club Drive

Potential mitigation measures are discussed at the end of this chapter.

### SIGNAL WARRANTS

To assess the need for signalization of stop-controlled intersections, the Manual of Uniform Traffic Control (MUTCD) (Federal Highway Administration 2009) presents nine signal warrants. The peak hour volume warrant was used in this study as a supplemental analysis tool to assess operations at unsignalized intersections. The Balfour Road at Mountain View Drive and Balfour Road at Deer Valley Road intersections do not meet peak hour signal warrants in the existing condition prior to the addition of project traffic.

Signal warrants would be satisfied in the existing condition with the addition of project traffic at the commercial project driveway that was not planned to be signalized as part of the project, and at the Deer Valley at Balfour Road intersection. Signal warrants are also satisfied at the proposed project roadway to Balfour Road and the American Avenue extension intersection, which are planned to be signalized as part of the project.

## EXISTING CONDITIONS IMPACTS AND MITIGATION

Potential significant off-site intersection impacts were identified in the existing condition.

***Impact Statement 1:*** Intersection 6 – Balfour Road at Commercial Entrance

The Commercial Project Driveway on Balfour Road is projected to operate at an overall acceptable service level. However, vehicles turning from the site to Balfour Road could experience LOS F operations during the PM peak hour and peak hour signal warrants are expected to be satisfied, depending on the ultimate development that is proposed for the site. Based on the significance criteria, this impact is considered ***significant***.

Mitigation Measure 1: Design the commercial access intersection to provide acceptable access. Options could include reducing the size of the commercial development, signalizing the driveway, or widening Balfour Road to provide two through lanes in both direction to Deer Valley Road. **Table 6** shows the level of service with signalization, separate left and right-turn lanes from the site to Balfour Road, a westbound right-turn only lane and an eastbound left-turn lane, with one through lane in each direction on Balfour Road. Implementation of this measure would reduce the impact to a ***less-than-significant*** level.

***Impact Statement 2:*** Intersection 10 – Mountain View Drive at Balfour Road

Through traffic on Balfour Road at Mountain View Drive at Balfour Road travels without delay, with delay experienced for vehicles turning from Mountain View Drive (both right-turning and left-turning vehicles) to Balfour Road, and for vehicles turning left from Balfour Road to Mountain View Drive. During the morning peak hour, the northbound left-turn movement is prohibited for an hour around the bell times of the near-by schools. Peak hour signal warrants are not met at the intersection in the existing condition.

The addition of project traffic through the intersection would further worsen LOS F conditions for the side-street movement during the PM peak hour, result in LOS F conditions during the morning peak hour, and result in overall LOS E conditions during the PM peak hour. Peak hour signal warrants would not be satisfied with the addition of project traffic. Based on the significance criteria, this impact is ***significant***.

Mitigation Measure 2: Prohibiting the northbound left-turn from Mountain View Drive to Balfour Road would result in acceptable operations for the side-street movement, reducing the impact to a ***less-than-significant*** level. However, that restriction could result in circuitous travel for the residents of that neighborhood at all times of day; during periods of peak delay for the northbound left-turn movement, drivers can opt to make a right-turn to Balfour Road.

Additionally, in the cumulative condition when project access is also provided via the Hillcrest Avenue extension, the intersection continues to operate at an overall acceptable service level with the addition of project traffic and the improvement may not be necessary in the long-term condition. If this improvement is not implemented, the near-term impact would be significant and unavoidable, while the long-term impact would be ***less-than-significant.***

***Impact Statement 3:*** Intersection 11 – Foothill Drive/East Country Club Drive at Balfour Road

The addition of project-generated vehicle trips would worsen overall LOS D conditions for the intersection to LOS F conditions in the Existing with Project condition during the morning peak hour and to LOS E conditions during the PM Peak hour. Based on the significance criteria, this is considered a ***significant*** impact.

Mitigation Measure 3: The project applicant shall reimburse the City for staff time to update the traffic signal timing and coordination plans along Balfour Road between the project

roadway and Fairview Avenue. Optimization of the signal timings along the Balfour Road corridor, including Foothill Drive/East Country Club Drive at Balfour Road, to better accommodate future travel patterns would result in LOS D operations, as shown in **Table 6**, reducing the project impact to a ***less-than-significant*** level.

Prior to the approval of each tentative tract or parcel map for development within the Project, the Applicant shall have prepared and shall submit to the City a focused transportation study, evaluating the effects of the proposed phase of development at the intersections where impacts were previously identified to determine if the potential significant intersection impact identified above would be triggered by that proposed development, and what signal timing changes would be necessary to achieve acceptable operations along the Balfour Road corridor.

***Impact Statement 4:*** Intersection 13 – Balfour Road at Eagle Rock Way/Cortona Way

The addition of project-generated vehicle trips would worsen overall LOS E conditions under the Existing with Project condition during PM Peak hour and increase average delay by more than 5-sections. Based on the significance criteria, this is considered a ***significant*** impact.

Mitigation Measure 4: The project applicant will work with the City of Brentwood to retime and coordinate traffic signal timings on Balfour Road between the project roadway and Fairview Avenue. Optimization of the signal timings along the Balfour Road corridor, including Foothill Drive/East Country Club Drive at Balfour Road, to better accommodate future travel patterns would result in LOS D operations, as shown in **Table 6**, reducing the project impact to a ***less-than-significant*** level.

Prior to the approval of each tentative tract or parcel map for development within the Project, the Applicant shall have prepared and shall submit to the City a focused transportation study, evaluating the effects of the proposed phase of development at the intersections where impacts were previously identified to determine if the potential significant intersection impact identified above would be triggered by that proposed development, and what signal timing changes would be necessary to achieve acceptable operations along the Balfour Road corridor.

**TABLE 6**
**EXISTING CONDITIONS WITH MITIGATION**
**PEAK HOUR INTERSECTION LOS SUMMARY**

| Intersection | | Control[1] | Peak Hour | Existing Conditions | | Existing with Project | | Existing with Project With Mitigation | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Delay[2,3] | LOS | Delay[2,3] | LOS | Delay[2,3] | LOS |
| 6 | Balfour Road at Commercial Entrance | SSSC/ Signal | AM<br>PM | (With Project Intersection) | | 1 (31)<br>13 ***(90)*** | A (D)<br>B ***(F)*** | 8<br>9 | A<br>A |
| 10 | Balfour Road at Mountain View Drive[4] | SSSC | AM<br>PM | 1 (36)<br>4 **(107)** | A (E)<br>A **(F)** | 5 **(168)**<br>**41 (>180)** | A **(F)**<br>**E (F)** | 1 (19)<br>1 (30) | A (C)<br>A (D) |
| 11 | Balfour Road at Foothill Drive/E Country Club Drive | Signal | AM<br>PM | 49<br>33 | D<br>C | ***81***<br>***62*** | ***F***<br>***E*** | 55<br>42 | D<br>D |
| 13 | Balfour Road at Eagle Rock Way/Cortona Way | Signal | AM<br>PM | 33<br>**68** | D<br>**E** | 33<br>***76*** | D<br>***E*** | 33<br>53 | C<br>D |

Notes: **Bold** text indicates potentially unacceptable intersection operations. ***Bold Italics*** indicates potentially significant impact.
1. Signal = Signalized intersection; SSSC = Side-street stop-controlled intersections; traffic on the main street does not stop while traffic on the side-street is controlled by a stop sign.
2. Average intersection delay is calculated for all signalized intersections using the 2010 HCM method for vehicles.
3. For SSSC intersections, average delay or LOS is listed first followed by the delay or LOS for the worst approach in parentheses.
Source: Fehr & Peers, 2019.

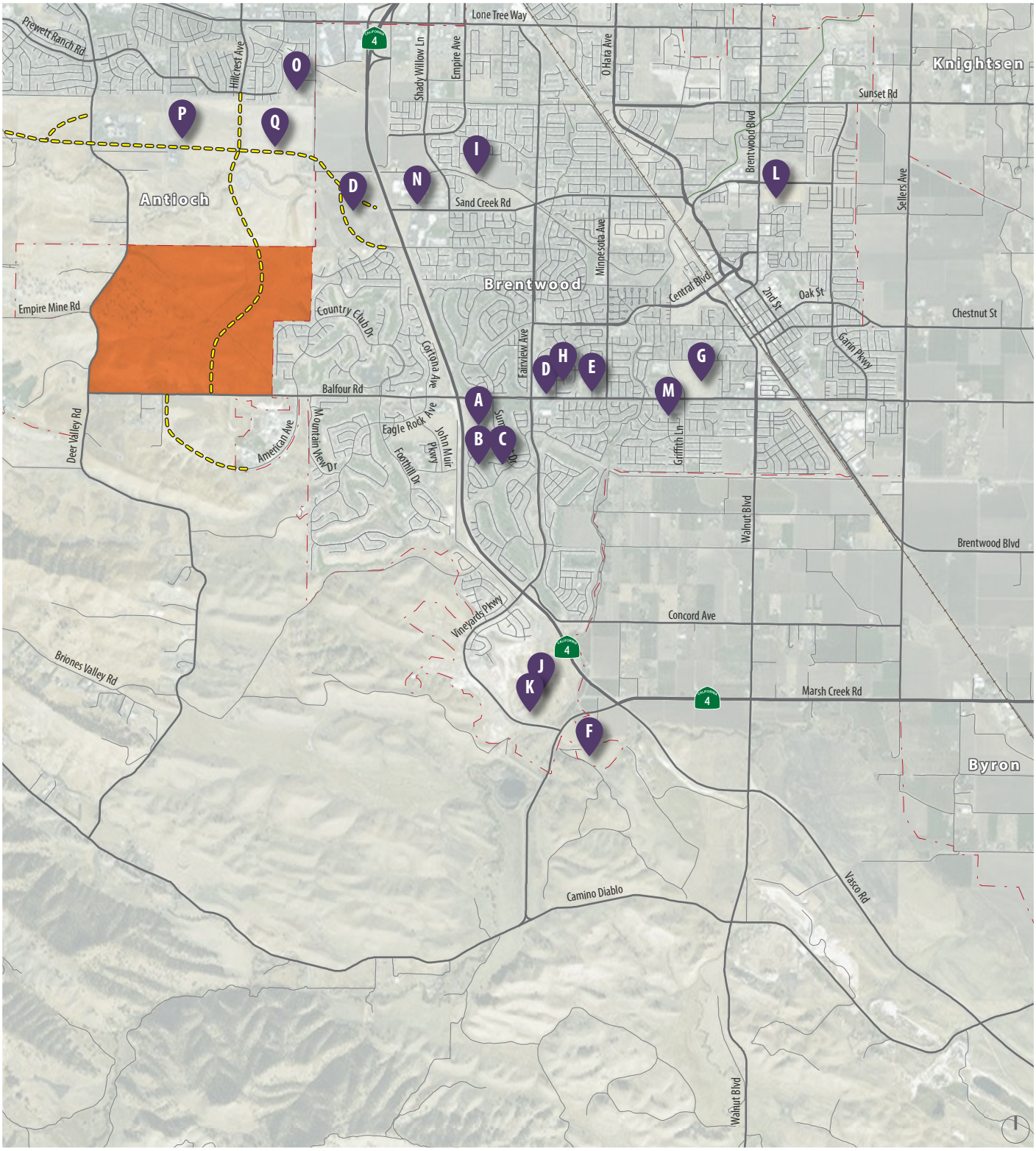
# 5. NEAR-TERM TRAFFIC CONDITIONS

The near-term scenario reflects existing traffic counts plus traffic from approved and pending developments that are expected to be completed and occupied in the next 5 to 10 years. Near-term conditions without and with the project are evaluated. The analysis of cumulative conditions (see Chapter 6 for details) considers development within the City of Brentwood as described in the General Plan and recently approved Priority Area One Specific Plan.

## NEAR-TERM FORECASTS

The available *City of Brentwood Project Status Report* (December 2018) at the time this project analysis commenced were reviewed to identify developments to include in this scenario. Copies of these reports are provided in **Appendix E**. Additionally, projects in Antioch were also reviewed based on the Development Project Pipeline report. The approved and pending developments that could generate additional traffic through the study area are summarized in **Table 7** and their locations shown on **Figure 9**.

Near-Term project vehicle trip generation was estimated using trip generation rates and equations for the proposed land uses from ITE's *Trip Generation Manual* (10th Edition). The results are provided in **Appendix F**. Traffic generated by approved and pending developments was added to the existing traffic volumes, which were also increased by 5 percent to account for development projects outside the immediate study area that could increase traffic through the study area, to provide the basis for the Near-Term without Project analysis, as presented on **Figure 10**. Project traffic volumes from Figure 6 were added to the Near-Term without Project forecasts to estimate Near-Term with Project volumes at the study intersections, as presented on **Figure 11**, which also considers the expected traffic shifts associated with the American Avenue extension.




**LEGEND**

Project Site

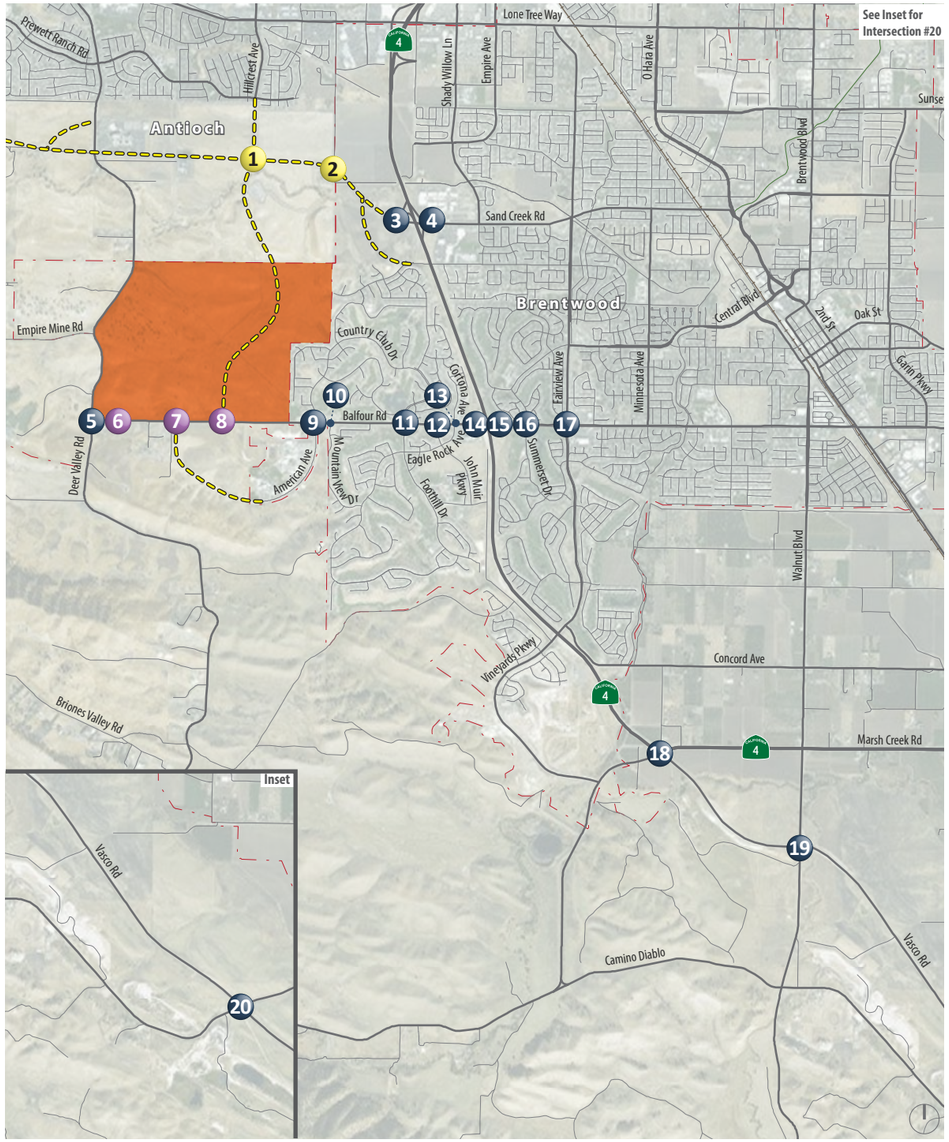
X Approved/Pending Project
*(See Table 7 for details)*

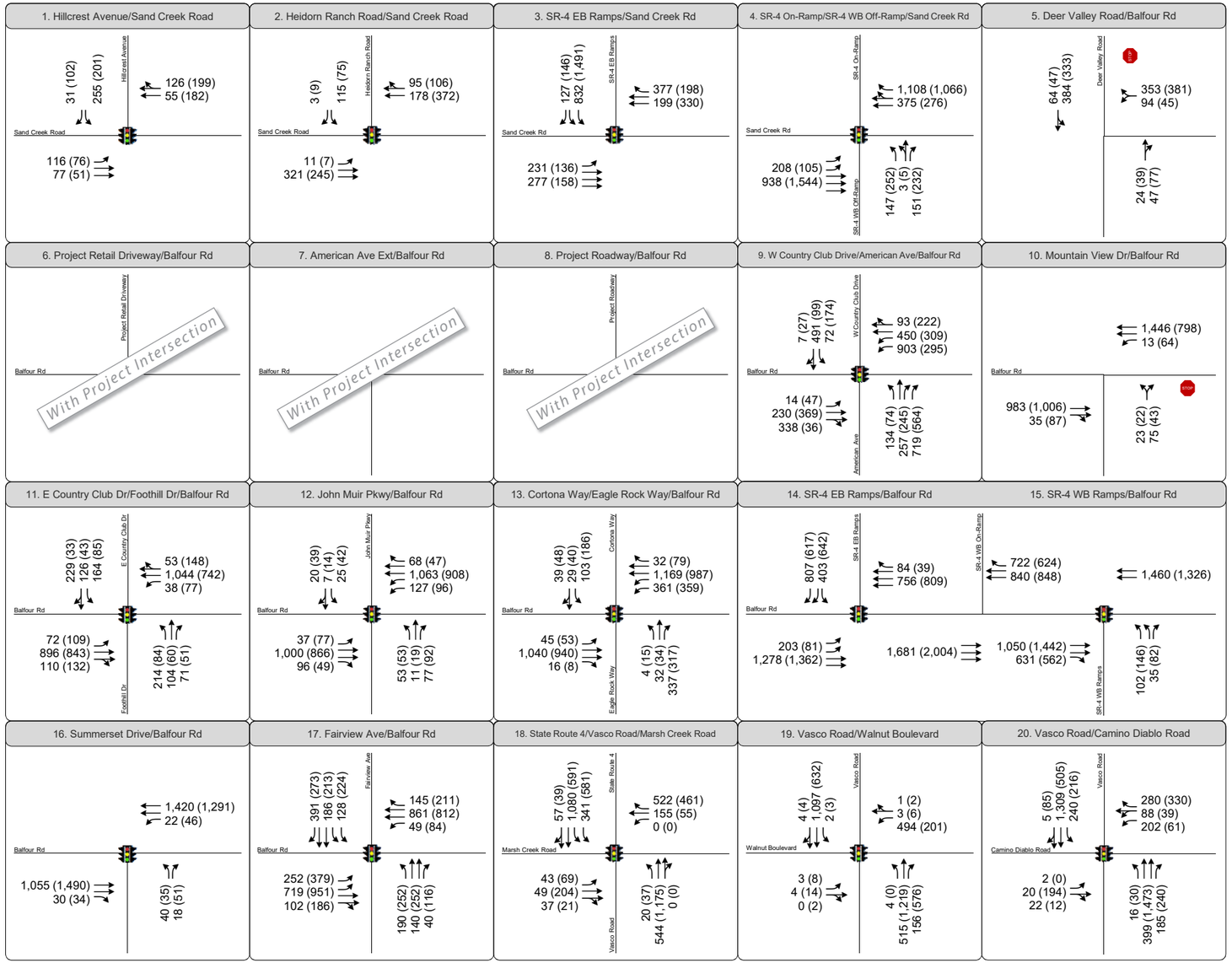
Planned Future Roadway

Figure 9

## Approved and Pending Project Locations

WC16-3328_9_AppNTProj




XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

STOP Stop Sign

Project Site

# Study Intersection

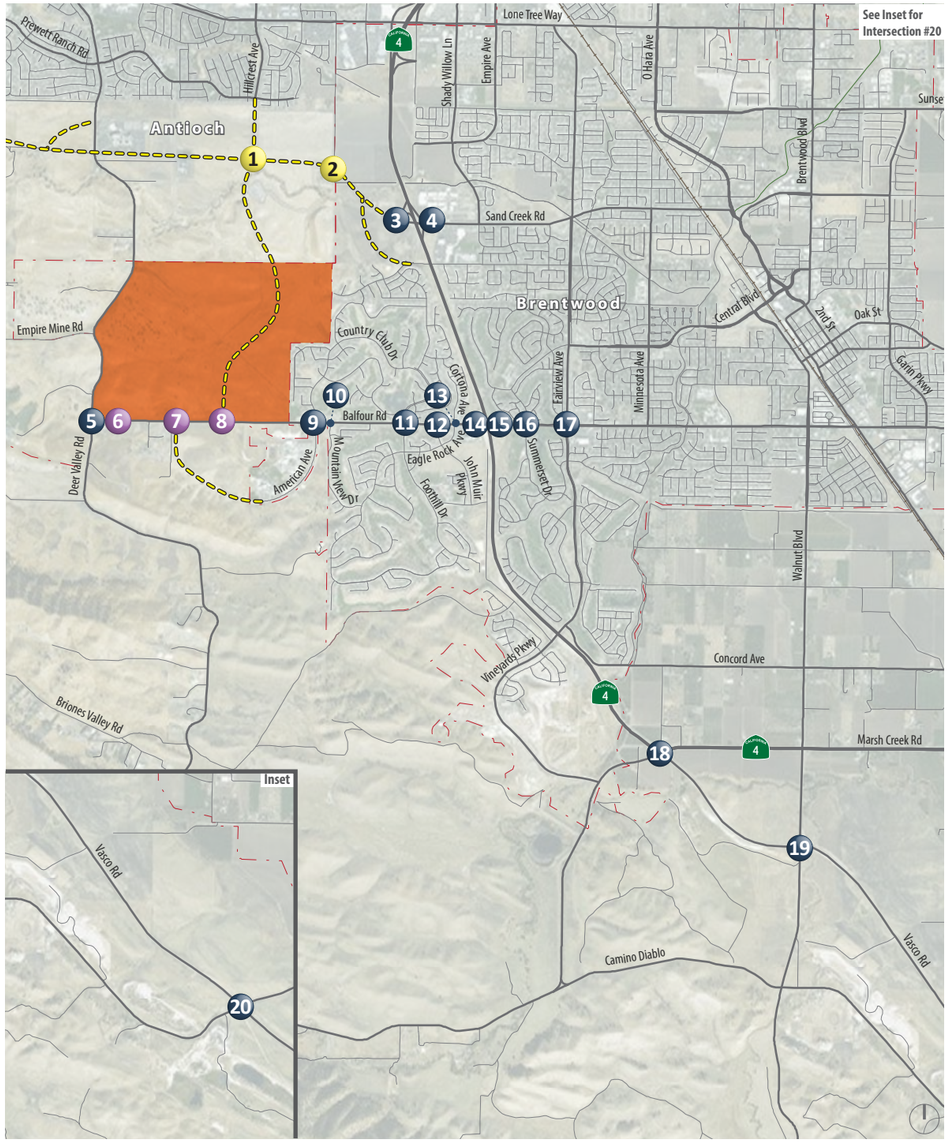
# With Project Study Intersection

# Future Study Intersection

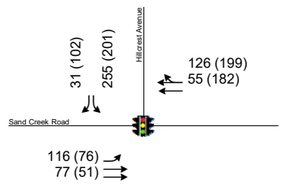
Planned Future Roadway

Figure 10

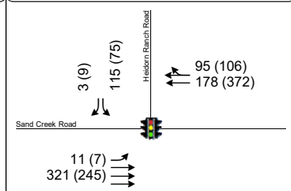
## Near-Term without Project Peak Hour
## Intersection Traffic Volumes, Lane Configurations and Traffic Controls



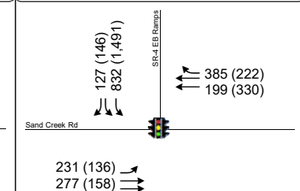

1. Hillcrest Avenue/Sand Creek Road



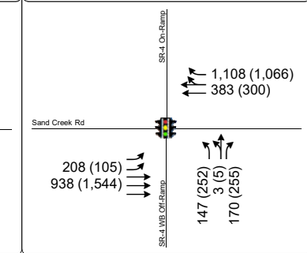

2. Heidorn Ranch Road/Sand Creek Road



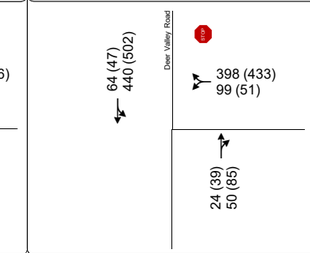

3. SR-4 EB Ramps/Sand Creek Rd



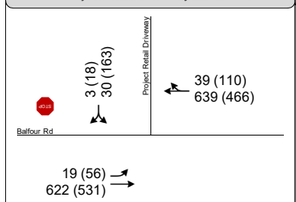

4. SR-4 On-Ramp/SR-4 WB Off-Ramp/Sand Creek Rd



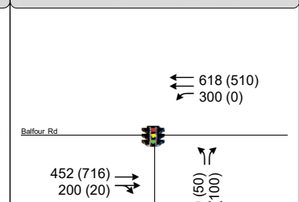

5. Deer Valley Road/Balfour Rd



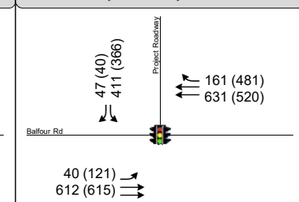

6. Project Retail Driveway/Balfour Rd



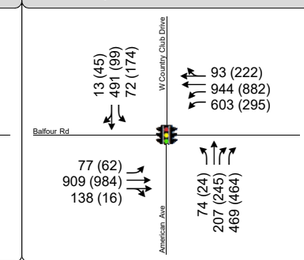

7. American Ave Ext/Balfour Rd



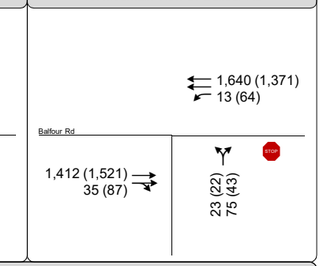

8. Project Roadway/Balfour Rd



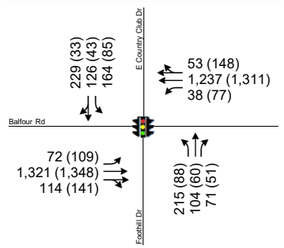

9. W Country Club Drive/American Ave/Balfour Rd



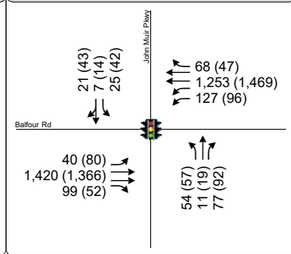

10. Mountain View Dr/Balfour Rd



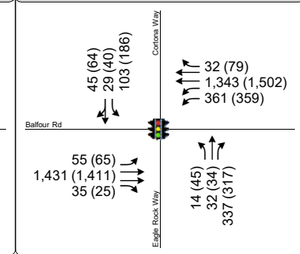

11. E Country Club Dr/Foothill Dr/Balfour Rd




12. John Muir Pkwy/Balfour Rd

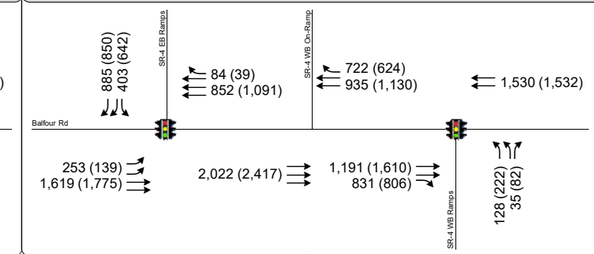



13. Cortona Way/Eagle Rock Way/Balfour Rd

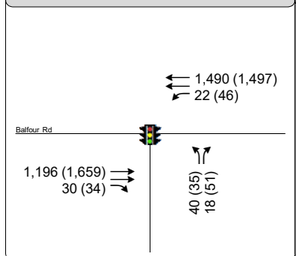



14. SR-4 EB Ramps/Balfour Rd

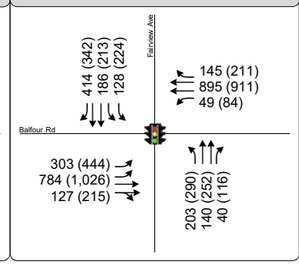
15. SR-4 WB Ramps/Balfour Rd



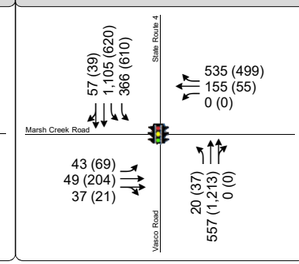

16. Summerset Drive/Balfour Rd



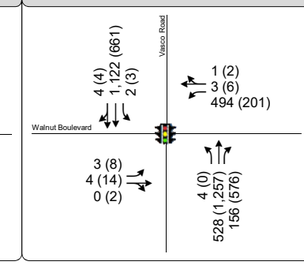

17. Fairview Ave/Balfour Rd



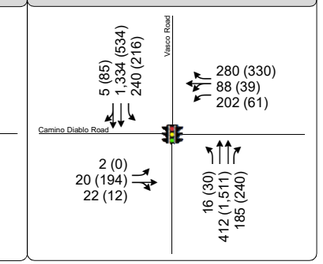

18. State Route 4/Vasco Road/Marsh Creek Road




19. Vasco Road/Walnut Boulevard




20. Vasco Road/Camino Diablo Road




XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

Stop Sign

Project Site

Study Intersection

With Project Study Intersection

Future Study Intersection

Planned Future Roadway

Figure 11

## Near-Term with Project Peak Hour
## Intersection Traffic Volumes, Lane Configurations and Traffic Controls

**TABLE 7**
**APPROVED AND PENDING PROJECTS SUMMARY**

| Map Location | Project Name | Size | Land Use | Status |
|---|---|---|---|---|
| A | Brentwood Country Club (TSM 9360/DR 14-001) | 63 active adult residences | Single Family Homes | Approved |
| B | Brentwood County Club (TSM 9486/DR 18-008) | 24 single family homes | Single Family Homes | Approved |
| C | Merrill Gardens (DR18-003) | 121 unit memory care facility | Memory Care Facility | Approved |
| D | Bridle Gate (TSM 8506/DR17-007) – | 252 single family homes, 258 multi-family homes, commercial; elementary school | Mixed Use | Proposed |
| E | Catchings Ranch (TSM 9424/DR 16-002) | 24 units | Single Family Homes | Under Construction |
| F | Cowell Ranch (TSM 9452/DR 17-002) – | 140 units | Active Adult Attached Homes | Approved |
| G | Villagio (TSM 9173/DR 0714) – | 160 units | Single Family Homes | Under Construction |
| H | The Shops at Fairview (DR 04-34) | 30,894 square feet remaining on commercial entitlement | General Commercial | Partially Constructed |
| I | Parkside Villas (TSM 8982) | 37 units | Single Family Homes | Approved |
| J | Pioneer Square (TSM 9451/DR 16-020) | 72 units | Active Adult Attached Homes | Under Construction |
| K | Trilogy at the Vineyards (TSM 8796/DR06-02) – 1,600 active adult homes | 1,600 units | Active Adult Homes | Under Construction |
| L | Sciortino Ranch (9356) | 326 units | Single Family Homes | Under Construction |
| M | City Block (DR 05-27) | 7,001 square feet remaining on commercial entitlement | General Commercial | Partially Constructed |

**TABLE 7**
**APPROVED AND PENDING PROJECTS SUMMARY**

| Map Location | Project Name | Size | Land Use | Status |
|---|---|---|---|---|
| N | Anden Apartments (DR 19-007) | 320 Apartments | Multi-Family | Pending |
| O | Heidorn Village (City of Antioch) | 117 units | Single Family Homes | Approved |
| P | Aviano (City of Antioch) | 533 Units | Single Family Homes | Approved |
| Q | The Promenade, Vineyards at Sand Creek (City of Antioch) | 641 Units | Single Family Homes | Approved |
| R | Contra Costa County Community College District | 5,000 students | Community College | Under Construction |

Source: *City of Brentwood Project Status Report* (December 2018) and City of Antioch Development Project Pipeline (February 2019).

## NEAR-TERM ROADWAY ASSUMPTIONS

A number of roadway improvements are conditioned on near-term developments and considered in the near-term forecasts, including an extension of Hillcrest Avenue from its current terminus to an extension of Sand Creek Road, improvements to Heidorn Ranch Road, and the extension of Sand Creek Road from State Route 4 in the east to a new terminus by the Dozier-Libbey Medical High School.

For the extension of Sand Creek Road, no direct through travel would be permitted between Deer Valley Road and Hillcrest Avenue; however, vehicles would be able to travel through Prewett Ranch Drive to Hillcrest Avenue to Sand Creek Road to access destinations to the east.

No project connection to Sand Creek Road from Hillcrest Avenue is assumed in the analysis of near-term conditions as the portion of Hillcrest Avenue between Sand Creek Road and the project site would not be constructed until adjacent development occurs. Roadway improvements that would be constructed as part of the project were described in the previous chapter.

# ANALYSIS OF NEAR-TERM CONDITIONS

## INTERSECTION OPERATIONS

Near-Term conditions were evaluated using the methods described in Chapter 1, with the analysis results presented in **Table 8** based on the traffic volumes, lane configurations and traffic control presented on Figure 10 and Figure 11. For the analysis of near-term conditions, signal timings, peak hour factors, pedestrian and bicycle activity, as well as truck percentages were unchanged from the existing condition.

In the near-term condition, the Balfour Road at American Avenue/West Country Club Drive, Balfour Road at Eagle Rock Way/Cortona Way, and Balfour Road at Fairview Avenue intersections are projected to operate at a deficient LOS E during at least one peak hour. The side-street movement at the Balfour Road at Mountain View Drive also operates at a deficient LOS F during the evening peak hour.

The addition of project traffic and associated roadway improvements would improve the operation of the Balfour Road at American Avenue/West Country Club Drive intersection as the construction of the American Avenue extension would shift traffic away from the intersection.

The project would worsen or result in deficient operations at the following intersections:

- Balfour Road at Deer Valley Road
- Balfour Road at Commercial Entrance
- Balfour Road at Mountain View Drive
- Balfour Road at Foothill Drive/E Country Club Drive
- Balfour Road at Eagle Rock Way/Cortona Way
- Balfour Road at State Route 4 Eastbound Ramps
- Balfour Road at Fairview Avenue

## SIGNAL WARRANTS

The peak hour volume warrant was evaluated under near-term conditions. The unsignalized Balfour Road at Mountain View Drive intersection is not projected to meet signal warrants in the near-term condition, without or with the addition of Project traffic. Signal warrants would be satisfied at the and Balfour Road at Deer Valley Road intersection prior to the addition of project traffic. Signal warrants would be met at the proposed project roadways to Balfour Road, including the residential roadway that is planned to be signalized as part of the project and the commercial driveway.

**TABLE 8**
**NEAR-TERM CONDITIONS PEAK HOUR INTERSECTION LOS SUMMARY**

| | Intersection | Control[1] | Peak Hour | Near-term Without Project | | Near-Term With Project | | Significant Impact? |
|---|---|---|---|---|---|---|---|---|
| | | | | Delay[2, 3] | LOS | Delay[2, 3] | LOS | |
| 1 | Sand Creek Road at Hillcrest Avenue | Signal | AM<br>PM | 36<br>30 | D<br>C | 36<br>30 | D<br>C | No |
| 2 | Sand Creek Road at Heidorn Ranch Road | Signal | AM<br>PM | 24<br>21 | C<br>C | 24<br>21 | C<br>C | No |
| 3 | Sand Creek Road at State Route 4 Eastbound Ramps | Signal | AM<br>PM | 38<br>21 | D<br>C | 38<br>23 | D<br>C | No |
| 4 | Sand Creek Road at State Route 4 Westbound Ramps | Signal | AM<br>PM | 12<br>12 | B<br>B | 13<br>12 | B<br>B | No |
| 5 | Balfour Road at Deer Valley Road | SSSC | AM<br>PM | 20 (36)<br>11 (17) | C (E)<br>B (C) | ***40 (80)***<br>24 (49) | ***E (F)***<br>D (E) | ***Yes***; peak hour signal warrants met. |
| 6 | Balfour Road at Commercial Entrance | SSSC | AM<br>PM | (With Project Intersection) | | 1 (36)<br>18 ***(132)*** | A (E)<br>C ***(F)*** | Yes; peak hour signal warrants met. |
| 7 | Balfour Road at American Avenue Extension | Signal | AM<br>PM | (With Project Intersection) | | 17<br>6 | B<br>A | No |
| 8 | Balfour Road at Main Project Entry | Signal | AM<br>PM | (With Project Intersection) | | 13<br>14 | B<br>B | No |
| 9 | Balfour Road at American Avenue/W Country Club Drive | Signal | AM<br>PM | **61**<br>37 | **E**<br>D | **59**<br>48 | **E**<br>D | No; decreases delay as compared to without project condition. |
| 10 | Balfour Road at Mountain View Drive[4] | SSSC | AM<br>PM | 2 (47)<br>7 **(>180)** | A (E)<br>A **(F)** | 8 **(>180**<br>**81 (>180)** | A **(F)**<br>**F (F)** | **Yes**; results in overall LOS F operations although peak hour signal warrants not met |
| 11 | Balfour Road at Foothill Drive/E Country Club Drive | Signal | AM<br>PM | 52<br>36 | D<br>D | ***92***<br>***75*** | ***F***<br>***E*** | **Yes**; results in LOS E or F |
| 12 | Balfour Road at John Muir Parkway | Signal | AM<br>PM | 24<br>21 | C<br>C | 27<br>30 | C<br>C | No |
| 13 | Balfour Road at Eagle Rock Way/Cortona Way | Signal | AM<br>PM | 37<br>**74** | D<br>**E** | 41<br>***89*** | D<br>***F*** | **Yes**; average delay increase of more than 5-seconds |

**TABLE 8**
**NEAR-TERM CONDITIONS PEAK HOUR INTERSECTION LOS SUMMARY**

| | Intersection | Control[1] | Peak Hour | Near-term Without Project | | Near-Term With Project | | Significant Impact? |
|---|---|---|---|---|---|---|---|---|
| | | | | Delay[2, 3] | LOS | Delay[2, 3] | LOS | |
| 14 | Balfour Road at State Route 4 Eastbound Ramps | Signal | AM<br>PM | 31<br>33 | C<br>C | 32<br>***71*** | C<br>***E*** | **Yes**, results in LOS E operations. |
| 15 | Balfour Road at State Route 4 Westbound Ramps | Signal | AM<br>PM | 25<br>22 | C<br>C | 25<br>18 | C<br>B | No |
| 16 | Balfour Road at Summerset Drive | Signal | AM<br>PM | 5<br>7 | A<br>A | 5<br>7 | A<br>A | No |
| 17 | Balfour Road at Fairview Avenue | Signal | AM<br>PM | 33<br>**57** | C<br>**E** | 36<br>***75*** | D<br>***E*** | **Yes**; average delay increase of more than 5-seconds |
| 18 | Marsh Creek Road/State Route 4 at Vasco Road | Signal | AM<br>PM | 22<br>30 | C<br>C | 23<br>31 | C<br>C | No |
| 19 | Walnut Boulevard at Vasco Road | Signal | AM<br>PM | 22<br>26 | C<br>C | 30<br>37 | C<br>D | No |
| 20 | Camino Diablo Road at Vasco Road | Signal | AM<br>PM | 28<br>44 | C<br>D | 28<br>46 | C<br>D | No |

Notes: **Bold** text indicates potentially unacceptable intersection operations. ***Bold Italics*** indicates potentially significant impact.
1. Signal = Signalized intersection; SSSC = Side-street stop-controlled intersections; traffic on the main street does not stop while traffic on the side-street is controlled by a stop sign.
2. Average intersection delay is calculated for all signalized intersections using the 2010 HCM method for vehicles.
3. For SSSC intersections, average delay or LOS is listed first followed by the delay or LOS for the worst approach in parentheses.
4. During the morning peak hour around school bell times, signage prohibits the northbound left-turn movement from Mountain View Drive to Balfour Road.
Source: Fehr & Peers, 2019.

# NEAR-TERM CONDITIONS IMPACTS AND MITIGATION

***Impact Statement 5:*** Intersection 5 – Balfour Road at Deer Valley Road

The addition of project-generated vehicle trips during the AM peak hour would worsen conditions for side-street movements to LOS F. Peak hour signal warrants are also met prior to the addition of project traffic. Based on the significance criteria, this is considered a ***significant*** impact.

> ***Mitigation Measure 5:*** The project applicant shall pay their fair share[5] towards the signalization of this intersection in conjunction with other planned improvements, which include the construction of a southbound left-turn lane, as well as separate westbound left and right-turn lanes. These improvements would result in overall acceptable service levels, reducing the project's existing impact to a ***less-than-significant*** level, as shown in **Table 9.** Fifty percent of this improvement project is included in the City's Development Impact Fee, and payment of the City's fee would account for a portion of the fair-share contribution. An additional fair-share contribution may be required to fully mitigate the project's impact.

***Impact Statement 6:*** Intersection 6 – Balfour Road at Commercial Entrance

> The Commercial Project Driveway on Balfour Road is projected to operate at an overall acceptable service level. However, vehicles turning from the site to Balfour Road could experience LOS F operations during the PM peak hour and peak hour signal warrants are expected to be satisfied, depending on the ultimate development that is proposed for the site. Based on the significance criteria, this impact is considered ***significant***.
>
> > Mitigation Measure 6: Design the commercial access intersection to provide acceptable access. Options could include reducing the size of the commercial development, signalizing the driveway, or widening Balfour Road to provide two through lanes in both direction to Deer Valley Road. **Table 9** shows the level of service with signalization, separate left and right-turn lanes from the site to Balfour Road, a westbound right-turn only lane and an eastbound left-turn lane, with one through lane in each direction on Balfour Road. Implementation of this measure would reduce the impact to a ***less-than-significant*** level.

[5] The responsibility for improvements to this intersection are shared equally by the City of Antioch and the City of Brentwood.

***Impact Statement 7:*** Intersection 10 – Mountain View Drive at Balfour Road

Through traffic on Balfour Road at Mountain View Drive at Balfour Road travels without delay, with delay experienced for vehicles turning from Mountain View Drive (both right-turning and left-turning vehicles) to Balfour Road, and for vehicles turning left from Balfour Road to Mountain View Drive. During the morning peak hour, the northbound left-turn movement is prohibited for an hour around the bell times of the near-by schools. Peak hour signal warrants are not met at the intersection in the near-term condition.

The addition of project traffic through the intersection would further worsen LOS F conditions for the side-street movement during the PM peak hour, and result in an average LOS of F and result in LOS F operations during the morning peak hour. Peak hour signal warrants would not be satisfied with the addition of project traffic. Based on the significance criteria, this impact is ***significant***.

Mitigation Measure 7: Prohibiting the northbound left-turn from Mountain View Drive to Balfour Road would result in acceptable operations for the side-street movement, reducing the impact to a ***less-than-significant*** level. However, that restriction could result in circuitous travel for the residents of that neighborhood at all times of day; during periods of peak delay for the northbound left-turn movement, drivers can opt to make a right-turn to Balfour Road.

Additionally, in the cumulative condition when project access is also provided via the Hillcrest Avenue extension, the intersection continues to operate at an overall acceptable service level with the addition of project traffic.

***Impact Statement 8:*** Intersection 11 – Foothill Drive/East Country Club Drive at Balfour Road

The addition of project-generated vehicle trips would worsen overall LOS D conditions for the intersection to LOS F conditions in the Near-term with Project condition during the morning peak hour and to LOS E conditions during the PM Peak hour. Based on the significance criteria, this is considered a ***significant*** impact.

Mitigation Measure 8: The project applicant will work with the City of Brentwood to retime and coordinate traffic signal timings on Balfour Road between the project roadway and Fairview Avenue. Optimization of the signal timings along the Balfour Road corridor, including Foothill Drive/East Country Club Drive at Balfour Road, to better accommodate future travel patterns would result in LOS D operations, as shown in **Table 9**, reducing the project impact to a ***less-than-significant*** level.

Prior to the approval of each tentative tract or parcel map for development within the Project, the Applicant shall have prepared and shall submit to the City a focused transportation study, evaluating the effects of the proposed phase of development at the intersections where impacts were previously identified to determine if the potential significant intersection impact identified above would be triggered by that proposed development, and what signal timing changes would be necessary to achieve acceptable operations along the Balfour Road corridor.

***Impact Statement 9:*** Intersection 13 – Balfour Road at Eagle Rock Way/Cortona Way

The addition of project-generated vehicle trips would worsen overall LOS E conditions in the near-term with project condition to LOS F during PM Peak hour and increase average delay by more than 5-sections. Based on the significance criteria, this is considered a ***significant*** impact.

Mitigation Measure 9: The project applicant will work with the City of Brentwood to retime and coordinate traffic signal timings on Balfour Road between the project roadway and Fairview Avenue. Optimization of the signal timings along the Balfour Road corridor, including Balfour Road at Eagle Rock Way/Cortona Way, to better accommodate future travel patterns would result in LOS E operations but with a delay less than the no project condition, as shown in **Table 9**, reducing the project impact to a ***less-than-significant*** level.

Prior to the approval of each tentative tract or parcel map for development within the Project, the Applicant shall have prepared and shall submit to the City a focused transportation study, evaluating the effects of the proposed phase of development at the intersections where impacts were previously identified to determine if the potential significant intersection impact identified above would be triggered by that proposed development, and what signal timing changes would be necessary to achieve acceptable operations along the Balfour Road corridor.

***Impact Statement 10:*** Intersection 14 – Balfour Road at State Route 4 Eastbound Ramps

The addition of project-generated vehicle trips would result in overall LOS E conditions in the near-term with project condition during PM Peak hour. Based on the significance criteria, this is considered a ***significant*** impact.

Mitigation Measure 10: The project applicant will work with the City of Brentwood and Caltrans to retime and coordinate traffic signal timings on Balfour Road between the

project roadway and Fairview Avenue. Optimization of the signal timings along the Balfour Road corridor, including Balfour Road at State Route 4 Eastbound Ramps, to better accommodate future travel patterns would result in LOS D operations, as shown in **Table 9**, reducing the project impact to a ***less-than-significant*** level.

Prior to the approval of each tentative tract or parcel map for development within the Project, the Applicant shall have prepared and shall submit to the City a focused transportation study, evaluating the effects of the proposed phase of development at the intersections where impacts were previously identified to determine if the potential significant intersection impact identified above would be triggered by that proposed development, and what signal timing changes would be necessary to achieve acceptable operations along the Balfour Road corridor.

As this is a Caltrans controlled intersection and the City cannot require Caltrans to update their signal timings. Therefore, this impact would remain ***significant and unavoidable***.

***Impact Statement 11:*** Intersection 17 – Balfour Road at Fairview Avenue

The addition of project-generated vehicle trips would worsen overall LOS E conditions in the near-term with project condition during PM Peak hour and increase average delay by more than 5-seconds. Based on the significance criteria, this is considered a ***significant*** impact.

Mitigation Measure 11: The project applicant will work with the City of Brentwood to retime and coordinate traffic signal timings on Balfour Road between the project roadway and Fairview Avenue. Optimization of the signal timings along the Balfour Road corridor, including Balfour Road at Fairview Avenue, to better accommodate future travel patterns would result in LOS D operations, as shown in **Table 9**, reducing the project impact to a ***less-than-significant*** level.

Prior to the approval of each tentative tract or parcel map for development within the Project, the Applicant shall have prepared and shall submit to the City a focused transportation study, evaluating the effects of the proposed phase of development at the intersections where impacts were previously identified to determine if the potential significant intersection impact identified above would be triggered by that proposed development, and what signal timing changes would be necessary to achieve acceptable operations along the Balfour Road corridor.

**TABLE 9**
**NEAR-TERM CONDITIONS WITH MITIGATION**
**PEAK HOUR INTERSECTION LOS SUMMARY**

| Intersection | | Control[1] | Peak Hour | Near-term without Project | | Near-term with Project | | Near-term with Project With Mitigation | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Delay[2,3] | LOS | Delay[2,3] | LOS | Delay[2,3] | LOS |
| 5 | Balfour Road at Deer Valley Road | SSSC | AM<br>PM | 20 (36)<br>11 (17) | C (E)<br>B (C) | ***40 (80)***<br>24 (49) | ***E (F)***<br>D (E) | 20<br>30 | B<br>C |
| 6 | Balfour Road at Commercial Entrance | SSSC/ Signal | AM<br>PM | (With Project Intersection) | | 1 (36)<br>18<br>***(132)*** | A (E)<br>C ***(F)*** | 7<br>9 | A<br>A |
| 10 | Balfour Road at Mountain View Drive[4] | SSSC | AM<br>PM | 2 (47)<br>7<br>**(>180)** | A (E)<br>A **(F)** | 8 **(>180**<br>***81***<br>**(>180)** | A **(F)**<br>***F*** **(F)** | 1 (20)<br>1 (36) | A (C)<br>A (E) |
| 11 | Balfour Road at Foothill Drive/E Country Club Drive | Signal | AM<br>PM | 52<br>36 | D<br>D | ***92***<br>***75*** | ***F***<br>***E*** | 55<br>50 | D<br>D |
| 13 | Balfour Road at Eagle Rock Way/Cortona Way | Signal | AM<br>PM | 37<br>**74** | D<br>**E** | 41<br>***89*** | D<br>***F*** | 41<br>**63** | D<br>**E** |
| 14 | Balfour Road at State Route 4 Eastbound Ramps | Signal | AM<br>PM | 31<br>33 | C<br>C | 32<br>***71*** | C<br>***E*** | 32<br>43 | C<br>D |
| 17 | Balfour Road at Fairview Avenue | Signal | AM<br>PM | 33<br>**57** | C<br>**E** | 36<br>***75*** | D<br>***E*** | 36<br>52 | D<br>D |

Notes: **Bold** text indicates potentially unacceptable intersection operations. ***Bold Italics*** indicates potentially significant impact.
1. Signal = Signalized intersection; SSSC = Side-street stop-controlled intersections; traffic on the main street does not stop while traffic on the side-street is controlled by a stop sign.
2. Average intersection delay is calculated for all signalized intersections using the 2010 HCM method for vehicles.
3. For SSSC intersections, average delay or LOS is listed first followed by the delay or LOS for the worst approach in parentheses.
Source: Fehr & Peers, 2019.

# 5. CUMULATIVE TRAFFIC CONDITIONS

This chapter discusses Cumulative traffic conditions both without and with the project. The future conditions analysis considers development within the City of Brentwood as described in the Brentwood General Plan EIR, and supplemented by a check of traffic forecasts for the study area in the 2040 Contra Costa Countywide travel demand model considering development consistent with the City of Brentwood Priority Area One Specific Plan, as well as the approved and pending projects considered in the evaluation of near-term conditions.

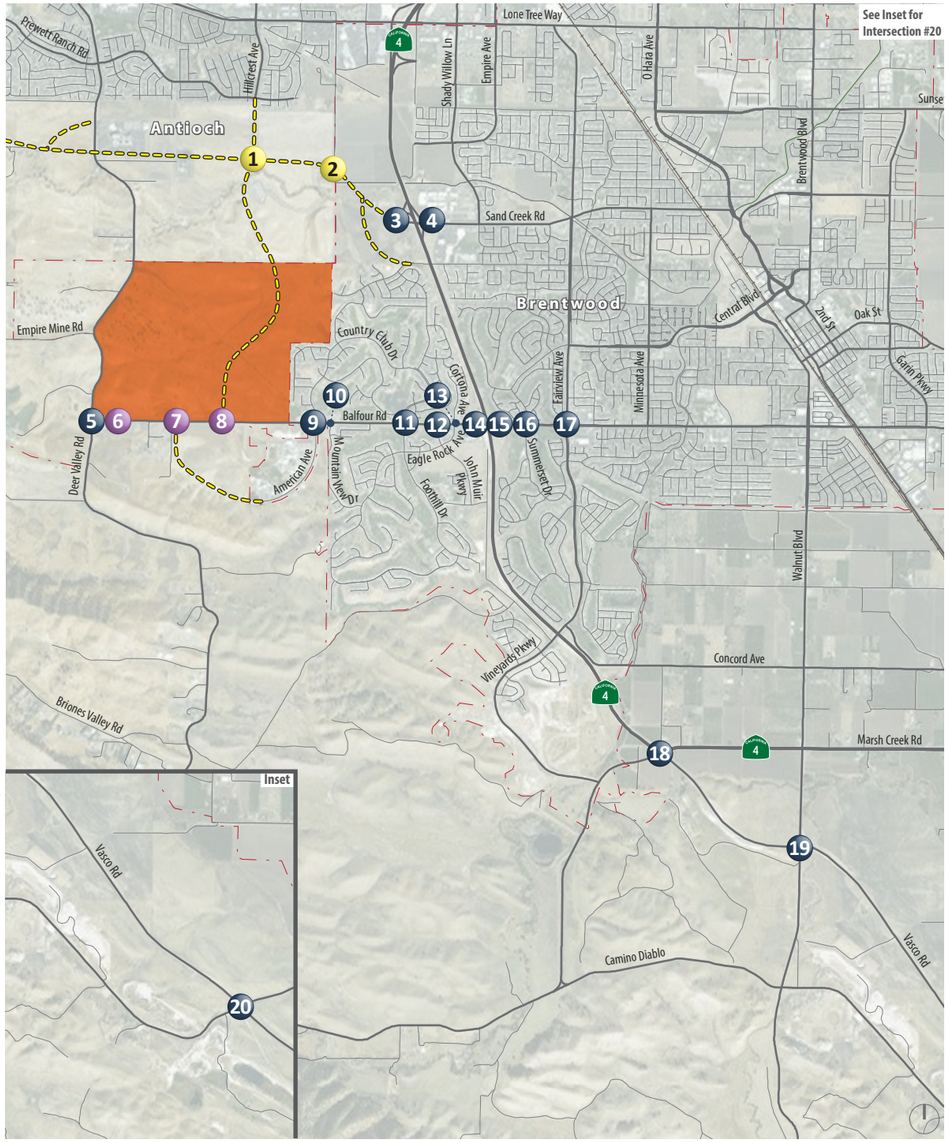
## CUMULATIVE TRAFFIC FORECASTS

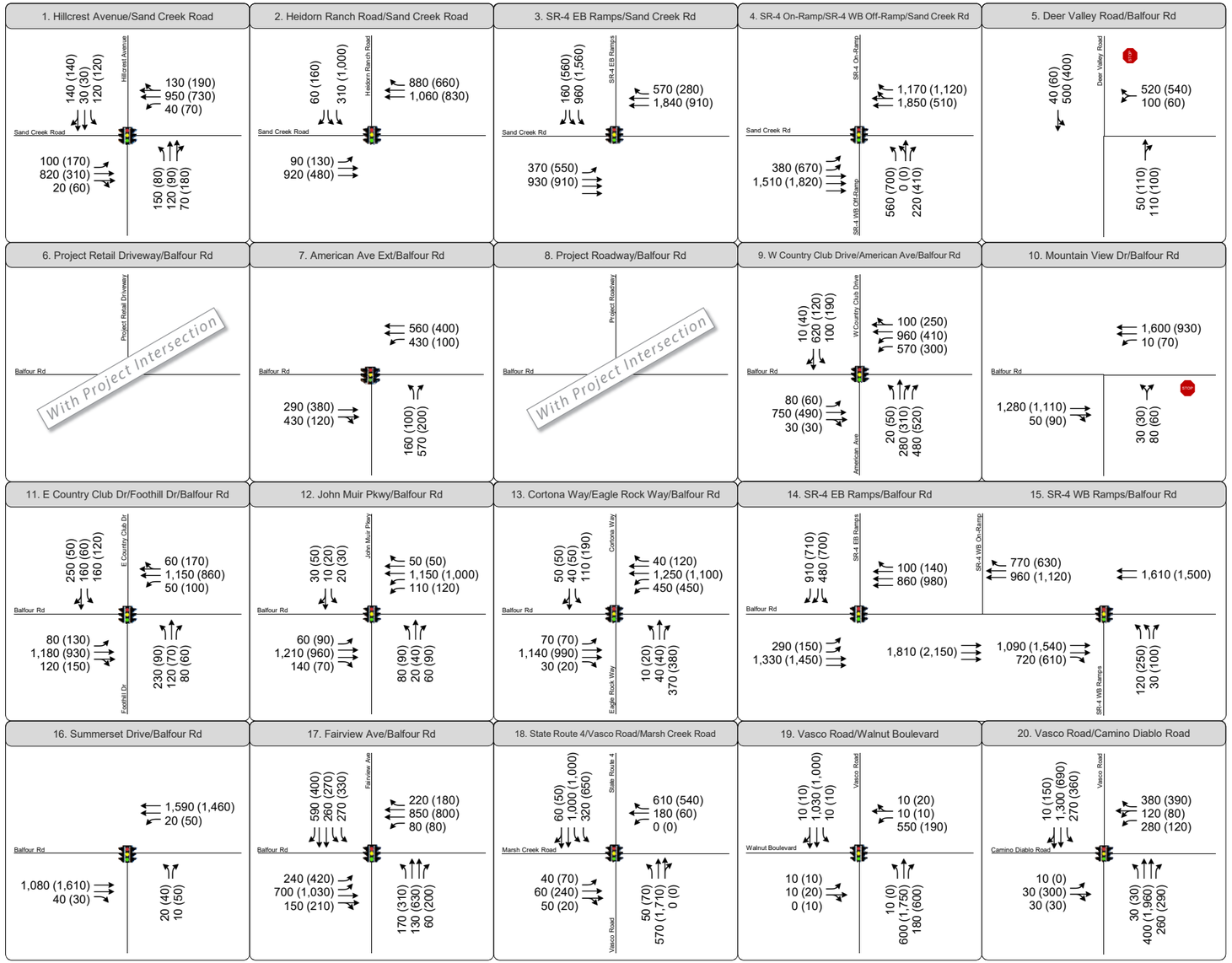
The future conditions analysis considers development within the City of Brentwood as described in the Brentwood General Plan EIR, and supplemented by a check of traffic forecasts for the study area in the 2040 Contra Costa Countywide travel demand model. This scenario considers buildout of Priority Area One consistent with the Specific Plan, as well as completion of the Ranch in Antioch. Vehicle trips generated from the project site under current zoning were subtracted from the base forecasts to develop the without project traffic forecasts.

Minor adjustments were made to the forecasts to balance traffic volumes between closely spaced intersections in the study area. The resulting Cumulative without Project forecasts are presented on **Figure 12**, which are representative of conditions over the next 20 to 25 years. The project volumes from Figure 7 were added to the Cumulative without Project traffic volumes to represent Cumulative with Project conditions, as presented on **Figure 13.**

## CUMULATIVE ROADWAY ASSUMPTIONS

Roadway improvements assumed for the analysis of Cumulative conditions include the widening of State Route 4 to provide two travel lanes in each direction from south of Balfour Road to Marsh Creek Road, completion of the Sand Creek Road extension to Deer Valley Road, connecting to the current terminus of Dallas Ranch Road, and a two lane American Avenue extension to support potential development in the area (the remaining two-lanes would be constructed as part of the project). The extension of Hillcrest Avenue to the project boundary was also assumed as development is contemplated north of the project site. No other roadway improvements were assumed in the study area for the analysis of cumulative conditions.




XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

STOP Stop Sign

Project Site

# Study Intersection

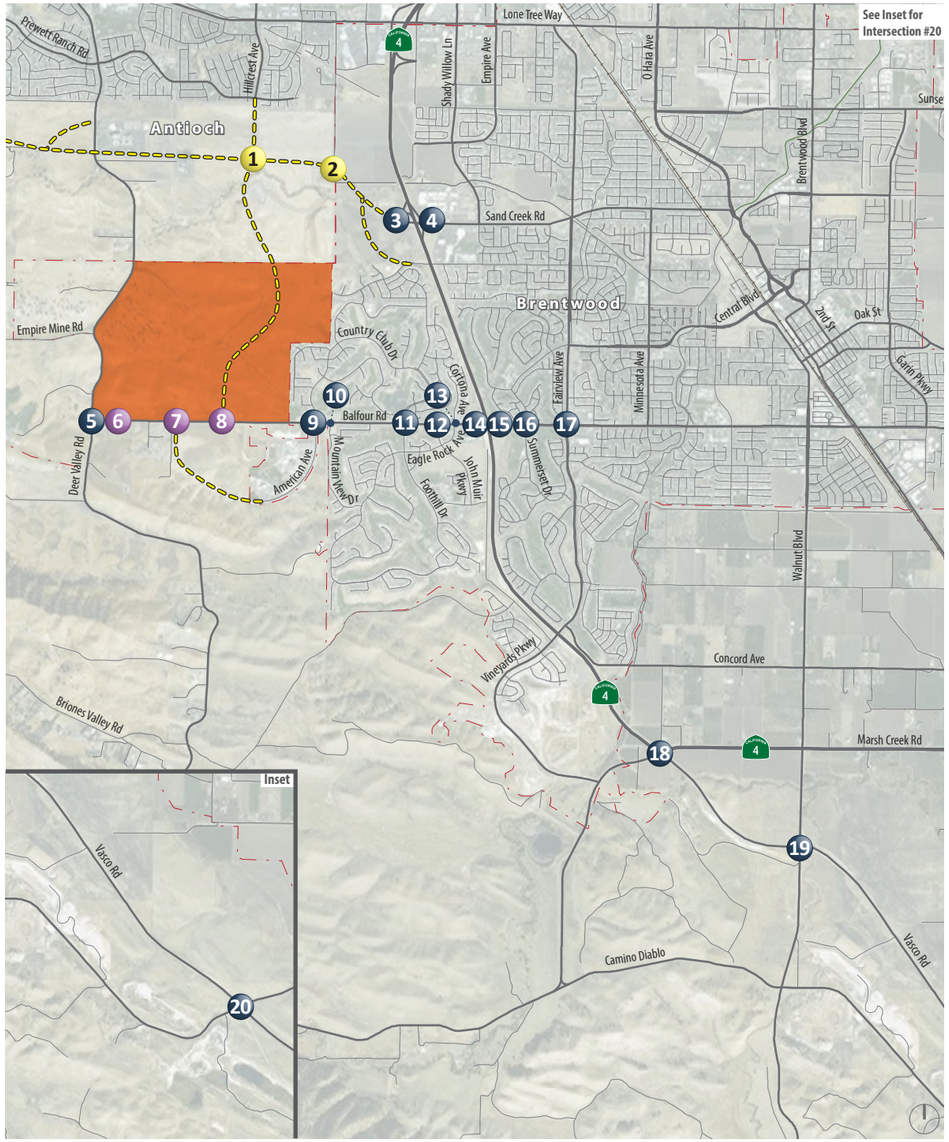
# With Project Study Intersection

# Future Study Intersection

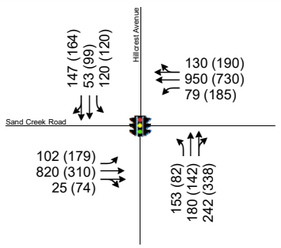
Planned Future Roadway

Figure 12

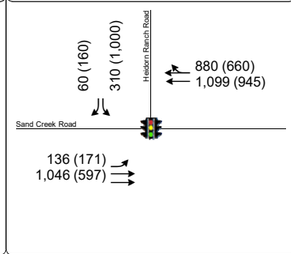
## Cumulative without Project Peak Hour
## Intersection Traffic Volumes, Lane Configurations and Traffic Controls



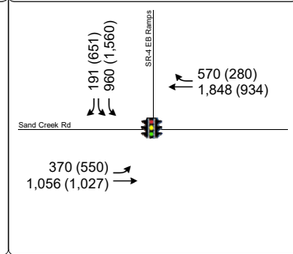

1. Hillcrest Avenue/Sand Creek Road



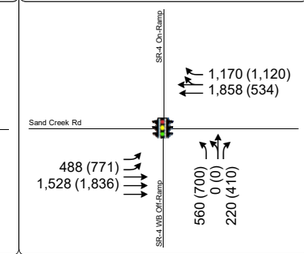

2. Heidorn Ranch Road/Sand Creek Road



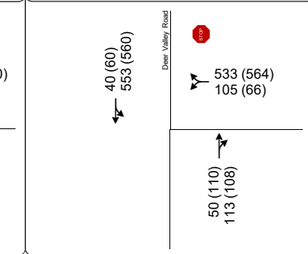

3. SR-4 EB Ramps/Sand Creek Rd



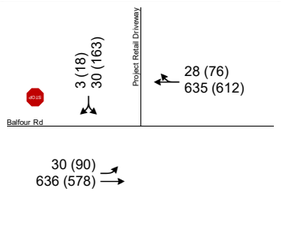

4. SR-4 On-Ramp/SR-4 WB Off-Ramp/Sand Creek Rd



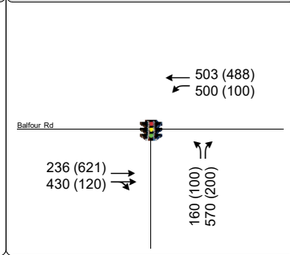

5. Deer Valley Road/Balfour Rd



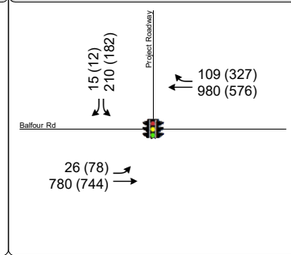

6. Project Retail Driveway/Balfour Rd



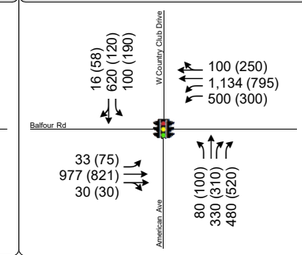

7. American Ave Ext/Balfour Rd



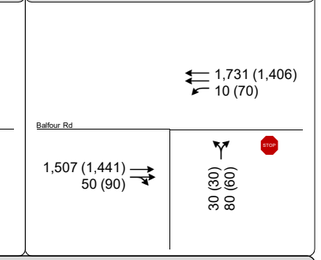

8. Project Roadway/Balfour Rd



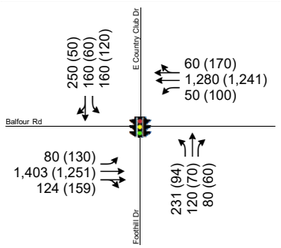

9. W Country Club Drive/American Ave/Balfour Rd



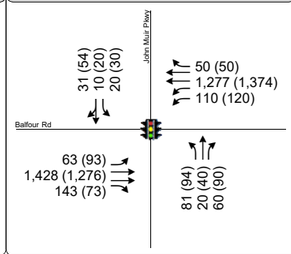

10. Mountain View Dr/Balfour Rd



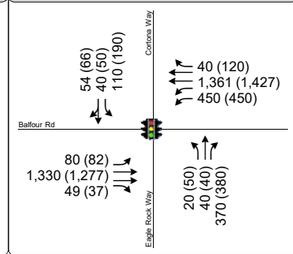

11. E Country Club Dr/Foothill Dr/Balfour Rd



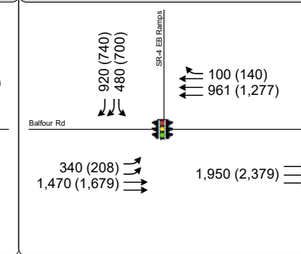

12. John Muir Pkwy/Balfour Rd



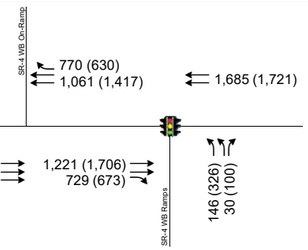

13. Cortona Way/Eagle Rock Way/Balfour Rd



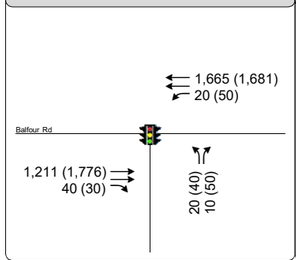

14. SR-4 EB Ramps/Balfour Rd



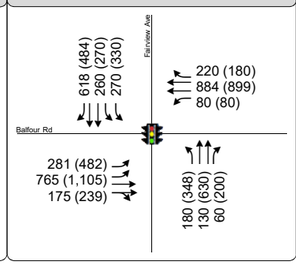

15. SR-4 WB Ramps/Balfour Rd



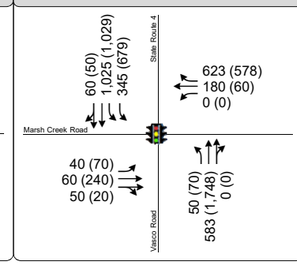

16. Summerset Drive/Balfour Rd



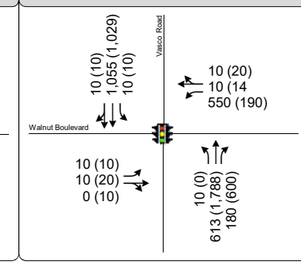

17. Fairview Ave/Balfour Rd



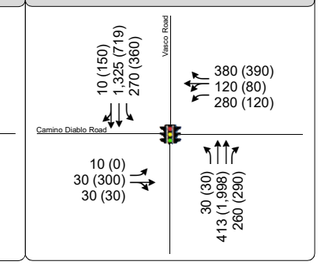

18. State Route 4/Vasco Road/Marsh Creek Road




19. Vasco Road/Walnut Boulevard




20. Vasco Road/Camino Diablo Road




XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

STOP Stop Sign

Project Site

# Study Intersection

# With Project Study Intersection

# Future Study Intersection

Planned Future Roadway

Figure 13

## Cumulative with Project Peak Hour Intersection Traffic Volumes, Lane Configurations and Traffic Controls

# ANALYSIS OF CUMULATIVE CONDITIONS

## INTERSECTION OPERATIONS

Cumulative without and with Project conditions were evaluated using the methods described in Chapter 1. For the analysis of cumulative conditions, pedestrian, bicycle and heavy vehicle volumes were left unchanged from the analysis of existing condition. Peak hour factors were increased to 0.95 if the existing peak hour factor was less than 0.95, and signal timings were optimized reflecting that signal timings are routinely adjusted to better accommodate changing travel patterns. The same signal timings were used for the analysis of without and with project conditions. The analysis results are presented in **Table 14**, based on the traffic volumes presented on Figures 12 and 11.

In the cumulative condition, the following intersections are projected to operate at deficient service levels during at least one peak hour:

- Sand Creek Road at State Route 4 Eastbound Ramp
- Sand Creek Road at State Route 4 Westbound Ramp
- Balfour Road at Deer Valley Road
- Balfour Road at Mountain View Drive (side-street movement)
- Balfour Road at Fairview Avenue
- Walnut Boulevard at Vasco Road
- Camino Diablo Road at Vasco Road

The addition of project traffic would worsen the operation of the above intersections and could result in deficient operations at the following intersections:

- Balfour Road at Commercial Entrance

Although the following intersections operate at a deficient LOS in the cumulative condition prior to the addition of project traffic, the project would not increase delay by more than 5-seconds and the impact is considered less than significant at these locations:

- Sand Creek Road at State Route 4 Eastbound Ramp
- Sand Creek Road at State Route 4 Westbound Ramp
- Walnut Boulevard at Vasco Road
- Camino Diablo Road at Vasco Road

**TABLE 10**
**CUMULATIVE CONDITIONS PEAK HOUR INTERSECTION LOS SUMMARY**

| Intersection | | Control[1] | Peak Hour | Cumulative Without Project | | Cumulative With Project | | Significant Impact? |
|---|---|---|---|---|---|---|---|---|
| | | | | Delay[2, 3] | LOS | Delay[2, 3] | LOS | |
| 1 | Sand Creek Road at Hillcrest Avenue | Signal | AM<br>PM | 43<br>44 | D<br>D | 45<br>50 | D<br>D | No |
| 2 | Sand Creek Road at Heidorn Ranch Road | Signal | AM<br>PM | 13<br>23 | B<br>C | 14<br>26 | B<br>C | No |
| 3 | Sand Creek Road at State Route 4 Eastbound Ramps | Signal | AM<br>PM | **94**<br>**106** | **F**<br>**F** | **94**<br>**110** | **F**<br>**F** | No; average delay increase of less than 5-seconds |
| 4 | Sand Creek Road at State Route 4 Westbound Ramps[4] | Signal | AM<br>PM | **133.6**<br>44 | **F**<br>D | **138.5**<br>48 | ***F***<br>D | No; average delay increase of less than 5-seconds |
| 5 | Balfour Road at Deer Valley Road | SSSC | AM<br>PM | **> 50 (>180)**<br>**37 (72)** | **F (F)**<br>**E (F)** | ***> 50 (>180)***<br>***> 50 (>180)*** | ***F (F)***<br>***F (F)*** | **Yes**; peak hour signal warrants met |
| 6 | Balfour Road at Commercial Entrance | SSSC | AM<br>PM | (With Project Intersection) | | 1 (35)<br>***40 (> 180)*** | A (D)<br>***E (F)*** | **Yes**; peak hour signal warrants met |
| 7 | Balfour Road at American Avenue Extension | Signal | AM<br>PM | 34<br>9 | C<br>A | 37<br>9 | D<br>A | No |
| 8 | Balfour Road at Main Project Entry | Signal | AM<br>PM | (With Project Intersection) | | 9<br>8 | A<br>A | No |
| 9 | Balfour Road at American Avenue/W Country Club Drive | Signal | AM<br>PM | 48<br>32 | D<br>C | 51<br>41 | D<br>D | No |
| 10 | Balfour Road at Mountain View Drive[5] | SSSC | AM<br>PM | 7 **(>180)**<br>4 **(85)** | A **(F)**<br>A **(F)** | 17 **(>180)**<br>14 **(>180)** | C **(F)**<br>B **(F)** | No; peak hour signal warrants not met and intersection operates at an overall LOS C or better. |
| 11 | Balfour Road at Foothill Drive/E Country Club Drive | Signal | AM<br>PM | 50<br>35 | D<br>C | 55<br>36 | D<br>D | No |
| 12 | Balfour Road at John Muir Parkway | Signal | AM<br>PM | 21<br>25 | C<br>C | 21<br>26 | C<br>C | No |

**TABLE 10**
**CUMULATIVE CONDITIONS PEAK HOUR INTERSECTION LOS SUMMARY**

| Intersection | | Control[1] | Peak Hour | Cumulative Without Project | | Cumulative With Project | | Significant Impact? |
|---|---|---|---|---|---|---|---|---|
| | | | | Delay[2, 3] | LOS | Delay[2, 3] | LOS | |
| 13 | Balfour Road at Eagle Rock Way/Cortona Way | Signal | AM<br>PM | 53<br>39 | D<br>D | 53<br>39 | D<br>D | No |
| 14 | Balfour Road at State Route 4 Eastbound Ramps | Signal | AM<br>PM | 37<br>30 | D<br>C | 41<br>30 | D<br>C | No |
| 15 | Balfour Road at State Route 4 Westbound Ramps | Signal | AM<br>PM | 22<br>28 | C<br>C | 22<br>28 | C<br>C | No |
| 16 | Balfour Road at Summerset Drive | Signal | AM<br>PM | 3<br>4 | A<br>A | 3<br>4 | A<br>A | No |
| 17 | Balfour Road at Fairview Avenue | Signal | AM<br>PM | 36<br>**60** | D<br>**E** | 38<br>***70*** | D<br>***E*** | **Yes**; average delay increase of more than 5-seconds |
| 18 | Marsh Creek Road/State Route 4 at Vasco Road | Signal | AM<br>PM | 24<br>52 | C<br>D | 24<br>52 | C<br>D | No |
| 19 | Walnut Boulevard at Vasco Road | Signal | AM<br>PM | 27<br>**93** | C<br>**F** | 27<br>**96** | C<br>**F** | No; average delay does not increase by more than 5-seconds |
| 20 | Camino Diablo Road at Vasco Road | Signal | AM<br>PM | 36<br>**134** | D<br>**F** | 36<br>**134** | C<br>**F** | No; average delay does not increase by more than 5-seconds |

Notes: **Bold** text indicates potentially unacceptable intersection operations.
1. Signal = Signalized intersection; SSSC = Side-street stop-controlled intersections; traffic on the main street does not stop while traffic on the side-street is controlled by a stop sign.
2. Average intersection delay is calculated for all signalized intersections using the 2010 HCM method for vehicles.
3. For SSSC intersections, average delay or LOS is listed first followed by the delay or LOS for the worst approach in parentheses.
4. Poor operations at this location are primarily caused by potential levels of development as approved in the Priority Area One Specific Plan. Construction of an additional westbound right-turn only lane from westbound Sand Creek Road to northbound State Route 4 would result in acceptable operations at this intersection. Should that improvement, or one of similar effectiveness, be added to the East County Regional Fee program, the proposed project and other projects in Eastern Contra Costa County would pay their fair share towards its construction.
5. During the morning peak hour around school bell times, signage prohibits the northbound left-turn movement from Mountain View Drive to Balfour Road
Source: Fehr & Peers, 2019.

The project applicant will be required to pay all applicable local and regional transportation impact fees to both the City of Brentwood and the East Contra Costa Regional Fee and Financing Authority (ECCRFFA) that would fund construction roadway improvements in the study area, including further improvements to the Sand Creek Road interchange.

### SIGNAL WARRANTS

The peak hour volume warrant was evaluated under cumulative conditions. The unsignalized Balfour Road at Mountain View Drive is not projected to meet peak hour warrants in the cumulative condition. The Balfour Road at Deer Valley Road intersections is projected to satisfy signal warrants in the cumulative condition prior to the addition of project traffic. The Commercial Project Driveway on Balfour Road is expected to satisfy peak hour warrants with the project.

## CUMULATIVE CONDITIONS IMPACTS AND MITIGATION

***Impact Statement 12:*** Intersection 5 – Balfour Road at Deer Valley Road

The intersection is projected to operate at an overall deficient LOS F prior to the addition of project traffic, and peak hour signal warrants would be satisfied. Addition of project-generated vehicle trips would increase delay for the side-street movement by more than 30-seconds. Based on the significance criteria, this is considered a ***significant*** impact.

> Mitigation Measure 12: The project applicant shall pay their fair share[6] towards the signalization of this intersection in conjunction with other planned improvements, which include the construction of a southbound left-turn lane, as well as separate westbound left and right-turn lanes. These improvements would result in overall acceptable service levels, reducing the project's existing impact to a ***less-than-significant*** level, as shown in **Table 11.** Fifty percent of this improvement project is included in the City's Development Impact Fee, and payment of the City's fee would account for a portion of the fair-share contribution. An additional fair-share contribution may be required to fully mitigate the project's impact.

***Impact Statement 13:*** Intersection 6 – Balfour Road at Commercial Entrance

> The Commercial Project Driveway on Balfour Road is projected to operate at an overall acceptable service level. However, vehicles turning from the site to Balfour Road could experience LOS F

[6] The responsibility for improvements to this intersection are shared equally by the City of Antioch and the City of Brentwood.

operations during the PM peak hour and peak hour signal warrants are expected to be satisfied, depending on the ultimate development that is proposed for the site. Based on the significance criteria, this impact is considered ***significant***.

Mitigation Measure 13: Design the commercial access intersection to provide acceptable access. Options could include reducing the size of the commercial development, signalizing the driveway, or widening Balfour Road to provide two through lanes in both direction to Deer Valley Road. **Table 11** shows the level of service with signalization, separate left and right-turn lanes from the site to Balfour Road, a westbound right-turn only lane and an eastbound left-turn lane, with one through lane in each direction on Balfour Road. Implementation of this measure would reduce the impact to a ***less-than-significant*** level.

***Impact Statement 14:*** Intersection 17 – Balfour Road at Fairview Avenue

The addition of project-generated vehicle trips would worsen overall LOS E conditions in the cumulative with project condition during PM Peak hour and increase average delay by more than 5-seconds. Based on the significance criteria, this is considered a ***significant*** impact.

Mitigation Measure 14: Reallocate the right-of-way on the northbound leg of the intersection to provide dual left-turn lanes, one through lane and a through-right shared lane. This improvement in conjunction with signal timing adjustments would result in LOS D operations, as shown in **Table 11**, reducing the project impact to a ***less-than-significant*** level. Although this improvement is identified in the General Plan EIR, it is not included in the development impact fee. Therefore, the project would be required to pay their fair share in addition to payment of the development impact fee. Should this project be added to the development impact fee prior to the cumulative condition, payment of fees may be sufficient to mitigate the project impact.



**TABLE 11**
**CUMULATIVE CONDITIONS WITH MITIGATION**
**PEAK HOUR INTERSECTION LOS SUMMARY**

| Intersection | | Control[1] | Peak Hour | Cumulative without Project | | Cumulative With Project | | Cumulative With Project Plus Mitigation | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Delay[2,3] | LOS | Delay[2,3] | LOS | Delay[2,3] | LOS |
| 5 | Balfour Road at Deer Valley Road | SSSC | AM<br>PM | **> 50 (>180)**<br>**37 (72)** | **F (F)**<br>**E (F)** | ***> 50 (>180)***<br>***> 50 (>180)*** | ***F (F)***<br>***F (F)*** | 16<br>20 | B<br>B |
| 6 | Balfour Road at Commercial Entrance | SSSC | AM<br>PM | (With Project Intersection) | | 1.1 (35)<br>***40 (> 180)*** | A (D)<br>***E (F)*** | 8<br>11 | A<br>B |
| 17 | Balfour Road at Fairview Avenue | Signal | AM<br>PM | 36<br>**60** | D<br>**E** | 38<br>***70*** | D<br>***E*** | 36<br>53 | D<br>D |

Notes: **Bold** text indicates potentially unacceptable intersection operations. ***Bold Italics*** indicates potentially significant impact.
1. Signal = Signalized intersection; SSSC = Side-street stop-controlled intersections; traffic on the main street does not stop while traffic on the side-street is controlled by a stop sign.
2. Average intersection delay is calculated for all signalized intersections using the 2010 HCM method for vehicles.
3. For SSSC intersections, average delay or LOS is listed first followed by the delay or LOS for the worst approach in parentheses.
Source: Fehr & Peers, 2019.

# 7. FREEWAY ANALYSIS

The freeway analysis was conducted under existing, near-term and cumulative conditions based on the methodology outlined in Chapter 1 to determine travel speeds and delay indices along the State Route 4 corridor from north of Sand Creek Road to Marsh Creek Road.

## EXISTING CONDITIONS

Mainline traffic counts were conducted on State Route 4 at Marsh Creek Road in January 2019. Based on on-ramp and off-ramp volumes at the Balfour Road and Sand Creek Road interchanges, mainline traffic volumes for each analysis segment was calculated. The traffic volumes and number of travel lanes were used to calculate vehicle speeds, which were then used to calculate the delay index, presented in **Table 12** for the AM peak hour and **Table 13** for the PM peak hour. The results were verified through travel of the corridor during peak hours.

With the completion of the Balfour Road interchange, travel on State Route 4 between Marsh Creek Road and the Sand Creek Road interchange experiences minimal levels of congestion during peak hours, with delay indices well within the standards set by the Contra Costa County Transportation Authority (CCTA) in the East County Action Plan. While the addition of project traffic would increase the delay index for some freeway segments, it would not result in any segment to exceed the delay index standard.

## NEAR-TERM

Near-term freeway forecasts were developed based on the same method used to develop the near-term intersection forecasts, both without and with the project. Operations were evaluated using the same methods described in Chapter 1. No freeway improvements were included in the evaluation of near-term freeway operations. The Near-term without and with Project analysis results are presented in **Table 14** and **Table 15** for the AM and PM peak hours, respectively, based on the estimates of near-term traffic volumes, plus estimates of project traffic. In the near-term condition, operations of State Route 4 between Marsh Creek Road and Balfour Road are expected to degrade beyond the standard set by CCTA, and the addition of project traffic would further degrade operations, resulting in a potentially significant impact. All other freeway segments would continue to operate within acceptable standards.

# CUMULATIVE

Cumulative freeway forecasts were developed based on the same method used to develop the cumulative intersection forecasts, both without and with the project. Operations were evaluated using the same methods described in Chapter 1. The Cumulative without and with Project analysis results are presented in **Table 16** and **Table 17** for the AM and PM peak hours, respectively, based on the estimates of cumulative traffic volumes, plus estimates of project traffic. In the cumulative condition, improvements to State Route 4 between Balfour Road and Marsh Creek Road are planned, which would increase the number of travel lanes in each direction to two lanes. With this improvement, all freeway segments are projected to operate within the standard set by CCTA.

***Impact Statement 15: Regional Freeway Facilities***

The project is expected to worsen the delay index along the State Route 4 corridor where deficient operations are projected to occur in the near-term condition; this is considered a ***significant*** impact. Additionally, the project would contribute to worsening congestion on other segments of State Route 4 to the west of the study area not explicitly evaluated.

> ***Mitigation Measure 15:*** The project applicant shall pay their fair share towards freeway improvement projects in the area, including the widening of State Route 4 between Balfour Road and Marsh Creek Road through the payment of the regional transportation impact fees to the East Contra Costa Regional Fee and Financing Authority (ECCRFFA). However, as the timing of construction of this improvement is uncertain, this impact would remain ***significant and unavoidable*** until the improvement is constructed.

**TABLE 12**
**EXISTING CONDITIONS**
**AM PEAK HOUR FREEWAY OPERATIONS SUMMARY**

| Segment | Direction | Existing | | Existing With Project | |
|---|---|---|---|---|---|
| | | Volume | Delay Index | Volume | Delay Index |
| South of Sand Creek Road | Southbound | 2,448 | 1.00 | 2,518 | 1.00 |
| | Northbound | 2,815 | 1.01 | 2,996 | 1.02 |
| North of Sand Creek Road | Southbound | 2,009 | 1.00 | 2,087 | 1.00 |
| | Northbound | 2,014 | 1.00 | 2,214 | 1.00 |
| South of Balfour Road | Southbound | 1,201 | 1.20 | 1,251 | 1.28 |
| | Northbound | 940 | 1.03 | 966 | 1.04 |

Source: Fehr & Peers, 2019.

**TABLE 13**
**EXISTING CONDITIONS**
**PM PEAK HOUR FREEWAY OPERATIONS SUMMARY**

| Segment | Direction | Existing | | Existing With Project | |
|---|---|---|---|---|---|
| | | Volume | Delay Index | Volume | Delay Index |
| South of Sand Creek Road | Southbound | 3,185 | 1.03 | 3,384 | 1.05 |
| | Northbound | 2,932 | 1.02 | 3,153 | 1.03 |
| North of Sand Creek Road | Southbound | 2,038 | 1.00 | 2,216 | 1.00 |
| | Northbound | 2,220 | 1.00 | 2,464 | 1.00 |
| South of Balfour Road | Southbound | 1,015 | 1.05 | 1,073 | 1.08 |
| | Northbound | 1,431 | 1.82 | 1,507 | 2.24 |

Source: Fehr & Peers, 2019.

**TABLE 14**
**NEAR-TERM CONDITIONS**
**AM PEAK HOUR FREEWAY OPERATIONS SUMMARY**

| Segment | Direction | Near-Term | | Near-Term With Project | |
|---|---|---|---|---|---|
| | | Volume | Delay Index | Volume | Delay Index |
| South of Sand Creek Road | Southbound | 2,752 | 1.01 | 2,822 | 1.01 |
| | Northbound | 3,343 | 1.05 | 3,524 | 1.07 |
| North of Sand Creek Road | Southbound | 2,401 | 1.00 | 2,479 | 1.00 |
| | Northbound | 2,325 | 1.00 | 2,525 | 1.01 |
| South of Balfour Road | Southbound | 1,478 | 2.06 | 1,528 | 2.38 |
| | Northbound | 1,109 | 1.11 | 1,135 | 1.13 |

Source: Fehr & Peers, 2019.

**TABLE 15**
**NEAR-TERM CONDITIONS**
**PM PEAK HOUR FREEWAY OPERATIONS SUMMARY**

| Segment | Direction | Near-Term | | Near-Term With Project | |
|---|---|---|---|---|---|
| | | Volume | Delay Index | Volume | Delay Index |
| South of Sand Creek Road | Southbound | 3,653 | 1.10 | 3,852 | 1.15 |
| | Northbound | 3,350 | 1.05 | 3,571 | 1.08 |
| North of Sand Creek Road | Southbound | 2,350 | 1.00 | 2,573 | 1.01 |
| | Northbound | 2,663 | 1.01 | 2,907 | 1.02 |
| South of Balfour Road | Southbound | 1,211 | 1.22 | 1,269 | 1.31 |
| | Northbound | 1,705 | **4.32** | 1,781 | **5.71** |

Source: Fehr & Peers, 2019.

**TABLE 16**
**CUMULATIVE CONDITIONS**
**AM PEAK HOUR FREEWAY OPERATIONS SUMMARY**

| Segment | Direction | Cumulative | | Cumulative With Project | |
|---|---|---|---|---|---|
| | | Volume | Delay Index | Volume | Delay Index |
| South of Sand Creek Road | Southbound | 2,560 | 1.01 | 2,601 | 1.01 |
| | Northbound | 3,330 | 1.05 | 3,447 | 1.06 |
| North of Sand Creek Road | Southbound | 2,380 | 1.00 | 2,390 | 1.00 |
| | Northbound | 2,560 | 1.01 | 2,569 | 1.01 |
| South of Balfour Road | Southbound | 1,380 | 1.00 | 1,430 | 1.00 |
| | Northbound | 1,220 | 1.00 | 1,246 | 1.00 |

Source: Fehr & Peers, 2019.

**TABLE 17**
**CUMULATIVE CONDITIONS**
**PM PEAK HOUR FREEWAY OPERATIONS SUMMARY**

| Segment | Direction | Cumulative | | Cumulative With Project | |
|---|---|---|---|---|---|
| | | Volume | Delay Index | Volume | Delay Index |
| South of Sand Creek Road | Southbound | 4,110 | 1.25 | 4,231 | 1.31 |
| | Northbound | 3,890 | 1.16 | 4,054 | 1.22 |
| North of Sand Creek Road | Southbound | 2,820 | 1.01 | 2,850 | 1.01 |
| | Northbound | 3,210 | 1.03 | 3,273 | 1.04 |
| South of Balfour Road | Southbound | 1,700 | 1.00 | 1,758 | 1.00 |
| | Northbound | 2,320 | 1.00 | 2,396 | 1.00 |

Source: Fehr & Peers, 2019.

# 8. SITE PLAN REVIEW AND CEQA CHECKLIST

This chapter provides a high-level overview of site access and internal circulation for vehicles, pedestrians, bicycles, and emergency vehicles based on the conceptual site plan presented previously on Figure 2.

## VEHICULAR SITE ACCESS AND CIRCULATION

In the existing and near-term condition, all vehicular access is proposed from Balfour Road. As part of the project, Balfour Road would be widened to four lanes from West County Club Drive/American Avenue to the American Avenue extension, with the construction of bicycle facilities and sidewalks. West of the American Avenue extension, Balfour Road is proposed to be upgraded to provide sidewalks on the north side of the roadway, and bicycle facilities in both directions, and one travel lane in each direction. Deer Valley Road would also be improved along the project boundary to current City Standards but no additional vehicular capacity would be provided. A connection to Hillcrest Avenue would be provided in the cumulative condition as the Hillcrest Avenue extension is constructed by others outside the project site. Hillcrest Avenue through the project site would be access restricted such that there would not be a through traffic connection between Balfour Road and Sand Creek Road via the Hillcrest Avenue alignment.

Operations of the residential site access location, commercial site access location, and American Avenue extension intersections with Balfour Road were evaluated in the previous chapters as signalized intersections, which showed that the intersections are expected to operate acceptably through all analysis scenarios with signal control. However, these intersections may be constructed as roundabouts, and the analysis results assuming roundabout control are presented in **Table 18**, which shows that these intersections are also projected to operate acceptably with roundabout control.

**TABLE 18**
**SITE ACCESS INTERSECTION LOS SUMMARY**

| Intersection | | Control | Peak Hour | Existing with Project | | Near-term with Project | | Cumulative With Project | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Delay | LOS | Delay | LOS | Delay | LOS |
| 6 | Balfour Road at Commercial Entry | Round-about | AM<br>PM | 8<br>8 | A<br>A | 9<br>9 | A<br>A | 9<br>13 | A<br>B |
| 7 | Balfour Road at American Avenue Extension | Round-about | AM<br>PM | 7<br>5 | A<br>A | 7<br>5 | A<br>A | 9<br>7 | A<br>A |

**TABLE 18**
**SITE ACCESS INTERSECTION LOS SUMMARY**

| Intersection | | Control | Peak Hour | Existing with Project | | Near-term with Project | | Cumulative With Project | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Delay | LOS | Delay | LOS | Delay | LOS |
| 8 | Balfour Road at Main Project Entry | Round-about | AM<br>PM | 9<br>7 | A<br>A | 9<br>8 | A<br>A | 8<br>8 | A<br>A |

Source: Fehr & Peers, 2019.

In addition to evaluating the site access locations, an assessment of internal intersection operations was also conducted, as presented in **Table 19** for both the existing/near-term roadway network with all access provided from Balfour Road, and for the cumulative condition with access also provided from the Hillcrest Avenue extension. The location of each internal intersection evaluated is shown on **Figure 14**. As shown, all internal site intersections are projected to operate within acceptable delay ranges based on the City of Brentwood standards.

***Site Recommendation 1:*** Although all internal intersections are projected to operate within an acceptable level of service, the final designs should be reviewed to ensure that adequate sight distance is provided for a design speed of 25 miles per hour along the Hillcrest Avenue Extension and Loop Road. Additionally, the design of the Loop Road/Entry C (Site Intersection 4) should be reviewed as this is proposed to be a 5-legged roundabout and from a conceptual level, some of the intersection angles may be problematic.

**TABLE 19**
**INTERNAL INTERSECTION LOS SUMMARY**

| Intersection | | Control | Peak Hour | Existing/Near-Term with Project | | Cumulative With Project | |
|---|---|---|---|---|---|---|---|
| | | | | Delay[2 3] | LOS | Delay[2 3] | LOS |
| 1. | Hillcrest Extension/ Neighborhood Entry A | SSSC | AM<br>PM | 6 (9)<br>6 (9) | A (A)<br>A (A) | 4 (9)<br>4 (9) | A (A)<br>A (A) |
| 2. | Hillcrest Avenue/ Loop Road | Roundabout | AM<br>PM | 3<br>3 | A<br>A | 3<br>3 | A<br>A |
| 3. | Loop Road/ Neighborhood Entry B | SSSC | AM<br>PM | 7 (8)<br>7 (9) | A (A)<br>A (A) | 7 (9)<br>7 (9) | A (A)<br>A (A) |
| 4. | Loop Road/ Neighborhood Entry C | Roundabout | AM<br>PM | 3<br>3 | A<br>A | 3<br>3 | A<br>A |

**TABLE 19**
**INTERNAL INTERSECTION LOS SUMMARY**

| Intersection | | Control | Peak Hour | Existing/Near-Term with Project | | Cumulative With Project | |
|---|---|---|---|---|---|---|---|
| | | | | Delay[2 3] | LOS | Delay[2 3] | LOS |
| 5. | Loop Road/ Neighborhood Entry D | Roundabout | AM<br>PM | 3<br>3 | A<br>A | 3<br>3 | A<br>A |
| 6. | Loop Road/ Neighborhood Entry E | SSSC | AM<br>PM | 1 (9)<br>1 (9) | A (A)<br>A (A) | 1 (9)<br>1 (9) | A (A)<br>A (A) |
| 7. | Loop Road/ Neighborhood Entry E | Roundabout | AM<br>PM | 3<br>4 | A<br>A | 3<br>4 | A<br>A |
| 8. | Loop Road/ Neighborhood Entry E | Roundabout | AM<br>PM | 4<br>4 | A<br>A | 3<br>4 | A<br>A |
| 9. | Loop Road/ Neighborhood Entry E | Roundabout | AM<br>PM | 4<br>6 | A<br>A | 4<br>5 | A<br>A |
| 10. | Loop Road/ Neighborhood Entry E | Roundabout | AM<br>PM | 3<br>4 | A<br>A | 3<br>3 | A<br>A |
| 11. | Loop Road/Neighborhood Entry K | SSSC | AM<br>PM | 1 (9)<br>1 (9) | A (A)<br>A (A) | 1 (9)<br>1 (9) | A (A)<br>A (A) |
| 12. | Hillcrest Avenue/ Neighborhood Entry L | Roundabout | AM<br>PM | 5<br>7 | A<br>A | 4<br>5 | A<br>A |

Source: Fehr & Peers, 2019.

## CROSS SECTION REVIEW

Several roadway cross sections are proposed within the project, with a variety of right-of-ways and design features. As the roadways within the project are expected to be private streets, they do not need to conform to City Standards, although they do need to meet emergency vehicle access requirements (as discussed below).

The main entry roadway from Balfour Road is proposed to extend from Balfour Road to the Loop Road. This roadway is proposed within a 140-foot cross section and would provide one 12-foot vehicle travel lane in each direction, an 8-foot bicycle/neighborhood vehicle lane, and a 16-foot median. Additionally, a 10-foot multi-use path would be provided on both sides of the roadway with the remaining space dedicated to landscaping. A portion of this roadway will be a public street. The street cross section meets the requirements for travel lanes, bike lane, and median widths for collector streets and exceeds the standard for sidewalk, landscaping, and overall right-of-way requirements.



The loop roadway proposes a similar design, but with a reduced right-of-way (120-feet), resulting in a smaller median (10 feet), and less landscaping. Overall, the proposed design would provide sufficient clear-way for emergency vehicles (20-feet), and would accommodate a wide variety of travel modes, including passenger vehicles, transit vehicles, golf carts and other neighborhood vehicles, bicyclists and pedestrians. No parking would be permitted on either the entry roadway or loop roadway.

> ***Site Recommendation 2:*** Design the loop roadway to a design speed of 25 miles per hour. Consider reallocating the proposed pavement cross section on the loop roadway to provide a 10-foot travel lane, 3-foot striped buffer, and a 7-foot bicycle/neighborhood vehicle lane. The provision of a narrower effective travel lane will help to moderate travel speeds, while the provision of a buffer will enhance safety for bicyclists and neighborhood electric vehicle users.

Five street cross sections are proposed within neighborhoods, with right-of-way ranging between 21 and 41 feet. All cross sections provide a minimum of 20-foot clear-area for emergency vehicles. Within lower density neighborhoods, sidewalks are not provided as vehicle traffic volumes are expected to be low and all travel can occur within a shared street. Some of the lower density neighborhood streets would allow for on-street parking. Three cross section variants are provided for the lower density neighborhoods, including one without parking, one with parking on one side of the street, and one with parking on both sides of the street.

> ***Site Recommendation 3:*** Design the 20-foot roadway, which is proposed within the rural neighborhoods, for a 10 to 15 mile per hour design speed. Additionally, provide advisory bicycle lanes on the roadway with a 5.5-foot dashed-striped bicycle lane on each side of the roadway that can be used by bicyclists, pedestrians and neighborhood electric vehicles. A shared 9-foot center lane would be provided for vehicle traffic. Vehicles are allowed to intrude on the bicycle lane when there is on-coming traffic. However, given the number of homes that would be served by these roadways traffic volumes are expected to be low (less than 250 vehicles per day on any one street segment) and conflicts are expected to be minimal. This treatment has been successfully applied on roadways that carry up to 5,000 vehicles per day. This cross section treatment is in keeping with the rural nature of the roadway and better delineates space for all roadway users.

Within the higher density active adult neighborhoods, the street right-of-way is proposed to be 35 feet, with a 4.5 foot sidewalk on one side of the street, an 8-foot parking lane, one 10-foot travel lane, and one 12-foot travel lane. Within the market rate neighborhoods, the street right-of-way is proposed to be 41 feet, with a 4.5 foot sidewalk on one side of the street, a two 8-foot parking lanes and two 10-foot travel lanes.



***Site Recommendation 4*:** Consider reducing the travel lane width (when proposed as 12-feet) or parking lane to provide a 5-foot wide sidewalk. Although the streets are proposed as private streets and not subject to the City Standards or ADA requirements, a 5-foot sidewalk is the City minimum and meets ADA requirements. This change does not affect the overall right-of-way allocation.

## EMERGENCY VEHICLE ACCESS

Several factors determine whether a project has sufficient access for emergency vehicles, including:

1. Number of access points (both public and emergency access only)
2. Width of access points
3. Width of internal roadways

Each of these factors is discussed in further detail below.

All access to the site would be provided from a single access on Balfour Road in the near-term. A secondary access point to the north at the potential Hillcrest Avenue extension would also be provided as parcels to the north develop, however the timing of that connection is uncertain.

Based on the *2016 California Fire Code* as amended by Contra Costa County Ordinance 2016-23, the minimum number of access roads serving residential development(s) shall be based upon the number of dwelling units served as follows:

- Multiple Family Residential Projects having more than 100 dwelling units should be provided with two separated and approved fire apparatus access roads (D106.1). ***Exception***: Projects having up to 200 dwelling units may have a single approved fire apparatus access road when all buildings, including nonresidential occupancies, are equipped throughout with approved automatic sprinkler systems installed in accordance with Section 903.3.1.1 or 903.3.1.2.
- Multiple Family Residential Projects having more than 200 dwelling units shall be provided with two separate and approved fire apparatus access roads regardless of whether they are equipped with an approved automatic sprinkler system.
- Development of one or two-family dwellings where the number of dwelling units exceed 30 shall be provided with two separate and approved fire apparatus access roads; where there are more than 30-dwelling units on a single public or private fire apparatus access road and all dwelling units are equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3 of the *California Fire Code*, access from two directions shall not be required (D107.1).

- Where two fire apparatus access roads are required, they shall be placed a distance apart equal to not less than one-half of the length of the maximum overall diagonal dimension of the property or area to be served, measured in a straight line between accesses.

Access to the project site would be limited to a single-access point from Balfour Road in the near-term condition; however this connection does provide two 20-foot connections. Additionally, most neighborhoods have two means of accessing the neighborhood. All homes would also provide automatic sprinkler systems.

> ***Site Access Recommendation 5*:** As timing of a potential connection north to Hillcrest Avenue is uncertain and based on the development of adjacent parcels outside the control of this project, the project applicant shall consult with the East Contra Costa County Fire Protection District to determine if the proposed emergency access meets their requirements in the interim condition.

The closest fire station to the project site is Station 52 located at 201 John Muir Parkway, approximately 1.5 miles from the main project entry on Balfour Road. This station, as with the remaining two stations in Eastern Contra Costa County, is staffed with three firefighters. General Plan Policy CSF 4-2 establishes a goal to "maintain a three to five minute response time for all emergency response calls within Brentwood". Based on recent data, existing emergency response times in Brentwood are greater than 5-minutes. The addition of additional service population, as well as the addition of vehicle traffic to the City's roadways could increase city-wide emergency response times, further exacerbating an existing deficiency.

## PEDESTRIAN, BICYCLE AND TRANSIT ACCESS AND CIRCULATION

Sidewalks are proposed on both sides of the main roadways connecting to Balfour Road as well as within the site. Sidewalks are also provided on one-side of the street in most residential neighborhoods. A robust network of hiking trails is also provided within the site.

Bicycle lanes are provided on the main roadways as well – these lanes would be shared with neighborhood electric vehicles. This shared lane is proposed to be 8-feet wide, and modifications proposed as site recommendation 2 would add a striped buffer between the travel way and bicycle facilities. As traffic volumes on internal project streets are projected to be fairly low, conflicts between bicyclists, neighborhood vehicles, and standard vehicles are expected to be minimal.

> ***Site Access Recommendation 6:*** Provide high visibility crossing treatments at intersections and mid-block locations where pedestrian and bicycle street crossings could occur.

Although there is currently not transit service in the vicinity of the project site, residents aged 65 and older are able to access Senior Paratransit services through Tri Delta Transit and paratransit service would be provided to disabled residents who are not able to independently use fixed-route service. However, it is expected that residents who do not qualify for senior or paratransit services, employees or visitors to the site may desire to use transit at some point. Consultation should occur with Tri Delta Transit to identify potential transit amenities within and adjacent to the development. Additionally, some residents may rely on ride hailing services. As the project has restricted access, guidelines should be established that would permit authorized ride hailing services to access passengers.

As part of the project, American Avenue would be extended from its current terminus in front of Adams Middle School to Balfour Road. This extension would allow for vehicles to access Adams Middle School and Heritage High School from the west, and would change overall vehicular travel patterns to/from both schools. As the school circulation has been designed based on the current cul-de-sac design of American Avenue, modifications to school access parameter for vehicles, bicycle and pedestrians may be necessary as part of the American Avenue extension.

> ***Site Access Recommendation 7:*** As part of the construction of the American Avenue extension, conduct a safe-routes to school assessment to identify potential modifications to site access and circulation for all travel modes to Adams Middle School and Heritage High School. The project Applicant shall implement the measures identified from that study, which will likely include traffic control changes, signing, and striping, in consultation with City of Brentwood as a part of that study.

## CEQA CHECKLIST REVIEW

This section provides a summary of the potential project impacts related to bicycles, pedestrians, and transit based on the discussions in previous chapters as compared to the significance criteria outlined in Chapter 1, and summarized for each topic area, as presented in **Table 20.**

**TABLE 20**
**CEQA CHECKLIST REVIEW**

| Significance Criteria | Discussion | Mitigation |
|---|---|---|
| ***A pedestrian impact is considered significant if the project would:*** | | |
| Disrupt existing pedestrian facilities | Pedestrian access is not currently provided along Balfour Road along the project frontage, such that pedestrian access in the area is not expected to be disrupted during the project construction phase.<br><br>Mitigation measures proposed as mitigation for project impacts were reviewed for their potential impact to pedestrians. No intersection widening beyond the already planned cross-sections is proposed as project mitigation. No pedestrian facilities are proposed to be removed as part of project mitigation. | This impact is ***less-than-significant***.<br><br>This impact is ***less-than-significant***. |
| Interfere with planned pedestrian facilities | The project would construct pedestrian facilities along all roadways within the project site, and along the Balfour Road project frontage completing a portion of sidewalk network in this area. | This impact is ***less-than-significant***. |
| Create inconsistencies with adopted pedestrian system plans, guidelines, policies, or standards | Sidewalks on roadways constructed as part of the project on public streets would be constructed to current City standards. | This impact is ***less-than-significant.*** |

**TABLE 20**
**CEQA CHECKLIST REVIEW**

| Significance Criteria | Discussion | Mitigation |
|---|---|---|
| ***A bicycle impact is considered significant if the project would:*** | | |
| Disrupt existing bicycle facilities | Existing bicycle facilities are no provided in the immediate vicinity of the project site on Balfour Road. The project does not propose to eliminate existing bicycle facilities in the vicinity of project.<br><br>Mitigation measures proposed as mitigation for project impacts were reviewed for their potential impact to bicyclists. No intersection widening beyond the already planned cross-sections is proposed as project mitigation. No bicycle facilities are proposed to be removed as part of project mitigation. | This impact is ***less-than-significant***.<br><br>This impact is ***less-than-significant***. |
| Interfere with planned bicycle facilities | The project does not preclude the construction of planned bicycle facilities. | This impact is ***less-than-significant.*** |
| Create inconsistencies with adopted bicycle system plans, guidelines, policies, or standards | The project would construct bicycle facilities along Balfour Road, consistent with planned bicycle improvements. Bicycle detection would be required at signalized intersections constructed as part of the project. | This impact is ***less-than-significant.*** |
| ***A transit impact is considered significant if the project would:*** | | |
| The project interferes with existing transit facilities or precludes the construction of planned transit facilities | Construction of the proposed project would not interfere with existing transit routes, nor would it preclude the provision of future transit routes in the study area. | This impact is ***less-than-significant***. |

**TABLE 20**
**CEQA CHECKLIST REVIEW**

| Significance Criteria | Discussion | Mitigation |
|---|---|---|
| ***Other Transportation Effects*** | | |
| An impact could occur if the project conflicts or is inconsistent with CEQA Guidelines section 15064.3, subdivision (b)? | This section of the CEQA guidelines relates to the assessment of vehicle miles of travel generated by the project. An assessment of this metric is detailed in Chapter 9 for informational purposes only as the neither City of Brentwood nor CCTA has adopted thresholds of significance related to VMT. Additionally, agencies are not required to complete VMT assessments until July 2020. | This analysis was prepared for informational purposes only and no findings of significance were made. |

| | | |
|---|---|---|
| | An increase in hazardous road conditions could occur if the public roadways proposed as part of the project do not meet City of Brentwood standards.<br><br>The project would add traffic to Deer Valley Road, a rural roadway that does not currently provide shoulders or meet City of Antioch or Contra Costa County design standards. This is a potentially significant impact. **(Impact 16)** | This impact is ***less-than-significant.***<br><br>**Mitigation Measure 16**: Contribute a fair share towards improvements on Deer Valley Road that result in the roadway meeting current design standards. As this improvement is under both the jurisdiction of the City of Antioch and Contra Costa County, payment of a fair share contribution may not assure that improvements would be constructed. Therefore, this impact could remain significant and unavoidable. |
| An impact could occur if the project substantially increases traffic hazards due to a geometric design feature (e.g. sharp curves or dangerous intersections) or incompatible uses. | The project construction period is expected to span multiple years (20+ years), with site grading and backbone roadway improvements occurring in earlier project phases. Heavy equipment usage will likely be the highest in the initial project phases, with material delivery and construction related trips higher in subsequent phases. As such, there is the potential for incompatible uses during some construction phases. The project would be required to develop and implement a construction management program as part of the City's standard conditions of approval. These measures would include:<br>• Project staging plan to maximize on-site storage of materials and equipment<br>• A set of traffic control measures, consisting of scheduling of major truck trips and deliveries to avoid peak-hours to the extent feasible; lane closure proceedings; signs, cones, and other warning devices for drivers; and designation of construction access routes<br>• Permitted construction hours<br>• Location of construction staging<br>• Identification of parking areas for construction employees, site visitors, and inspectors, | This impact is ***less-than-significant.*** |

**TABLE 20**
**CEQA CHECKLIST REVIEW**

| Significance Criteria | Discussion | Mitigation |
|---|---|---|
| | including on-site locations<br>• Provisions for street sweeping to remove construction related debris on public streets. | |
| An impact could occur if the project results in inadequate emergency access | At buildout, access to the site is proposed from two locations – Balfour Road and the Hillcrest Avenue extension. In the near-term, access would be limited to one roadway, which may not meet fire code standards. (Impact 17)<br><br>Additionally, the proposed project is expected to increase emergency vehicle response times. As the existing response times currently exceed the City's goal, this is a potentially significant impact. However, as the proposed project includes direct payment to the East Contra Costa Fire Protection District (ECCFPD) to assure the availability of sufficient Fire Fee funds to finance enhanced facilities and/or equipment to enable ECCFPD to maintain existing response times. This commitment will be made through the Project's Public Benefits and Pre-Annexation Agreement that is part of the Project proposal. Thus, payment of the Development Impact Fees in effect at the time of Project approval, in combination this additional payment will make it possible for ECCFPD to maintain its existing response times. | ***Mitigation Measure 17:*** Consult with the East Contra Costa County Fire Protection District to determine if the proposed emergency access meets their requirements in the interim condition. |

Source: Fehr & Peers, 2019.




(#) Internal Analysis Location  X Neighborhood Streets

Figure 14

# Internal Analysis Locations

# 9. VEHICLE MILES OF TRAVEL

In response to Senate Bill 743 (SB 743), the Office of Planning and Research (OPR) has updated California Environmental Quality Act (CEQA) guidelines to include new transportation-related evaluation metrics. Draft guidelines were developed in August 2014, with updated draft guidelines prepared January 2016, which incorporated public comments from the August 2014 guidelines. OPR released final proposed Guidelines on November 27, 2017, with an associated Technical Advisory Document on Evaluating Transportation Impacts in CEQA dated December 2018. The updated guidelines were finalized in January 2019 by the Natural Resources Agency, which includes a new Section 15064.3 on VMT analysis and thresholds for land use developments. New Guidelines section 15064.3 states that they do not take effect until July 1, 2020 unless the lead agency adopts them earlier. Neither the City of Brentwood nor the Contra Costa Transportation Authority has established any standards or thresholds on VMT. Therefore, the new guidelines have not yet been adopted and are not in effect at this time.

Since there are no standards in effect on VMT analysis, a preliminary assessment of the vehicle miles of travel (VMT) generated by the proposed project was prepared for informational and disclosure purposes only. No determination on the significance of VMT impacts is made in this document since none is legally required.

## CEQA GUIDELINES

Changes to Appendix G of the CEQA guidelines were finalized in January 2019, with methods for evaluating transportation impacts detailed in the *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 2018)[7] The following provides the information relevant to this project:

> **Text of Amendments to Appendix G**
>
> *b) For a land use project, would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)(1)?*
>
> **(b) Criteria for Analyzing Transportation Impacts.**
>
> **(1) Land Use Projects.** Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high quality transit corridor should be presumed to cause a

[7] Full document can be found here:
http://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf

less than significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be considered to have a less than significant transportation impact.

## ANALYSIS METHODS AND RESULTS

To conduct the VMT assessment, Fehr & Peers used the CCTA travel demand model to estimate the VMT generated by the proposed project uses, as presented in **Table 21.** In total, the project is expected to generate approximately 133,240 vehicle miles of travel per day. For the residential portion of the project, the level of vehicle travel was normalized by the expected number of residents to estimate a VMT per capita, which was then compared to the VMT per capita for the City of Brentwood, as well as the Countywide and Bay Area wide average, as presented in **Table 22.** Home based trip lengths per capita in Brentwood are higher than the Bay Area average and slightly lower than the Contra Costa County average. The residential portion of the project is expected to increase VMT per capita in the City of Brentwood.

**TABLE 21**
**PROJECT GENERATED VMT SUMMARY**

| Land Use | Daily VMT |
|---|---|
| Residential | 102,530 |
| Retail | 30,710 |
| **Total** | 133,240 |

Source: CCTA, Fehr & Peers, 2019.

**TABLE 22**
**AVERAGE VMT PER CAPITA EXISTING CONDITIONS (RESIDENTIAL USES)**

| Land Use Type | Project | Brentwood | Contra Costa County | Bay Area |
|---|---|---|---|---|
| Home Based VMT | 19.96 | 17.4 | 18.0 | 15.3 |

Source: CCTA, Fehr & Peers, 2019.

The retail portion of the project has the potential to generate approximately 30,710 vehicle miles of travel on an average daily basis, and accounting for patrons, employees and deliveries. However, as noted in the Technical Advisory, "*lead agencies should analyze the effects of a retail project by assessing the change in total VMT because retail projects typically re-route travel from other retail destinations. A retail project might lead to increases or decreases in VMT, depending on previously existing retail travel patterns*". To assess the retail portion of the project's effect on vehicle miles of travel, the CCTA was executed for the without and with retail condition for cumulative scenario, with the results presented in **Table 23.** The analysis results indicate that the retail portion of the project could increase overall vehicle miles of travel, although the net change in VMT at the City-wide level is less than the total VMT generated by the proposed retail uses.

**TABLE 23**
**CITYWIDE VMT – CUMULATIVE CONDITION**

| Scenario | Daily VMT |
|---|---|
| Year 2040 without Retail | 2,785,898 |
| Year 2040 with Retail | 2,812,231 |
| Net Change | 26,333 |

Source: CCTA Model, Fehr & Peers, 2019.

## VMT CONCLUSIONS

Results of the VMT analysis indicate that the project would contribute to an increase in vehicle miles of travel on a per-capita basis. The proposed commercial uses could result in a slight increase in overall VMT, although the net-change in VMT is less than the overall total generated by the commercial portion of the project, indicating that provision of an additional retail center in this area would provide other alternatives for existing and future residents of the area to meet their daily needs.

As there are no thresholds of significance, this analysis is being prepared for informational purposes only.

# APPENDIX A: TRAFFIC COUNTS



Prepared by National Data & Surveying Services

# Fairview Ave & Balfour Rd

## Peak Hour Turning Movement Count

**ID:** 19-08008-001
**City:** Brentwood

**Day:** Thursday
**Date:** 01/24/2019

**PEAK HOURS**

AM: 07:30 AM - 08:30 AM
NOON: NONE
PM: 03:00 PM - 04:00 PM

**COUNT PERIODS**

AM: 06:00 AM - 10:00 AM
NOON: NONE
PM: 03:00 PM - 06:00 PM

### SOUTHBOUND (Fairview Ave)

| | | | | | | |
|---|---|---|---|---|---|---|
| AM | 357 | 110 | 115 | 0 | 436 | AM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| PM | 246 | 159 | 195 | 1 | 683 | PM |
| | 1 | 2 | 2 | 0 | | |

### EASTBOUND (Balfour Rd)

| AM | NOON | PM | |
|---|---|---|---|
| 1224 | 0 | 1113 | |
| 0 | 0 | 0 | 0 |
| 226 | 0 | 334 | 2 |
| 634 | 0 | 845 | 2 |
| 89 | 0 | 167 | 0 |
| AM | NOON | PM | |

### WESTBOUND (Balfour Rd)

| PM | NOON | AM | |
|---|---|---|---|
| 150 | 0 | 122 | 1 |
| 721 | 0 | 754 | 2 |
| 76 | 0 | 45 | 1 |
| 0 | 0 | 0 | 0 |
| 1147 | 0 | 785 | |
| PM | NOON | AM | |

### CONTROL

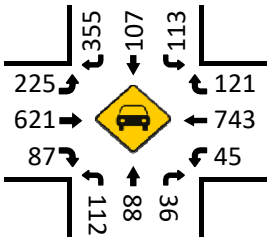
Signalized

| | | | |
|---|---|---|---|
| TEV | 2689 | 0 | 3345 |
| | AM | NOON | PM |
| PHF | 0.91 | | 0.93 |

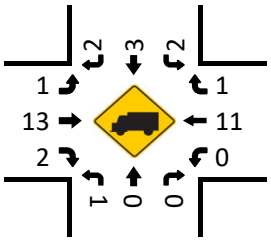
### NORTHBOUND (Fairview Ave)

| | | | | | | |
|---|---|---|---|---|---|---|
| PM | 402 | 0 | 146 | 198 | 107 | PM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| AM | 244 | 0 | 113 | 88 | 36 | AM |
| | | 0 | 1 | 2 | 1 | |

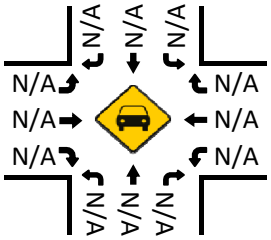
### Cars (AM)



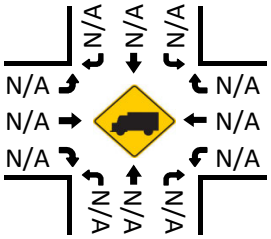

### HT (AM)



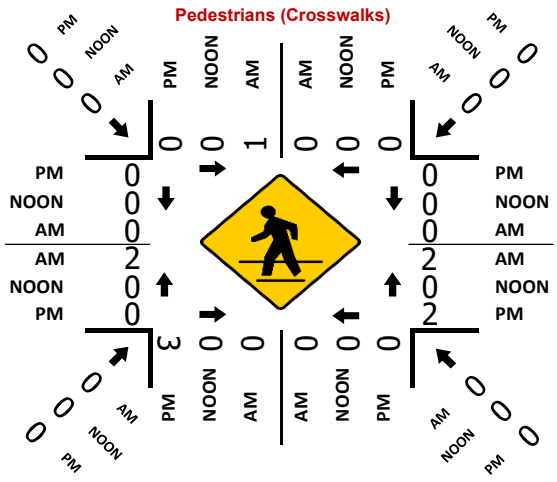

### Cars (NOON)



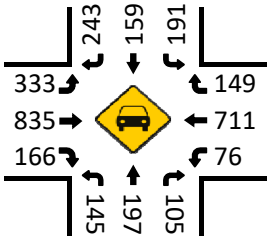

### HT (NOON)



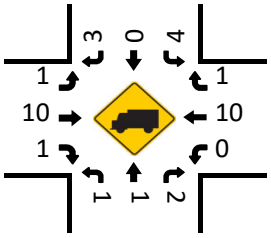

### Pedestrians (Crosswalks)




### Cars (PM)




### HT (PM)



Prepared by National Data & Surveying Services

# Summerset Dr & Balfour Rd

## Peak Hour Turning Movement Count

**ID:** 19-08008-002
**City:** Brentwood

**Day:** Thursday
**Date:** 01/24/2019

**PEAK HOURS**

AM: 07:30 AM - 08:30 AM
NOON: NONE
PM: 03:15 PM - 04:15 PM

**COUNT PERIODS**

AM: 06:00 AM - 10:00 AM
NOON: NONE
PM: 03:00 PM - 06:00 PM

### SOUTHBOUND (Summerset Dr)

| | | | | | | |
|---|---|---|---|---|---|---|
| AM | 0 | 0 | 0 | 0 | 0 | AM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| PM | 0 | 0 | 0 | 0 | 0 | PM |

### EASTBOUND (Balfour Rd)

| AM | NOON | PM | |
|---|---|---|---|
| 1223 | 0 | 1099 | ⇦ |
| 0 | 0 | 0 | ↩ 0 |
| 0 | 0 | 0 | ↱ 0 |
| 945 | 0 | 1329 | → 2 |
| 20 | 0 | 22 | ↳ 1 |
| AM | NOON | PM | |

### WESTBOUND (Balfour Rd)

| PM | NOON | AM | |
|---|---|---|---|
| 0 | 0 | 0 | 0 ↰ |
| 1071 | 0 | 1211 | 2 ← |
| 34 | 0 | 10 | 1 ↩ |
| 0 | 0 | 1 | 0 ↱ |
| 1367 | 0 | 953 | ⇨ |
| PM | NOON | AM | |

### NORTHBOUND (Summerset Dr)

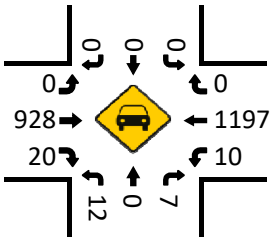
| | | | | | | |
|---|---|---|---|---|---|---|
| PM | 56 | 0 | 28 | 0 | 38 | PM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| AM | 30 | 0 | 12 | 0 | 7 | AM |

### CONTROL

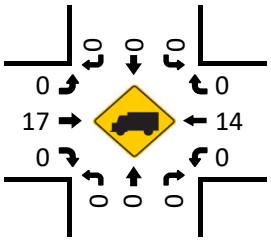
Signalized

| | | | |
|---|---|---|---|
| TEV | 2206 | 0 | 2522 |
| | AM | NOON | PM |
| PHF | 0.90 | | 0.95 |

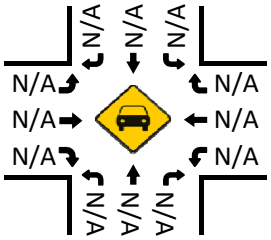
### Cars (AM)



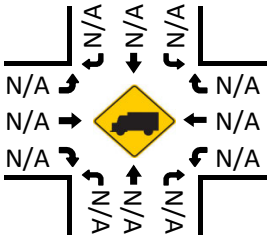

### HT (AM)



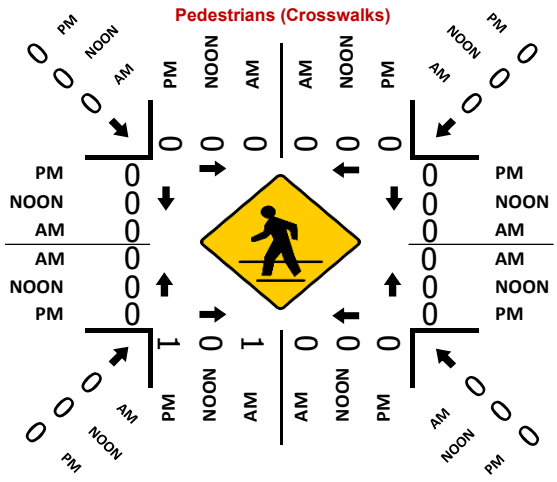

### Cars (NOON)



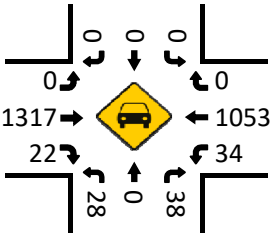

### HT (NOON)



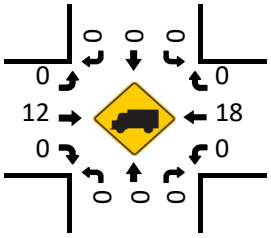

### Pedestrians (Crosswalks)




### Cars (PM)




### HT (PM)



Prepared by National Data & Surveying Services

# SR-4 EB Ramps & Balfour Rd

## Peak Hour Turning Movement Count

**ID:** 19-08078-003
**City:** Brentwood

**Day:** Thursday
**Date:** 02/07/2019

| | PEAK HOURS | COUNT PERIODS |
|---|---|---|
| AM | 07:15 AM - 08:15 AM | 06:00 AM - 09:00 AM |
| NOON | NONE | NONE |
| PM | 03:00 PM - 04:00 PM | 03:00 PM - 06:00 PM |

### SR-4 EB Ramps — SOUTHBOUND

| | Right | Thru | Left | U-Turn | Departing |
|---|---|---|---|---|---|
| AM | 731 | 0 | 342 | 0 | 255 |
| NOON | 0 | 0 | 0 | 0 | 0 |
| PM | 565 | 0 | 560 | 0 | 101 |
| Lanes | 2 | 0 | 1 | 0 | |

### Balfour Rd — EASTBOUND

| | AM | NOON | PM | Lanes |
|---|---|---|---|---|
| Departing | 1543 | 0 | 1314 | |
| U-Turn | 0 | 0 | 1 | 0 |
| Left | 190 | 0 | 72 | 2 |
| Thru | 1098 | 0 | 1234 | 2 |
| Right | 0 | 0 | 0 | 0 |

### Balfour Rd — WESTBOUND

| | PM | NOON | AM | Lanes |
|---|---|---|---|---|
| Right | 29 | 0 | 65 | 0 |
| Thru | 748 | 0 | 812 | 3 |
| Left | 0 | 0 | 0 | 0 |
| U-Turn | 0 | 0 | 0 | 0 |
| Departing | 1794 | 0 | 1440 | |

### SR-4 EB Ramps — NORTHBOUND

| | Departing | U-Turn | Left | Thru | Right |
|---|---|---|---|---|---|
| Lanes | | 0 | 0 | 0 | 0 |
| PM | 0 | 0 | 0 | 0 | 0 |
| NOON | 0 | 0 | 0 | 0 | 0 |
| AM | 0 | 0 | 0 | 0 | 0 |

### CONTROL

Signalized

| | AM | NOON | PM |
|---|---|---|---|
| TEV | 3238 | 0 | 3209 |
| PHF | 0.89 | | 0.92 |

### Total Vehicles (AM)

| Approach | Left | Thru | Right |
|---|---|---|---|
| Southbound | 342 | 0 | 731 |
| Eastbound | 190 | 1098 | 0 |
| Westbound | 0 | 812 | 65 |
| Northbound | 0 | 0 | 0 |

### HT (AM)

| Approach | Left | Thru | Right |
|---|---|---|---|
| Southbound | 4 | 0 | 6 |
| Eastbound | 1 | 9 | 0 |
| Westbound | 0 | 6 | 0 |
| Northbound | 0 | 0 | 0 |

### Total Vehicles (Noon)

| Approach | Left | Thru | Right |
|---|---|---|---|
| Southbound | N/A | N/A | N/A |
| Eastbound | N/A | N/A | N/A |
| Westbound | N/A | N/A | N/A |
| Northbound | N/A | N/A | N/A |

### HT (NOON)

| Approach | Left | Thru | Right |
|---|---|---|---|
| Southbound | N/A | N/A | N/A |
| Eastbound | N/A | N/A | N/A |
| Westbound | N/A | N/A | N/A |
| Northbound | N/A | N/A | N/A |

### Total Vehicles (PM)

| Approach | Left | Thru | Right |
|---|---|---|---|
| Southbound | 560 | 0 | 565 |
| Eastbound | 72 | 1234 | 0 |
| Westbound | 0 | 748 | 29 |
| Northbound | 0 | 0 | 0 |

### HT (PM)

| Approach | Left | Thru | Right |
|---|---|---|---|
| Southbound | 3 | 0 | 2 |
| Eastbound | 1 | 6 | 0 |
| Westbound | 1 | 3 | 0 |
| Northbound | 0 | 0 | 0 |

### Pedestrians (Crosswalks)

| Crosswalk | Direction | AM | NOON | PM |
|---|---|---|---|---|
| North leg | Eastbound | 0 | 0 | 2 |
| North leg | Westbound | 1 | 0 | 0 |
| West leg | Southbound | 0 | 0 | 0 |
| West leg | Northbound | 0 | 0 | 0 |
| East leg | Southbound | 0 | 0 | 0 |
| East leg | Northbound | 0 | 0 | 0 |
| South leg | Eastbound | 0 | 0 | 0 |
| South leg | Westbound | 0 | 0 | 0 |
| Northwest diagonal | | 0 | 0 | 0 |
| Northeast diagonal | | 0 | 0 | 0 |
| Southwest diagonal | | 0 | 0 | 0 |
| Southeast diagonal | | 0 | 0 | 0 |

Prepared by National Data & Surveying Services

# SR-4 WB Ramps & Balfour Rd

## Peak Hour Turning Movement Count

**ID:** 19-08078-004
**City:** Brentwood

**Day:** Thursday
**Date:** 02/07/2019

**PEAK HOURS**

AM: 07:30 AM - 08:30 AM
NOON: NONE
PM: 03:00 PM - 04:00 PM

**COUNT PERIODS**

AM: 06:00 AM - 09:00 AM
NOON: NONE
PM: 03:00 PM - 06:00 PM

### SR-4 WB Ramps — SOUTHBOUND

| | | | | | | |
|---|---|---|---|---|---|---|
| AM | 0 | 0 | 0 | 0 | 635 | AM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| PM | 0 | 0 | 0 | 0 | 501 | PM |

### EASTBOUND (Balfour Rd)

| AM | NOON | PM | | |
|---|---|---|---|---|
| 823 | 0 | 781 | ⇦ | |
| 5 | 0 | 0 | ↶ | 0 |
| 0 | 0 | 0 | ↱ | 0 |
| 975 | 0 | 1300 | → | 2 |
| 585 | 0 | 488 | ↴ | 1 |
| AM | NOON | PM | | |

### WESTBOUND (Balfour Rd)

| PM | NOON | AM | | |
|---|---|---|---|---|
| 501 | 0 | 635 | ↰ | 0 |
| 645 | 0 | 729 | ← | 2 |
| 0 | 0 | 0 | ↰ | 0 |
| 0 | 0 | 0 | ↰ | 0 |
| 1364 | 0 | 995 | ⇨ | |
| PM | NOON | AM | | |

### CONTROL

Signalized

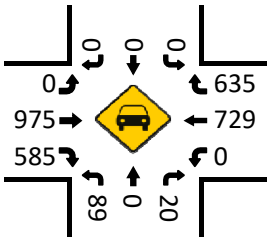
| | | | |
|---|---|---|---|
| TEV | 3038 | 0 | 3134 |
| | AM | NOON | PM |
| PHF | 0.97 | | 0.93 |

### NORTHBOUND — SR-4 WB Ramps

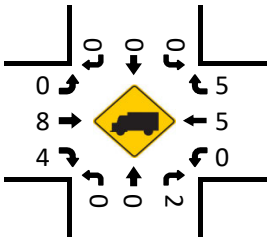
| | | | | | | |
|---|---|---|---|---|---|---|
| PM | 488 | 0 | 136 | 0 | 64 | PM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| AM | 585 | 0 | 89 | 0 | 20 | AM |

Turning movements: 0 0 0 0 | 0 2 0 1

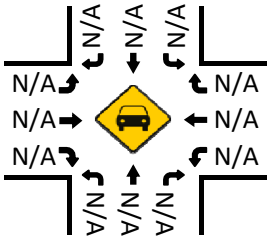
### Total Vehicles (AM)



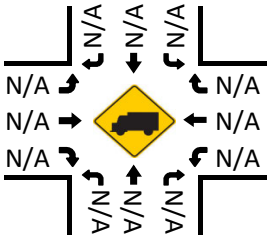

### HT (AM)



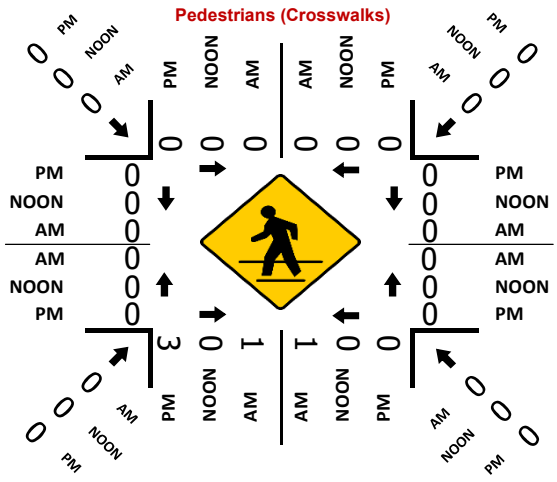

### Total Vehicles (Noon)



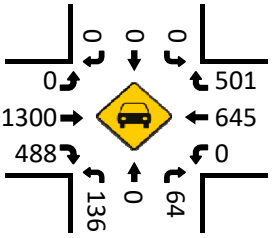

### HT (NOON)



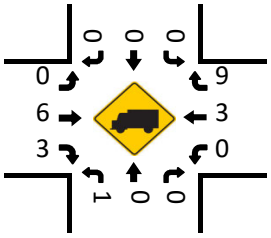

### Pedestrians (Crosswalks)




### Total Vehicles (PM)




### HT (PM)



Prepared by National Data & Surveying Services

# Eagle Rock Way / Cortona Way & Balfour Rd

## Peak Hour Turning Movement Count

**ID:** 19-08078-005
**City:** Brentwood

**Day:** Thursday
**Date:** 02/07/2019

**PEAK HOURS**

AM: 07:15 AM - 08:15 AM
NOON: NONE
PM: 03:00 PM - 04:00 PM

**COUNT PERIODS**

AM: 06:00 AM - 09:00 AM
NOON: NONE
PM: 03:00 PM - 06:00 PM

### Eagle Rock Way / Cortona Way

### SOUTHBOUND

| | | | | | | |
|---|---|---|---|---|---|---|
| AM | 37 | 28 | 86 | 0 | 102 | AM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| PM | 46 | 38 | 165 | 0 | 156 | PM |
| | 0.5 | 0.5 | 1 | 0 | | |

### EASTBOUND (Balfour Rd)

| AM | NOON | PM | |
|---|---|---|---|
| 1139 | 0 | 957 | |
| 1 | 0 | 1 | 0 |
| 42 | 0 | 49 | 1 |
| 885 | 0 | 799 | 2 |
| 15 | 0 | 8 | 1 |

### CONTROL

Signalized

| | | | |
|---|---|---|---|
| TEV | 2896 | 0 | 2748 |
| | AM | NOON | PM |
| PHF | 0.89 | | 0.91 |

### WESTBOUND (Balfour Rd)

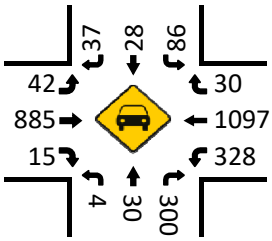
| PM | NOON | AM | |
|---|---|---|---|
| 75 | 0 | 30 | 1 |
| 896 | 0 | 1097 | 2 |
| 278 | 0 | 328 | 2 |
| 45 | 0 | 13 | 0 |
| 1311 | 0 | 1284 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | 0 | 1 | 1 | 1 | | |
| PM | 324 | 0 | 14 | 32 | 302 | PM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| AM | 371 | 0 | 4 | 30 | 300 | AM |

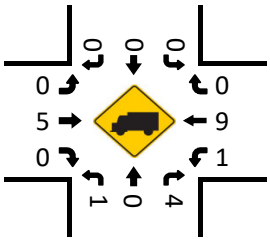
### NORTHBOUND

### Eagle Rock Way / Cortona Way

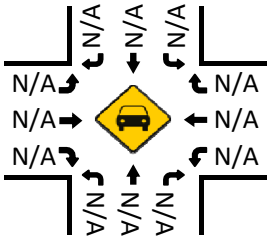
**Total Vehicles (AM)**



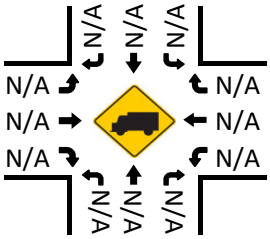

**HT (AM)**



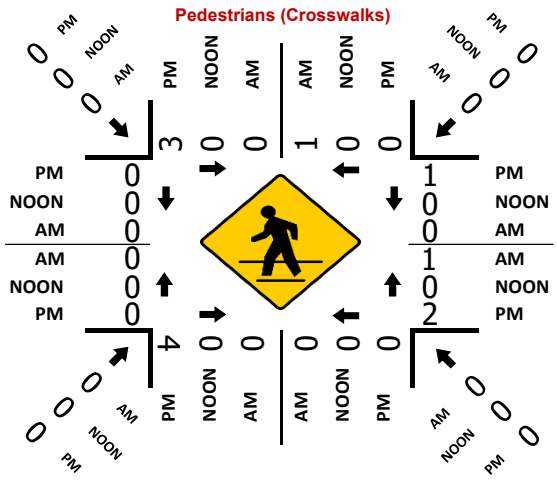

**Total Vehicles (Noon)**



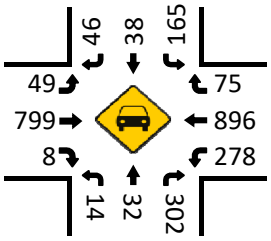

**HT (NOON)**



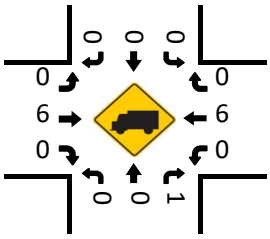

**Pedestrians (Crosswalks)**




**Total Vehicles (PM)**




**HT (PM)**



Prepared by National Data & Surveying Services

# John Muir Pkwy & Balfour Rd

## Peak Hour Turning Movement Count

**ID:** 19-08008-006
**City:** Brentwood

**Day:** Thursday
**Date:** 01/24/2019

| PEAK HOURS | | COUNT PERIODS |
|---|---|---|
| AM | 07:15 AM - 08:15 AM | 06:00 AM - 10:00 AM |
| NOON | NONE | NONE |
| PM | 03:00 PM - 04:00 PM | 03:00 PM - 06:00 PM |

### John Muir Pkwy – SOUTHBOUND

| | Right | Thru | Left | U-Turn | Out |
|---|---|---|---|---|---|
| AM | 19 | 7 | 6 | 0 | 81 |
| NOON | 0 | 0 | 0 | 0 | 0 |
| PM | 37 | 13 | 26 | 0 | 123 |
| Lanes | 0 | 1 | 1 | 0 | |

### Balfour Rd – EASTBOUND

| | AM | NOON | PM | Lanes |
|---|---|---|---|---|
| Out | 1053 | 0 | 927 | |
| U-Turn | 0 | 0 | 1 | 0 |
| Left | 35 | 0 | 72 | 1 |
| Thru | 877 | 0 | 774 | 2 |
| Right | 91 | 0 | 47 | 1 |

### Balfour Rd – WESTBOUND

| | Lanes | PM | NOON | AM |
|---|---|---|---|---|
| Right | 1 | 33 | 0 | 36 |
| Thru | 2 | 840 | 0 | 986 |
| Left | 2 | 54 | 0 | 71 |
| U-Turn | 0 | 26 | 0 | 12 |
| Out | | 876 | 0 | 928 |

### John Muir Pkwy – NORTHBOUND

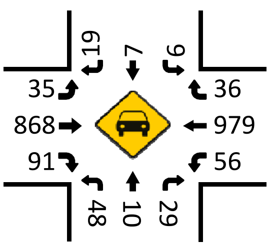
| | Out | U-Turn | Left | Thru | Right |
|---|---|---|---|---|---|
| Lanes | | 0 | 1 | 1 | 1 |
| PM | 115 | 1 | 49 | 18 | 50 |
| NOON | 0 | 0 | 0 | 0 | 0 |
| AM | 171 | 2 | 48 | 10 | 33 |

### CONTROL

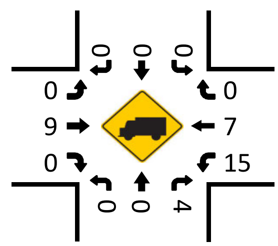
Signalized

| | AM | NOON | PM |
|---|---|---|---|
| TEV | 2233 | 0 | 2041 |
| PHF | 0.90 | | 0.89 |

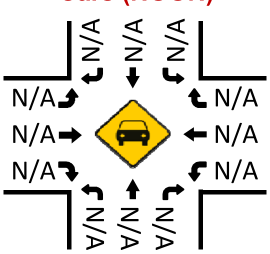
**Cars (AM)**



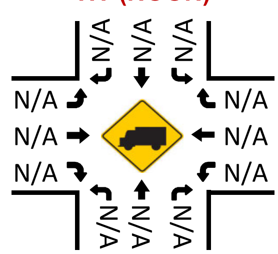

**HT (AM)**



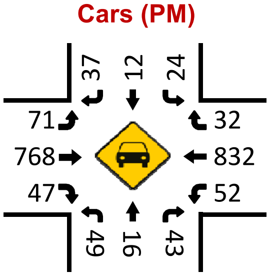

**Cars (NOON)**



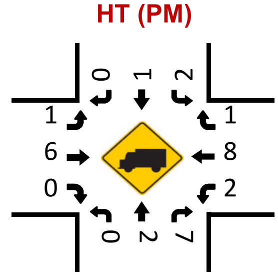

**HT (NOON)**



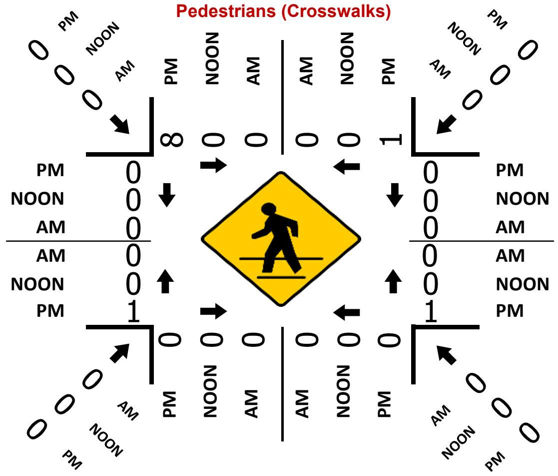

**Cars (PM)**




**HT (PM)**




**Pedestrians (Crosswalks)**



Prepared by National Data & Surveying Services

# Foothill Dr/E Country Club Dr & Balfour Rd

## Peak Hour Turning Movement Count

**ID:** 19-08008-007
**City:** Brentwood

**Day:** Thursday
**Date:** 01/24/2019

**PEAK HOURS**

AM: 07:15 AM - 08:15 AM
NOON: NONE
PM: 03:00 PM - 04:00 PM

**COUNT PERIODS**

AM: 06:00 AM - 10:00 AM
NOON: NONE
PM: 03:00 PM - 06:00 PM

### Foothill Dr/E Country Club Dr — SOUTHBOUND

| | | | | | | |
|---|---|---|---|---|---|---|
| AM | 218 | 120 | 136 | 0 | 198 | AM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| PM | 31 | 41 | 79 | 1 | 302 | PM |
| | 0.5 | 0.5 | 1 | 0 | | |

### EASTBOUND (Balfour Rd)

| AM | NOON | PM | | |
|---|---|---|---|---|
| 1412 | 0 | 808 | | |
| 14 | 0 | 1 | 0 | |
| 55 | 0 | 103 | 1 | |
| 837 | 0 | 763 | 2 | |
| 105 | 0 | 126 | 0 | |
| AM | NOON | PM | | |

### WESTBOUND (Balfour Rd)

| PM | NOON | AM | | |
|---|---|---|---|---|
| 141 | 0 | 44 | 0 | |
| 697 | 0 | 976 | 2 | |
| 71 | 0 | 32 | 1 | |
| 2 | 0 | 1 | 0 | |
| 893 | 0 | 1015 | | |
| PM | NOON | AM | | |

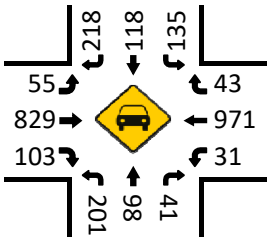
**CONTROL:** Signalized

| | | | |
|---|---|---|---|
| TEV | 2882 | 0 | 2242 |
| | AM | NOON | PM |
| PHF | 0.89 | | 0.79 |

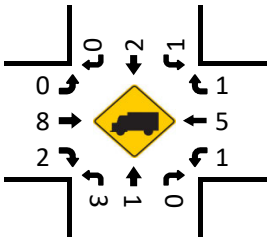
### NORTHBOUND — Foothill Dr/E Country Club Dr

| | | | | | | |
|---|---|---|---|---|---|---|
| | 0 | 1 | 1 | 1 | | |
| PM | 239 | 1 | 79 | 57 | 49 | PM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| AM | 257 | 0 | 204 | 99 | 41 | AM |

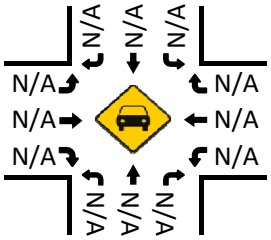
### Cars (AM)



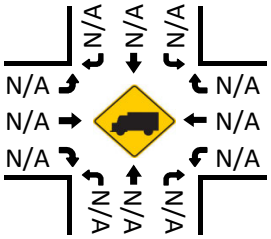

### HT (AM)



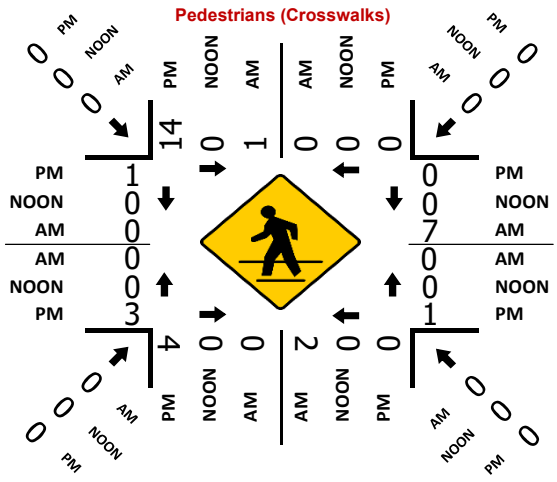

### Cars (NOON)



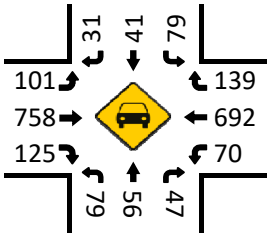

### HT (NOON)



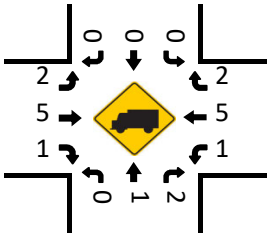

### Pedestrians (Crosswalks)




### Cars (PM)




### HT (PM)



Prepared by National Data & Surveying Services

# Mountain View Dr & Balfour Rd

## Peak Hour Turning Movement Count

**ID:** 19-08008-008
**City:** Brentwood

**Day:** Thursday
**Date:** 01/24/2019

| | PEAK HOURS | COUNT PERIODS |
|---|---|---|
| AM | 07:15 AM - 08:15 AM | 06:00 AM - 10:00 AM |
| NOON | NONE | NONE |
| PM | 03:00 PM - 04:00 PM | 03:00 PM - 06:00 PM |

### Mountain View Dr — SOUTHBOUND

| | Right | Through | Left | U-Turn | Exit |
|---|---|---|---|---|---|
| AM | 0 | 0 | 0 | 0 | 0 |
| NOON | 0 | 0 | 0 | 0 | 0 |
| PM | 0 | 0 | 0 | 0 | 0 |
| Red | 0 | 0 | 0 | 0 | |

### Balfour Rd — EASTBOUND

| | AM | NOON | PM | Red |
|---|---|---|---|---|
| Exit | 1387 | 0 | 771 | |
| U-Turn | 0 | 0 | 0 | 0 |
| Left | 0 | 0 | 0 | 0 |
| Through | 920 | 0 | 918 | 2 |
| Right | 33 | 0 | 83 | 0 |

### Balfour Rd — WESTBOUND

| | Red | PM | NOON | AM |
|---|---|---|---|---|
| Right | 0 | 0 | 0 | 0 |
| Through | 2 | 750 | 0 | 1365 |
| Left | 1 | 56 | 0 | 5 |
| U-Turn | 0 | 5 | 0 | 0 |
| Exit | | 964 | 0 | 991 |

### CONTROL

1-Way Stop (NB)

| | AM | NOON | PM |
|---|---|---|---|
| TEV | 2416 | 0 | 1874 |
| PHF | 0.93 | | 0.74 |

### Mountain View Dr — NORTHBOUND

| | Exit | U-Turn | Left | Through | Right |
|---|---|---|---|---|---|
| Red | | 0 | 0 | 1 | 0 |
| PM | 139 | 0 | 21 | 0 | 41 |
| NOON | 0 | 0 | 0 | 0 | 0 |
| AM | 38 | 0 | 22 | 0 | 71 |

### Cars (AM)

| Approach | Values |
|---|---|
| Southbound | 0, 0, 0 |
| Eastbound | 0, 911, 33 |
| Westbound | 0, 1357, 5 |
| Northbound | 22, 0, 70 |

### HT (AM)

| Approach | Values |
|---|---|
| Southbound | 0, 0, 0 |
| Eastbound | 0, 9, 0 |
| Westbound | 0, 8, 0 |
| Northbound | 0, 0, 1 |

### Cars (NOON)

| Approach | Values |
|---|---|
| Southbound | N/A, N/A, N/A |
| Eastbound | N/A, N/A, N/A |
| Westbound | N/A, N/A, N/A |
| Northbound | N/A, N/A, N/A |

### HT (NOON)

| Approach | Values |
|---|---|
| Southbound | N/A, N/A, N/A |
| Eastbound | N/A, N/A, N/A |
| Westbound | N/A, N/A, N/A |
| Northbound | N/A, N/A, N/A |

### Cars (PM)

| Approach | Values |
|---|---|
| Southbound | 0, 0, 0 |
| Eastbound | 0, 911, 83 |
| Westbound | 0, 744, 56 |
| Northbound | 21, 0, 40 |

### HT (PM)

| Approach | Values |
|---|---|
| Southbound | 0, 0, 0 |
| Eastbound | 0, 7, 0 |
| Westbound | 0, 6, 0 |
| Northbound | 0, 0, 1 |

### Pedestrians (Crosswalks)

| Crosswalk | PM | NOON | AM | AM | NOON | PM |
|---|---|---|---|---|---|---|
| North | 0 | 0 | 0 | 0 | 0 | 0 |
| West | 0 | 0 | 0 | 0 | 0 | 0 |
| East | 0 | 0 | 0 | 0 | 0 | 0 |
| South | 11 | 0 | 0 | 1 | 0 | 1 |

| Diagonal | PM | NOON | AM |
|---|---|---|---|
| Northwest | 0 | 0 | 0 |
| Northeast | 0 | 0 | 0 |
| Southwest | 0 | 0 | 0 |
| Southeast | 0 | 0 | 0 |

Prepared by National Data & Surveying Services

# American Ave/W Country Club Dr & Balfour Rd

## Peak Hour Turning Movement Count

**ID:** 19-08008-009
**City:** Brentwood

**Day:** Thursday
**Date:** 01/24/2019

| PEAK HOURS | | COUNT PERIODS |
|---|---|---|
| AM | 07:15 AM - 08:15 AM | 06:00 AM - 10:00 AM |
| NOON | NONE | NONE |
| PM | 03:00 PM - 04:00 PM | 03:00 PM - 06:00 PM |

### American Ave/W Country Club Dr — SOUTHBOUND

| | Right | Thru | Left | U-Turn | Departing |
|---|---|---|---|---|---|
| AM | 7 | 468 | 69 | 0 | 347 |
| NOON | 0 | 0 | 0 | 0 | 0 |
| PM | 26 | 94 | 165 | 0 | 489 |
| Lanes | 0.5 | 0.5 | 1 | 0 | |

### Balfour Rd — EASTBOUND

| | AM | NOON | PM | Lanes |
|---|---|---|---|---|
| Departing | 551 | 0 | 381 | |
| U-Turn | 0 | 0 | 0 | 0 |
| Left | 13 | 0 | 45 | 1 |
| Thru | 203 | 0 | 312 | 1.5 |
| Right | 322 | 0 | 34 | 0.5 |

### Balfour Rd — WESTBOUND

| | Lanes | PM | NOON | AM |
|---|---|---|---|---|
| Right | 0 | 211 | 0 | 89 |
| Thru | 2 | 285 | 0 | 416 |
| Left | 2 | 281 | 0 | 860 |
| U-Turn | 0 | 0 | 0 | 0 |
| Departing | | 1014 | 0 | 957 |

### American Ave/W Country Club Dr — NORTHBOUND

| | Departing | U-Turn | Left | Thru | Right |
|---|---|---|---|---|---|
| Lanes | | 0 | 1 | 1 | 2 |
| PM | 409 | 0 | 70 | 233 | 537 |
| NOON | 0 | 0 | 0 | 0 | 0 |
| AM | 1650 | 0 | 128 | 245 | 685 |

### CONTROL

Signalized

| | AM | NOON | PM |
|---|---|---|---|
| TEV | 3505 | 0 | 2293 |
| PHF | 0.93 | | 0.71 |

### Cars (AM)

| Approach | Left | Thru | Right | U-Turn |
|---|---|---|---|---|
| SB | 69 | 467 | 7 | |
| EB | 12 | 195 | 322 | |
| WB | 853 | 415 | 89 | |
| NB | 128 | 244 | 681 | |

### HT (AM)

| Approach | Left | Thru | Right |
|---|---|---|---|
| SB | 0 | 1 | 0 |
| EB | 1 | 8 | 0 |
| WB | 7 | 1 | 0 |
| NB | 0 | 1 | 4 |

### Cars (NOON)

| Approach | Left | Thru | Right |
|---|---|---|---|
| SB | N/A | N/A | N/A |
| EB | N/A | N/A | N/A |
| WB | N/A | N/A | N/A |
| NB | N/A | N/A | N/A |

### HT (NOON)

| Approach | Left | Thru | Right |
|---|---|---|---|
| SB | N/A | N/A | N/A |
| EB | N/A | N/A | N/A |
| WB | N/A | N/A | N/A |
| NB | N/A | N/A | N/A |

### Cars (PM)

| Approach | Left | Thru | Right |
|---|---|---|---|
| SB | 165 | 93 | 26 |
| EB | 44 | 308 | 34 |
| WB | 280 | 282 | 211 |
| NB | 70 | 233 | 536 |

### HT (PM)

| Approach | Left | Thru | Right |
|---|---|---|---|
| SB | 0 | 1 | 0 |
| EB | 1 | 4 | 0 |
| WB | 1 | 3 | 0 |
| NB | 0 | 0 | 1 |

### Pedestrians (Crosswalks)

| Crosswalk | Direction | AM | NOON | PM |
|---|---|---|---|---|
| North | Eastbound | 0 | 0 | 43 |
| North | Westbound | 39 | 0 | 1 |
| West | Southbound | 299 | 0 | 29 |
| West | Northbound | 27 | 0 | 502 |
| East | Southbound | 0 | 0 | 0 |
| East | Northbound | 0 | 0 | 0 |
| South | Eastbound | 0 | 0 | 41 |
| South | Westbound | 8 | 0 | 2 |
| NW diagonal | | 0 | 0 | 0 |
| NE diagonal | | 0 | 0 | 0 |
| SW diagonal | | 0 | 0 | 0 |
| SE diagonal | | 0 | 0 | 0 |

Prepared by National Data & Surveying Services

# Deer Valley Rd & Balfour Rd

## Peak Hour Turning Movement Count

**ID:** 19-08008-010
**City:** Brentwood

**Day:** Thursday
**Date:** 01/24/2019

**PEAK HOURS**

AM: 07:15 AM - 08:15 AM
NOON: NONE
PM: 03:00 PM - 04:00 PM

**COUNT PERIODS**

AM: 06:00 AM - 10:00 AM
NOON: NONE
PM: 03:00 PM - 06:00 PM

### SOUTHBOUND (Deer Valley Rd)

| | | | | | | |
|---|---|---|---|---|---|---|
| AM | 0 | 37 | 366 | 0 | 359 | AM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| PM | 0 | 29 | 317 | 0 | 400 | PM |

### EASTBOUND (Balfour Rd)

| AM | NOON | PM | | |
|---|---|---|---|---|
| 1 | 0 | 1 | | |
| 0 | 0 | 0 | 0 | |
| 0 | 0 | 0 | 0 | |
| 1 | 0 | 1 | 1 | |
| 0 | 0 | 0 | 0 | |
| AM | NOON | PM | | |

### WESTBOUND (Balfour Rd)

| PM | NOON | AM | | |
|---|---|---|---|---|
| | | | 0.5 | 363 | 0 | 336 |
| | | | 0 | 1 | 0 | 1 |
| | | | 0.5 | 33 | 0 | 77 |
| | | | 0 | 0 | 0 | 0 |
| | | | | 352 | 0 | 396 |
| PM | NOON | AM | | |

### NORTHBOUND (Deer Valley Rd)

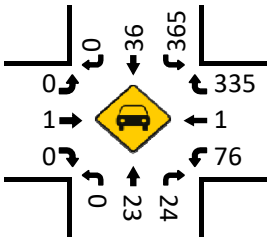
| | | | | | | |
|---|---|---|---|---|---|---|
| PM | 62 | 0 | 0 | 37 | 34 | PM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| AM | 114 | 0 | 0 | 23 | 29 | AM |

| | | | |
|---|---|---|---|
| 0 | 1 | 0 | 0 |
| | | 0 | 0 | 1 | 0 |

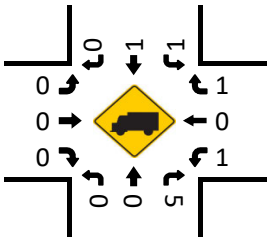
**CONTROL:** 1-Way Stop (WB)

| | | | |
|---|---|---|---|
| TEV | 870 | 0 | 815 |
| | AM | NOON | PM |
| PHF | 0.94 | | 0.93 |

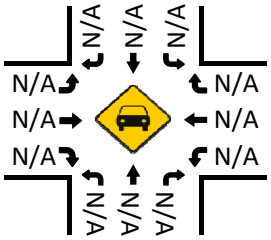
### Cars (AM)



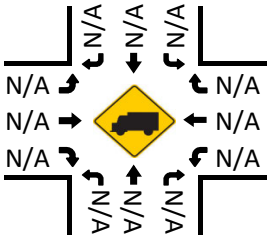

### HT (AM)



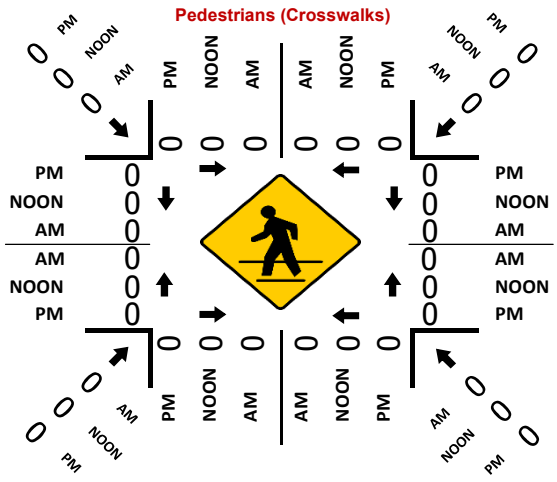

### Cars (NOON)



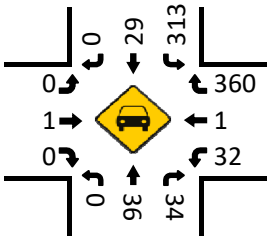

### HT (NOON)



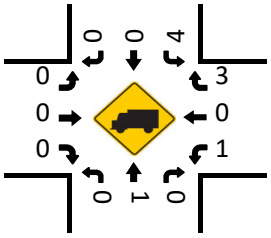

### Pedestrians (Crosswalks)




### Cars (PM)




### HT (PM)



Prepared by National Data & Surveying Services

# SR 4/Vasco Rd & Marsh Creek Rd

## Peak Hour Turning Movement Count

**ID:** 19-08008-011
**City:** Brentwood

**Day:** Thursday
**Date:** 01/24/2019

| PEAK HOURS | COUNT PERIODS |
|---|---|
| 07:45 AM - 08:45 AM | 06:00 AM - 10:00 AM |
| NONE | NONE |
| 04:15 PM - 05:15 PM | 03:00 PM - 06:00 PM |

### SR 4/Vasco Rd — SOUTHBOUND

| | | | | | | |
|---|---|---|---|---|---|---|
| AM | 48 | 836 | 317 | 0 | 940 | AM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| PM | 27 | 442 | 546 | 0 | 1401 | PM |

### EASTBOUND (Marsh Creek Rd)

| AM | NOON | PM | |
|---|---|---|---|
| 210 | 0 | 106 | |
| 0 | 0 | 0 | 0 |
| 26 | 0 | 51 | 1 |
| 42 | 0 | 190 | 2 |
| 33 | 0 | 16 | 0 |
| AM | NOON | PM | |

### WESTBOUND (Marsh Creek Rd)

| PM | NOON | AM | |
|---|---|---|---|
| 430 | 0 | 488 | 1 |
| 48 | 0 | 145 | 1 |
| 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 |
| 736 | 0 | 359 | |
| PM | NOON | AM | |

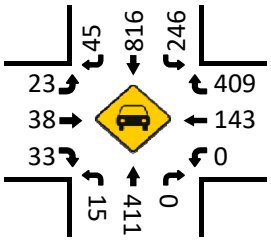
**CONTROL:** Signalized

| | | | |
|---|---|---|---|
| TEV | 2378 | 0 | 2701 |
| | AM | NOON | PM |
| PHF | 0.97 | | 0.96 |

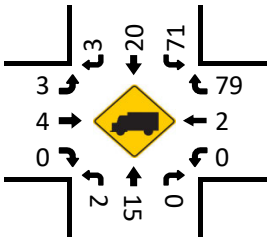
### SR 4/Vasco Rd — NORTHBOUND

| | | | | | | |
|---|---|---|---|---|---|---|
| PM | 458 | 0 | 31 | 920 | 0 | PM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| AM | 869 | 0 | 17 | 426 | 0 | AM |

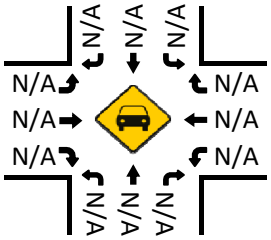
Cars (AM)



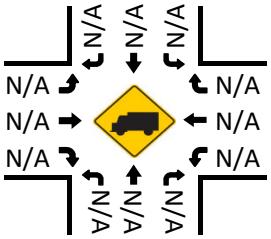

HT (AM)



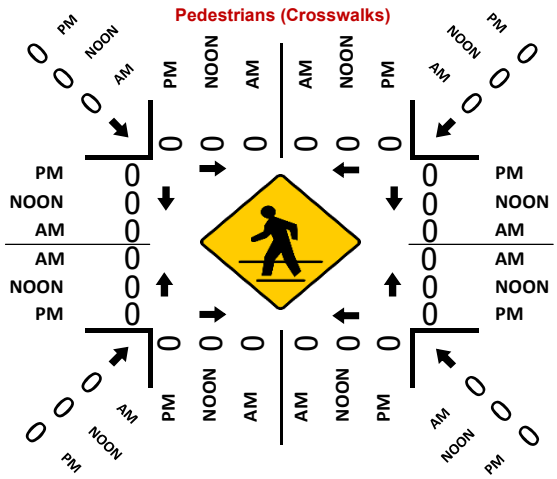

Cars (NOON)



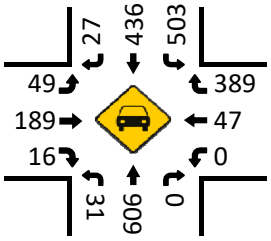

HT (NOON)



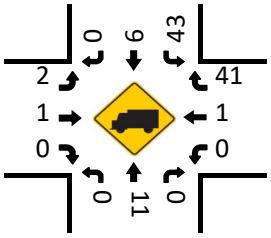

Pedestrians (Crosswalks)




Cars (PM)




HT (PM)



Prepared by National Data & Surveying Services

# Vasco Rd & Walnut Blvd

## Peak Hour Turning Movement Count

**ID:** 19-08008-012
**City:** Brentwood

**Day:** Thursday
**Date:** 01/24/2019

**PEAK HOURS**

AM: 07:15 AM - 08:15 AM
NOON: NONE
PM: 03:45 PM - 04:45 PM

**COUNT PERIODS**

AM: 06:00 AM - 10:00 AM
NOON: NONE
PM: 03:00 PM - 06:00 PM

### Vasco Rd — SOUTHBOUND

| | | | | | | |
|---|---|---|---|---|---|---|
| AM | 4 | 850 | 2 | 0 | 400 | AM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| PM | 4 | 477 | 3 | 0 | 968 | PM |

### Walnut Blvd — EASTBOUND

| AM | NOON | PM | | |
|---|---|---|---|---|
| 11 | 0 | 10 | ⇦ | |
| 0 | 0 | 0 | ↶ | 0 |
| 3 | 0 | 8 | ↱ | 1 |
| 4 | 0 | 13 | → | 1 |
| 0 | 0 | 2 | ↳ | 0 |
| AM | NOON | PM | | |

### Walnut Blvd — WESTBOUND

| PM | NOON | AM | | |
|---|---|---|---|---|
| 2 | 0 | 1 | ↰ | 0 |
| 6 | 0 | 3 | ← | 1 |
| 151 | 0 | 438 | ↰ | 1 |
| 0 | 0 | 0 | ↶ | 0 |
| 516 | 0 | 138 | ⇨ | |
| PM | NOON | AM | | |

0 2 1 0 (EB turning movements)
0 1 1 1 (WB turning movements)

**CONTROL:** Signalized

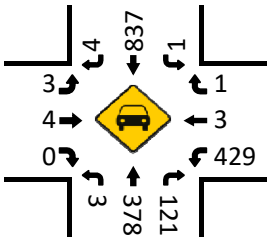
| | | | |
|---|---|---|---|
| TEV | 1837 | 0 | 2124 |
| | AM | NOON | PM |
| PHF | 0.98 | | 0.95 |

### Vasco Rd — NORTHBOUND

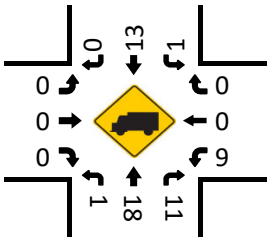
| | | | | | | |
|---|---|---|---|---|---|---|
| PM | 630 | 0 | 0 | 958 | 500 | PM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| AM | 1288 | 0 | 4 | 396 | 132 | AM |

Vasco Rd

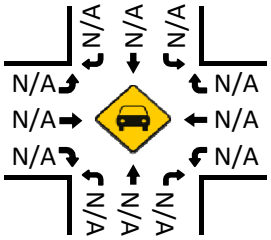
### Cars (AM)



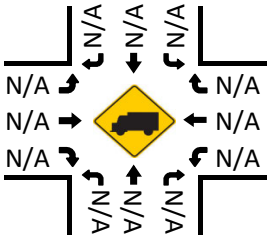

### HT (AM)



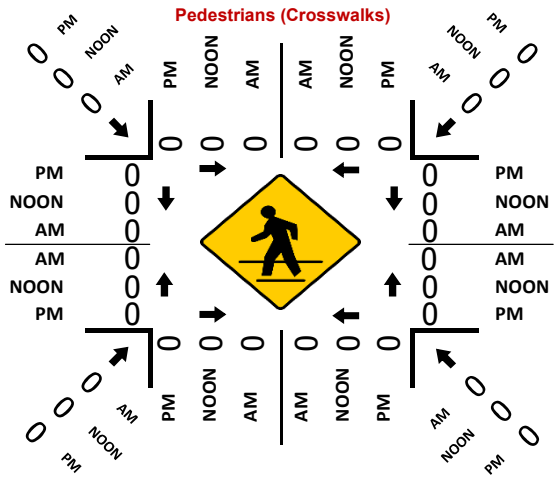

### Cars (NOON)



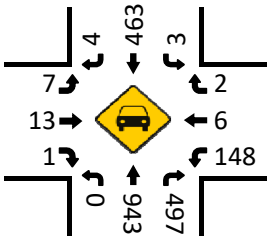

### HT (NOON)



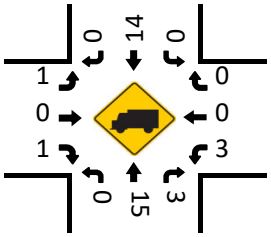

### Pedestrians (Crosswalks)




### Cars (PM)




### HT (PM)



Prepared by National Data & Surveying Services

# Vasco Rd & Camino Diablo Rd

## Peak Hour Turning Movement Count

**ID:** 19-08008-013
**City:** Brentwood

**Day:** Thursday
**Date:** 01/24/2019

| PEAK HOURS | | COUNT PERIODS |
|---|---|---|
| AM | 07:45 AM - 08:45 AM | 06:00 AM - 10:00 AM |
| NOON | NONE | NONE |
| PM | 03:45 PM - 04:45 PM | 03:00 PM - 06:00 PM |

### Vasco Rd – SOUTHBOUND

| | | | | | Departing |
|---|---|---|---|---|---|
| AM | 5 | 1021 | 229 | 0 | 539 |
| NOON | 0 | 0 | 0 | 0 | 0 |
| PM | 81 | 317 | 206 | 0 | 1466 |
| Lanes | 0.5 | 1.5 | 1 | 0 | |

### Camino Diablo Rd – EASTBOUND

| | AM | NOON | PM | Lanes |
|---|---|---|---|---|
| Departing | 104 | 0 | 147 | |
| U-turn | 0 | 0 | 0 | 0 |
| Left | 2 | 0 | 0 | 1 |
| Through | 19 | 0 | 185 | 0.5 |
| Right | 21 | 0 | 11 | 0.5 |

### Camino Diablo Rd – WESTBOUND

| Lanes | | PM | NOON | AM |
|---|---|---|---|---|
| 1 | Right | 314 | 0 | 267 |
| 0.5 | Through | 37 | 0 | 84 |
| 1.5 | Left | 58 | 0 | 192 |
| 0 | U-turn | 0 | 0 | 0 |
| | Departing | 620 | 0 | 424 |

### Vasco Rd – NORTHBOUND

| | Departing | | | | |
|---|---|---|---|---|---|
| Lanes | | 0 | 1 | 1.5 | 0.5 |
| PM | 386 | 0 | 29 | 1152 | 229 |
| NOON | 0 | 0 | 0 | 0 | 0 |
| AM | 1234 | 0 | 15 | 270 | 176 |

### CONTROL

Signalized

| | AM | NOON | PM |
|---|---|---|---|
| TEV | 2301 | 0 | 2619 |
| PHF | 0.97 | | 0.95 |

### Cars (AM)
North: 1, 998, 225 · East: 260, 83, 189 · South: 13, 246, 171 · West: 0, 17, 19

### HT (AM)
North: 4, 23, 4 · East: 7, 1, 3 · South: 2, 24, 5 · West: 2, 2, 2

### Cars (NOON)
All movements: N/A

### HT (NOON)
All movements: N/A

### Cars (PM)
North: 81, 304, 204 · East: 311, 35, 58 · South: 28, 114, 225 · West: 0, 183, 11

### HT (PM)
North: 0, 13, 2 · East: 3, 2, 0 · South: 1, 12, 4 · West: 0, 2, 0

### Pedestrians (Crosswalks)
All crosswalk and diagonal counts (AM, NOON, PM): 0

Prepared by National Data & Surveying Services

# SR 4 EB Ramps & Sand Creek Rd

## Peak Hour Turning Movement Count

**ID:** 19-08008-014
**City:** Brentwood

**Day:** Thursday
**Date:** 01/24/2019

**PEAK HOURS**

AM: 07:15 AM - 08:15 AM
NOON: NONE
PM: 05:00 PM - 06:00 PM

**COUNT PERIODS**

AM: 06:00 AM - 10:00 AM
NOON: NONE
PM: 03:00 PM - 06:00 PM

### SR 4 EB Ramps — SOUTHBOUND

| | | | | | | |
|---|---|---|---|---|---|---|
| AM | 1 | 0 | 752 | 0 | 313 | AM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| PM | 0 | 0 | 1287 | 0 | 147 | PM |

### EASTBOUND — Sand Creek Rd

| AM | NOON | PM | |
|---|---|---|---|
| 1 | 0 | 0 | |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 |
| AM | NOON | PM | |

0 0 2 0

### WESTBOUND — Sand Creek Rd

| PM | NOON | AM | |
|---|---|---|---|
| 147 | 0 | 313 | 0 |
| 0 | 0 | 0 | 2 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 |
| 1287 | 0 | 754 | |
| PM | NOON | AM | |

0 0 0 0

### NORTHBOUND — SR 4 EB Ramps

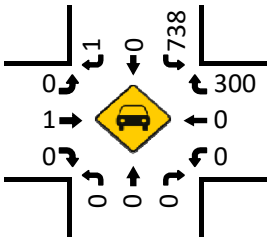
| | | | | | | |
|---|---|---|---|---|---|---|
| PM | 0 | 0 | 0 | 0 | 0 | PM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| AM | 0 | 0 | 0 | 0 | 0 | AM |

### CONTROL

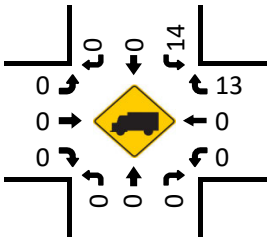
Signalized

| | | | |
|---|---|---|---|
| TEV | 1068 | 0 | 1434 |
| | AM | NOON | PM |
| PHF | 0.78 | | 0.98 |

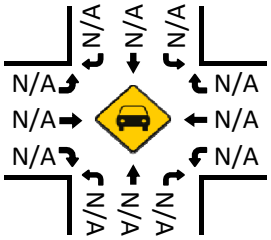
### Cars (AM)



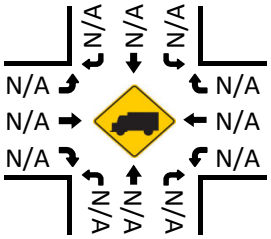

### HT (AM)



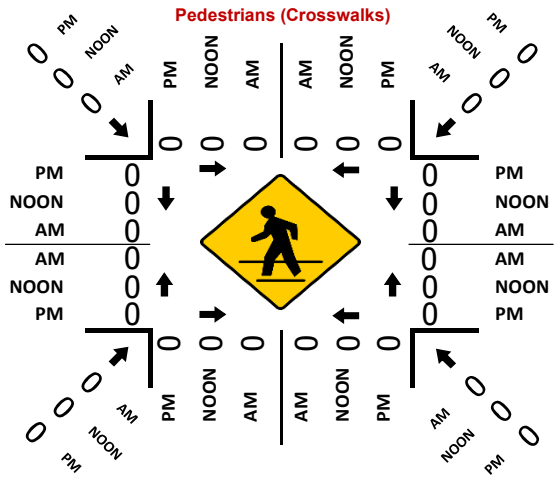

### Cars (NOON)



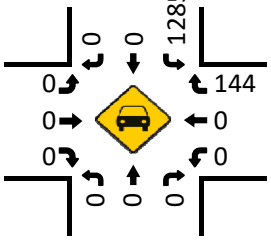

### HT (NOON)



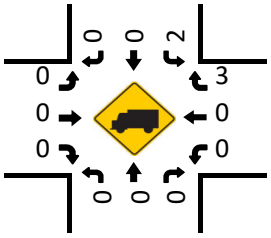

### Pedestrians (Crosswalks)




### Cars (PM)




### HT (PM)



Prepared by National Data & Surveying Services

# SR 4 WB Ramps & Sand Creek Rd

## Peak Hour Turning Movement Count

**ID:** 19-08008-015
**City:** Brentwood

**Day:** Thursday
**Date:** 01/24/2019

**PEAK HOURS**

AM: 07:30 AM - 08:30 AM
NOON: NONE
PM: 05:00 PM - 06:00 PM

**COUNT PERIODS**

AM: 06:00 AM - 10:00 AM
NOON: NONE
PM: 03:00 PM - 06:00 PM

### SR 4 WB Ramps — SOUTHBOUND

| | | | | | | |
|---|---|---|---|---|---|---|
| AM | 0 | 0 | 0 | 0 | 956 | AM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| PM | 0 | 0 | 0 | 0 | 917 | PM |

### Sand Creek Rd — EASTBOUND

| AM | NOON | PM | | |
|---|---|---|---|---|
| 263 | 0 | 142 | | |
| 0 | 0 | 0 | 0 | |
| 6 | 0 | 10 | 2 | |
| 783 | 0 | 1284 | 3 | |
| 0 | 0 | 0 | 0 | |
| AM | NOON | PM | | |

### WESTBOUND — Sand Creek Rd

| PM | NOON | AM | |
|---|---|---|---|
| 902 | 0 | 947 | 1.5 |
| 138 | 0 | 247 | 1.5 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 1480 | 0 | 919 | |
| PM | NOON | AM | |

**CONTROL:** Signalized

| | | | |
|---|---|---|---|
| TEV | 2138 | 0 | 2539 |
| | AM | NOON | PM |
| PHF | 0.89 | | 0.95 |

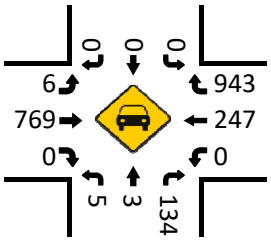
0 0 0 0

0 1.5 0.5 1

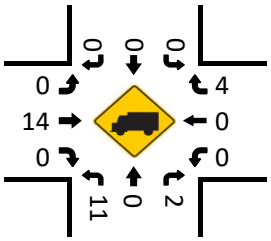
### NORTHBOUND — SR 4 WB Ramps

| | | | | | | |
|---|---|---|---|---|---|---|
| PM | 0 | 0 | 4 | 5 | 196 | PM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| AM | 0 | 0 | 16 | 3 | 136 | AM |

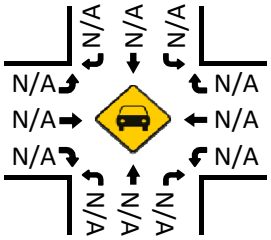
### Cars (AM)



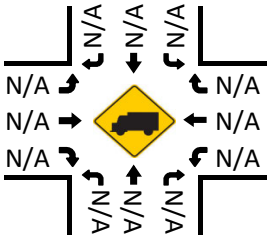

### HT (AM)



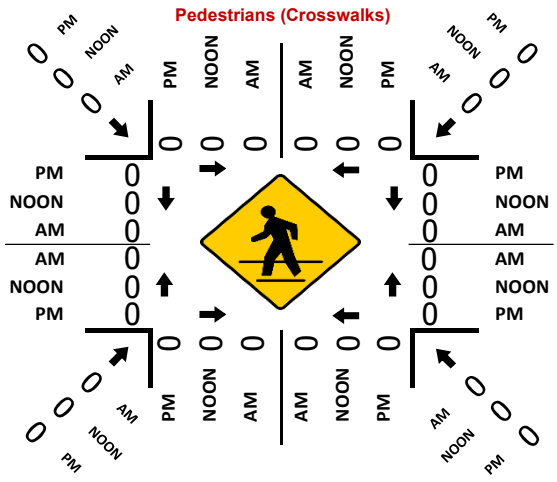

### Cars (NOON)



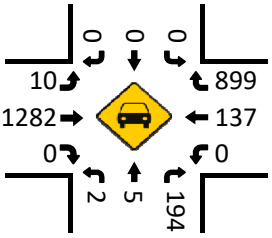

### HT (NOON)



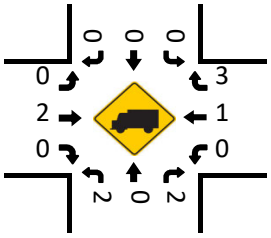

### Pedestrians (Crosswalks)




### Cars (PM)

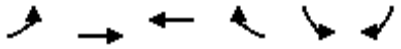



### HT (PM)



# APPENDIX B: LOS CALCULATION WORKSHEETS





| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 1 | 0 | 314 | 752 | 1 |
| Future Volume (veh/h) | 0 | 1 | 0 | 314 | 752 | 1 |
| Number | 5 | 2 | 6 | 16 | 3 | 18 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 0 | 1 | 0 | 403 | 964 | 1 |
| Adj No. of Lanes | 1 | 1 | 1 | 1 | 2 | 1 |
| Peak Hour Factor | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 222 | 566 | 566 | 481 | 1442 | 663 |
| Arrive On Green | 0.00 | 0.30 | 0.00 | 0.30 | 0.42 | 0.42 |
| Sat Flow, veh/h | 978 | 1863 | 1863 | 1583 | 3442 | 1583 |
| Grp Volume(v), veh/h | 0 | 1 | 0 | 403 | 964 | 1 |
| Grp Sat Flow(s),veh/h/ln | 978 | 1863 | 1863 | 1583 | 1721 | 1583 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 7.7 | 7.3 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 0.0 | 0.0 | 7.7 | 7.3 | 0.0 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 222 | 566 | 566 | 481 | 1442 | 663 |
| V/C Ratio(X) | 0.00 | 0.00 | 0.00 | 0.84 | 0.67 | 0.00 |
| Avail Cap(c_a), veh/h | 301 | 717 | 717 | 609 | 8349 | 3841 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 0.0 | 7.9 | 0.0 | 10.6 | 7.6 | 5.5 |
| Incr Delay (d2), s/veh | 0.0 | 0.0 | 0.0 | 8.1 | 0.5 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 0.0 | 0.0 | 4.4 | 3.5 | 0.0 |
| LnGrp Delay(d),s/veh | 0.0 | 7.9 | 0.0 | 18.7 | 8.2 | 5.5 |
| LnGrp LOS | | A | | B | A | A |
| Approach Vol, veh/h | | 1 | 403 | | 965 | |
| Approach Delay, s/veh | | 7.9 | 18.7 | | 8.2 | |
| Approach LOS | | A | B | | A | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 14.4 | | | | 14.4 | | 18.1 |
| Change Period (Y+Rc), s | | 4.5 | | | | 4.5 | | 4.5 |
| Max Green Setting (Gmax), s | | 12.5 | | | | 12.5 | | 78.8 |
| Max Q Clear Time (g_c+I1), s | | 2.0 | | | | 9.7 | | 9.3 |
| Green Ext Time (p_c), s | | 0.0 | | | | 0.4 | | 4.3 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 11.3 |
| HCM 2010 LOS | B |

Notes



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 6 | 783 | 0 | 0 | 247 | 947 | 16 | 3 | 136 | 0 | 0 | 0 |
| Future Volume (veh/h) | 6 | 783 | 0 | 0 | 247 | 947 | 16 | 3 | 136 | 0 | 0 | 0 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 7 | 4 | 14 | | | |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | | | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 0 | 0 | 1863 | 1863 | 1863 | 1863 | 1863 | | | |
| Adj Flow Rate, veh/h | 7 | 880 | 0 | 0 | 278 | 1064 | 20 | 0 | 153 | | | |
| Adj No. of Lanes | 2 | 3 | 0 | 0 | 1 | 2 | 2 | 0 | 1 | | | |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | | | |
| Percent Heavy Veh, % | 2 | 2 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | | | |
| Cap, veh/h | 23 | 3050 | 0 | 0 | 918 | 1561 | 476 | 0 | 212 | | | |
| Arrive On Green | 0.01 | 0.60 | 0.00 | 0.00 | 0.49 | 0.49 | 0.13 | 0.00 | 0.13 | | | |
| Sat Flow, veh/h | 3442 | 5253 | 0 | 0 | 1863 | 3167 | 3548 | 0 | 1583 | | | |
| Grp Volume(v), veh/h | 7 | 880 | 0 | 0 | 278 | 1064 | 20 | 0 | 153 | | | |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1695 | 0 | 0 | 1863 | 1583 | 1774 | 0 | 1583 | | | |
| Q Serve(g_s), s | 0.1 | 3.3 | 0.0 | 0.0 | 3.5 | 10.2 | 0.2 | 0.0 | 3.7 | | | |
| Cycle Q Clear(g_c), s | 0.1 | 3.3 | 0.0 | 0.0 | 3.5 | 10.2 | 0.2 | 0.0 | 3.7 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 1.00 | 1.00 | | 1.00 | | | |
| Lane Grp Cap(c), veh/h | 23 | 3050 | 0 | 0 | 918 | 1561 | 476 | 0 | 212 | | | |
| V/C Ratio(X) | 0.31 | 0.29 | 0.00 | 0.00 | 0.30 | 0.68 | 0.04 | 0.00 | 0.72 | | | |
| Avail Cap(c_a), veh/h | 1382 | 9404 | 0 | 0 | 2510 | 4267 | 4069 | 0 | 1816 | | | |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | | | |
| Uniform Delay (d), s/veh | 19.7 | 3.9 | 0.0 | 0.0 | 6.0 | 7.7 | 15.0 | 0.0 | 16.5 | | | |
| Incr Delay (d2), s/veh | 7.6 | 0.1 | 0.0 | 0.0 | 0.2 | 0.5 | 0.0 | 0.0 | 4.5 | | | |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| %ile BackOfQ(50%),veh/ln | 0.1 | 1.6 | 0.0 | 0.0 | 1.8 | 4.5 | 0.1 | 0.0 | 3.4 | | | |
| LnGrp Delay(d),s/veh | 27.3 | 3.9 | 0.0 | 0.0 | 6.2 | 8.2 | 15.1 | 0.0 | 21.1 | | | |
| LnGrp LOS | C | A | | | A | A | B | | C | | | |
| Approach Vol, veh/h | | 887 | | | 1342 | | | 173 | | | | |
| Approach Delay, s/veh | | 4.1 | | | 7.8 | | | 20.4 | | | | |
| Approach LOS | | A | | | A | | | C | | | | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | |
| Phs Duration (G+Y+Rc), s | | 29.2 | | 10.6 | 4.3 | 24.9 | | |
| Change Period (Y+Rc), s | | 5.3 | | 5.3 | 4.0 | 5.3 | | |
| Max Green Setting (Gmax), s | | 73.7 | | 45.7 | 16.0 | 53.7 | | |
| Max Q Clear Time (g_c+I1), s | | 5.3 | | 5.7 | 2.1 | 12.2 | | |
| Green Ext Time (p_c), s | | 6.7 | | 0.6 | 0.0 | 7.4 | | |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 7.4 |
| HCM 2010 LOS | A |

Notes

| Intersection | |
|---|---|
| Int Delay, s/veh | 13.8 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 77 | 336 | 23 | 29 | 366 | 37 |
| Future Vol, veh/h | 77 | 336 | 23 | 29 | 366 | 37 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 82 | 357 | 24 | 31 | 389 | 39 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 857 | 40 | 0 | 0 | 55 | 0 |
| Stage 1 | 40 | - | - | - | - | - |
| Stage 2 | 817 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 328 | 1031 | - | - | 1550 | - |
| Stage 1 | 982 | - | - | - | - | - |
| Stage 2 | 434 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 244 | 1031 | - | - | 1550 | - |
| Mov Cap-2 Maneuver | 244 | - | - | - | - | - |
| Stage 1 | 730 | - | - | - | - | - |
| Stage 2 | 434 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 21.7 | 0 | 7.4 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 644 | 1550 | - |
| HCM Lane V/C Ratio | - | - | 0.682 | 0.251 | - |
| HCM Control Delay (s) | - | - | 21.7 | 8.1 | 0 |
| HCM Lane LOS | - | - | C | A | A |
| HCM 95th %tile Q(veh) | - | - | 5.3 | 1 | - |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 13 | 203 | 322 | 860 | 416 | 89 | 128 | 245 | 685 | 69 | 468 | 7 |
| Future Volume (veh/h) | 13 | 203 | 322 | 860 | 416 | 89 | 128 | 245 | 685 | 69 | 468 | 7 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.95 | 1.00 | | 0.96 | 1.00 | | 0.51 | 1.00 | | 0.54 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 14 | 218 | 295 | 925 | 447 | 88 | 138 | 263 | 481 | 74 | 503 | 7 |
| Adj No. of Lanes | 1 | 2 | 0 | 2 | 2 | 0 | 1 | 1 | 2 | 1 | 1 | 0 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 27 | 399 | 338 | 868 | 1354 | 264 | 166 | 617 | 1172 | 95 | 534 | 7 |
| Arrive On Green | 0.02 | 0.23 | 0.23 | 0.25 | 0.46 | 0.46 | 0.09 | 0.33 | 0.33 | 0.05 | 0.30 | 0.30 |
| Sat Flow, veh/h | 1774 | 1770 | 1501 | 3442 | 2930 | 572 | 1774 | 1863 | 1415 | 1774 | 1808 | 25 |
| Grp Volume(v), veh/h | 14 | 218 | 295 | 925 | 268 | 267 | 138 | 263 | 481 | 74 | 0 | 510 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1501 | 1721 | 1770 | 1732 | 1774 | 1863 | 708 | 1774 | 0 | 1833 |
| Q Serve(g_s), s | 1.0 | 14.2 | 24.8 | 33.0 | 12.6 | 12.8 | 10.0 | 14.4 | 28.0 | 5.4 | 0.0 | 35.5 |
| Cycle Q Clear(g_c), s | 1.0 | 14.2 | 24.8 | 33.0 | 12.6 | 12.8 | 10.0 | 14.4 | 28.0 | 5.4 | 0.0 | 35.5 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.33 | 1.00 | | 1.00 | 1.00 | | 0.01 |
| Lane Grp Cap(c), veh/h | 27 | 399 | 338 | 868 | 818 | 801 | 166 | 617 | 1172 | 95 | 0 | 542 |
| V/C Ratio(X) | 0.52 | 0.55 | 0.87 | 1.07 | 0.33 | 0.33 | 0.83 | 0.43 | 0.41 | 0.78 | 0.00 | 0.94 |
| Avail Cap(c_a), veh/h | 149 | 507 | 430 | 868 | 818 | 801 | 353 | 617 | 1172 | 346 | 0 | 575 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 63.9 | 44.8 | 48.9 | 48.9 | 22.3 | 22.4 | 58.3 | 34.1 | 17.2 | 61.1 | 0.0 | 45.0 |
| Incr Delay (d2), s/veh | 14.5 | 1.4 | 15.4 | 49.5 | 0.3 | 0.3 | 10.3 | 0.5 | 0.2 | 12.7 | 0.0 | 23.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.6 | 7.1 | 11.7 | 21.5 | 6.2 | 6.2 | 5.4 | 7.5 | 5.5 | 3.0 | 0.0 | 21.5 |
| LnGrp Delay(d),s/veh | 78.4 | 46.2 | 64.2 | 98.5 | 22.6 | 22.6 | 68.6 | 34.5 | 17.4 | 73.8 | 0.0 | 68.4 |
| LnGrp LOS | E | D | E | F | C | C | E | C | B | E | | E |
| Approach Vol, veh/h | | 527 | | | 1460 | | | 882 | | | 584 | |
| Approach Delay, s/veh | | 57.1 | | | 70.7 | | | 30.5 | | | 69.1 | |
| Approach LOS | | E | | | E | | | C | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 17.0 | 35.0 | 16.2 | 42.6 | 6.0 | 66.0 | 11.5 | 47.3 |
| Change Period (Y+Rc), s | 4.0 | 5.5 | 4.0 | 4.0 | 4.0 | 5.5 | 4.5 | 4.0 |
| Max Green Setting (Gmax), s | 13.0 | 37.5 | 26.0 | 41.0 | 11.0 | 54.5 | 25.5 | 36.0 |
| Max Q Clear Time (g_c+I1), s | 5.0 | 26.8 | 12.0 | 37.5 | 3.0 | 14.8 | 7.4 | 30.0 |
| Green Ext Time (p_c), s | 0.0 | 2.6 | 0.3 | 1.1 | 0.0 | 3.9 | 0.1 | 2.8 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 58.1 |
| HCM 2010 LOS | E |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.4 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 920 | 33 | 12 | 1365 | 22 | 71 |
| Future Vol, veh/h | 920 | 33 | 12 | 1365 | 22 | 71 |
| Conflicting Peds, #/hr | 0 | 1 | 1 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 150 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 93 | 93 | 93 | 93 | 93 | 93 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 989 | 35 | 13 | 1468 | 24 | 76 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 1025 | 0 | 1768 | 513 |
| Stage 1 | - | - | - | - | 1008 | - |
| Stage 2 | - | - | - | - | 760 | - |
| Critical Hdwy | - | - | 4.14 | - | 6.84 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 | - |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 | 3.32 |
| Pot Cap-1 Maneuver | - | - | 673 | - | 75 | 506 |
| Stage 1 | - | - | - | - | 313 | - |
| Stage 2 | - | - | - | - | 422 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 672 | - | 74 | 506 |
| Mov Cap-2 Maneuver | - | - | - | - | 74 | - |
| Stage 1 | - | - | - | - | 307 | - |
| Stage 2 | - | - | - | - | 422 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.1 | 36 |
| HCM LOS | | | E |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 213 | - | - | 672 | - |
| HCM Lane V/C Ratio | 0.469 | - | - | 0.019 | - |
| HCM Control Delay (s) | 36 | - | - | 10.5 | - |
| HCM Lane LOS | E | - | - | B | - |
| HCM 95th %tile Q(veh) | 2.3 | - | - | 0.1 | - |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 69 | 837 | 105 | 36 | 982 | 50 | 204 | 99 | 68 | 156 | 120 | 218 |
| Future Volume (veh/h) | 69 | 837 | 105 | 36 | 982 | 50 | 204 | 99 | 68 | 156 | 120 | 218 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.98 | 1.00 | | 1.00 | 1.00 | | 0.99 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 78 | 940 | 112 | 40 | 1103 | 56 | 229 | 111 | -5 | 175 | 135 | 181 |
| Adj No. of Lanes | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 98 | 1193 | 142 | 236 | 1581 | 80 | 253 | 441 | 375 | 200 | 149 | 199 |
| Arrive On Green | 0.06 | 0.37 | 0.37 | 0.13 | 0.46 | 0.46 | 0.14 | 0.24 | 0.00 | 0.11 | 0.21 | 0.21 |
| Sat Flow, veh/h | 1774 | 3185 | 379 | 1774 | 3423 | 174 | 1774 | 1863 | 1583 | 1774 | 718 | 963 |
| Grp Volume(v), veh/h | 78 | 522 | 530 | 40 | 570 | 589 | 229 | 111 | -5 | 175 | 0 | 316 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1795 | 1774 | 1770 | 1827 | 1774 | 1863 | 1583 | 1774 | 0 | 1681 |
| Q Serve(g_s), s | 5.6 | 34.0 | 34.1 | 2.6 | 33.2 | 33.3 | 16.5 | 6.3 | 0.0 | 12.6 | 0.0 | 23.9 |
| Cycle Q Clear(g_c), s | 5.6 | 34.0 | 34.1 | 2.6 | 33.2 | 33.3 | 16.5 | 6.3 | 0.0 | 12.6 | 0.0 | 23.9 |
| Prop In Lane | 1.00 | | 0.21 | 1.00 | | 0.10 | 1.00 | | 1.00 | 1.00 | | 0.57 |
| Lane Grp Cap(c), veh/h | 98 | 663 | 672 | 236 | 817 | 844 | 253 | 441 | 375 | 200 | 0 | 348 |
| V/C Ratio(X) | 0.79 | 0.79 | 0.79 | 0.17 | 0.70 | 0.70 | 0.91 | 0.25 | -0.01 | 0.87 | 0.00 | 0.91 |
| Avail Cap(c_a), veh/h | 150 | 663 | 672 | 236 | 817 | 844 | 259 | 441 | 375 | 259 | 0 | 375 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.90 | 0.90 | 0.90 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 60.7 | 36.1 | 36.1 | 50.0 | 27.8 | 27.8 | 54.9 | 40.3 | 0.0 | 56.7 | 0.0 | 50.3 |
| Incr Delay (d2), s/veh | 7.5 | 9.2 | 9.1 | 0.1 | 4.4 | 4.3 | 30.9 | 0.4 | 0.0 | 18.7 | 0.0 | 25.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.0 | 18.2 | 18.5 | 1.3 | 17.2 | 17.7 | 10.3 | 3.3 | 0.0 | 7.2 | 0.0 | 13.5 |
| LnGrp Delay(d),s/veh | 68.2 | 45.3 | 45.2 | 50.1 | 32.2 | 32.1 | 85.8 | 40.7 | 0.0 | 75.4 | 0.0 | 75.3 |
| LnGrp LOS | E | D | D | D | C | C | F | D | | E | | E |
| Approach Vol, veh/h | | 1130 | | | 1199 | | | 335 | | | 491 | |
| Approach Delay, s/veh | | 46.8 | | | 32.7 | | | 72.1 | | | 75.3 | |
| Approach LOS | | D | | | C | | | E | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 22.6 | 54.0 | 22.5 | 30.9 | 11.2 | 65.4 | 18.7 | 34.7 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 4.0 | 4.0 | 4.0 | 5.3 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 16.0 | * 49 | 19.0 | 29.0 | 11.0 | 53.7 | 19.0 | 29.0 |
| Max Q Clear Time (g_c+I1), s | 4.6 | 36.1 | 18.5 | 25.9 | 7.6 | 35.3 | 14.6 | 8.3 |
| Green Ext Time (p_c), s | 0.0 | 10.7 | 0.0 | 0.8 | 0.0 | 15.8 | 0.1 | 0.7 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 48.6 |
| HCM 2010 LOS | D |

Notes



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 35 | 935 | 91 | 93 | 999 | 46 | 50 | 10 | 57 | 12 | 7 | 19 |
| Future Volume (veh/h) | 35 | 935 | 91 | 93 | 999 | 46 | 50 | 10 | 57 | 12 | 7 | 19 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 39 | 1039 | 67 | 103 | 1110 | 37 | 56 | 11 | 24 | 13 | 8 | 4 |
| Adj No. of Lanes | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 655 | 2616 | 1170 | 153 | 1435 | 642 | 92 | 113 | 96 | 36 | 35 | 17 |
| Arrive On Green | 0.74 | 1.00 | 1.00 | 0.04 | 0.41 | 0.41 | 0.05 | 0.06 | 0.06 | 0.02 | 0.03 | 0.03 |
| Sat Flow, veh/h | 1774 | 3539 | 1583 | 3442 | 3539 | 1583 | 1774 | 1863 | 1583 | 1774 | 1173 | 586 |
| Grp Volume(v), veh/h | 39 | 1039 | 67 | 103 | 1110 | 37 | 56 | 11 | 24 | 13 | 0 | 12 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1583 | 1721 | 1770 | 1583 | 1774 | 1863 | 1583 | 1774 | 0 | 1759 |
| Q Serve(g_s), s | 0.8 | 0.0 | 0.0 | 3.8 | 35.3 | 1.6 | 4.0 | 0.7 | 1.9 | 0.9 | 0.0 | 0.9 |
| Cycle Q Clear(g_c), s | 0.8 | 0.0 | 0.0 | 3.8 | 35.3 | 1.6 | 4.0 | 0.7 | 1.9 | 0.9 | 0.0 | 0.9 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.33 |
| Lane Grp Cap(c), veh/h | 655 | 2616 | 1170 | 153 | 1435 | 642 | 92 | 113 | 96 | 36 | 0 | 52 |
| V/C Ratio(X) | 0.06 | 0.40 | 0.06 | 0.67 | 0.77 | 0.06 | 0.61 | 0.10 | 0.25 | 0.36 | 0.00 | 0.23 |
| Avail Cap(c_a), veh/h | 655 | 2616 | 1170 | 421 | 1435 | 642 | 176 | 587 | 499 | 108 | 0 | 487 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.65 | 0.65 | 0.65 | 0.84 | 0.84 | 0.84 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 10.8 | 0.0 | 0.0 | 61.2 | 33.5 | 16.8 | 60.3 | 57.7 | 58.2 | 62.9 | 0.0 | 61.6 |
| Incr Delay (d2), s/veh | 0.0 | 0.3 | 0.1 | 1.6 | 3.5 | 0.1 | 2.4 | 0.1 | 0.5 | 2.3 | 0.0 | 0.8 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.4 | 0.1 | 0.0 | 1.9 | 18.0 | 0.7 | 2.0 | 0.4 | 0.8 | 0.5 | 0.0 | 0.4 |
| LnGrp Delay(d),s/veh | 10.8 | 0.3 | 0.1 | 62.8 | 37.0 | 16.9 | 62.7 | 57.8 | 58.7 | 65.1 | 0.0 | 62.4 |
| LnGrp LOS | B | A | A | E | D | B | E | E | E | E | | E |
| Approach Vol, veh/h | | 1145 | | | 1250 | | | 91 | | | 25 | |
| Approach Delay, s/veh | | 0.6 | | | 38.5 | | | 61.1 | | | 63.8 | |
| Approach LOS | | A | | | D | | | E | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 9.9 | 101.4 | 10.8 | 7.9 | 53.3 | 58.0 | 6.7 | 12.0 |
| Change Period (Y+Rc), s | 4.1 | 5.3 | 4.1 | 4.0 | 5.3 | * 5.3 | 4.1 | * 4.1 |
| Max Green Setting (Gmax), s | 5.8 | 47.7 | 12.9 | 36.0 | 10.9 | * 53 | 7.9 | * 41 |
| Max Q Clear Time (g_c+I1), s | 5.8 | 2.0 | 6.0 | 2.9 | 2.8 | 37.3 | 2.9 | 3.9 |
| Green Ext Time (p_c), s | 0.1 | 32.3 | 0.0 | 0.0 | 0.0 | 13.3 | 0.0 | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 22.3 |
| HCM 2010 LOS | C |

Notes

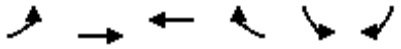


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 43 | 946 | 15 | 341 | 1053 | 30 | 4 | 30 | 321 | 98 | 28 | 37 |
| Future Volume (veh/h) | 43 | 946 | 15 | 341 | 1053 | 30 | 4 | 30 | 321 | 98 | 28 | 37 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 48 | 1063 | 8 | 383 | 1183 | 33 | 4 | 34 | 80 | 110 | 31 | 0 |
| Adj No. of Lanes | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 483 | 2052 | 918 | 424 | 1489 | 665 | 163 | 191 | 162 | 109 | 134 | 0 |
| Arrive On Green | 0.54 | 1.00 | 1.00 | 0.12 | 0.42 | 0.42 | 0.09 | 0.10 | 0.10 | 0.06 | 0.07 | 0.00 |
| Sat Flow, veh/h | 1774 | 3539 | 1583 | 3442 | 3539 | 1581 | 1774 | 1863 | 1579 | 1774 | 1863 | 0 |
| Grp Volume(v), veh/h | 48 | 1063 | 8 | 383 | 1183 | 33 | 4 | 34 | 80 | 110 | 31 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1583 | 1721 | 1770 | 1581 | 1774 | 1863 | 1579 | 1774 | 1863 | 0 |
| Q Serve(g_s), s | 1.7 | 0.0 | 0.0 | 14.3 | 37.8 | 1.2 | 0.3 | 2.2 | 6.2 | 8.0 | 2.0 | 0.0 |
| Cycle Q Clear(g_c), s | 1.7 | 0.0 | 0.0 | 14.3 | 37.8 | 1.2 | 0.3 | 2.2 | 6.2 | 8.0 | 2.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 483 | 2052 | 918 | 424 | 1489 | 665 | 163 | 191 | 162 | 109 | 134 | 0 |
| V/C Ratio(X) | 0.10 | 0.52 | 0.01 | 0.90 | 0.79 | 0.05 | 0.02 | 0.18 | 0.49 | 1.01 | 0.23 | 0.00 |
| Avail Cap(c_a), veh/h | 483 | 2052 | 918 | 424 | 1489 | 665 | 163 | 602 | 510 | 109 | 602 | 0 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.92 | 0.92 | 0.92 | 0.86 | 0.86 | 0.86 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 21.9 | 0.0 | 0.0 | 56.2 | 32.8 | 13.2 | 53.7 | 53.3 | 55.2 | 61.0 | 56.9 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 0.9 | 0.0 | 19.6 | 3.9 | 0.1 | 0.0 | 0.2 | 0.9 | 88.2 | 0.3 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.8 | 0.2 | 0.0 | 8.0 | 19.2 | 0.6 | 0.1 | 1.1 | 2.8 | 6.6 | 1.1 | 0.0 |
| LnGrp Delay(d),s/veh | 22.0 | 0.9 | 0.0 | 75.8 | 36.6 | 13.3 | 53.7 | 53.5 | 56.0 | 149.2 | 57.2 | 0.0 |
| LnGrp LOS | C | A | A | E | D | B | D | D | E | F | E | |
| Approach Vol, veh/h | | 1119 | | | 1599 | | | 118 | | | 141 | |
| Approach Delay, s/veh | | 1.8 | | | 45.5 | | | 55.2 | | | 129.0 | |
| Approach LOS | | A | | | D | | | E | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 20.0 | 80.7 | 16.0 | 13.4 | 40.7 | 60.0 | 12.0 | 17.3 |
| Change Period (Y+Rc), s | 4.0 | 5.3 | 4.0 | 4.0 | 5.3 | * 5.3 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 16.0 | 46.7 | 8.0 | 42.0 | 8.0 | * 55 | 8.0 | 42.0 |
| Max Q Clear Time (g_c+I1), s | 10.3 | 2.0 | 2.3 | 4.0 | 3.7 | 39.8 | 10.0 | 8.2 |
| Green Ext Time (p_c), s | 0.0 | 5.2 | 0.0 | 0.1 | 0.0 | 4.8 | 0.0 | 0.2 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 33.4 |
| HCM 2010 LOS | C |

Notes



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 190 | 1175 | 693 | 75 | 342 | 731 |
| Future Volume (veh/h) | 190 | 1175 | 693 | 75 | 342 | 731 |
| Number | 7 | 4 | 8 | 18 | 1 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 213 | 1320 | 779 | 0 | 384 | 523 |
| Adj No. of Lanes | 2 | 2 | 3 | 1 | 1 | 2 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 275 | 1538 | 1614 | 503 | 870 | 1366 |
| Arrive On Green | 0.08 | 0.43 | 0.32 | 0.00 | 0.49 | 0.49 |
| Sat Flow, veh/h | 3442 | 3632 | 5253 | 1583 | 1774 | 2787 |
| Grp Volume(v), veh/h | 213 | 1320 | 779 | 0 | 384 | 523 |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1770 | 1695 | 1583 | 1774 | 1393 |
| Q Serve(g_s), s | 7.3 | 40.3 | 14.8 | 0.0 | 16.9 | 14.1 |
| Cycle Q Clear(g_c), s | 7.3 | 40.3 | 14.8 | 0.0 | 16.9 | 14.1 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 275 | 1538 | 1614 | 503 | 870 | 1366 |
| V/C Ratio(X) | 0.78 | 0.86 | 0.48 | 0.00 | 0.44 | 0.38 |
| Avail Cap(c_a), veh/h | 416 | 1932 | 1971 | 614 | 870 | 1366 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.71 | 0.71 | 1.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 54.2 | 30.6 | 33.0 | 0.0 | 19.9 | 19.2 |
| Incr Delay (d2), s/veh | 3.6 | 2.4 | 0.2 | 0.0 | 0.4 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.6 | 20.1 | 7.0 | 0.0 | 8.3 | 13.1 |
| LnGrp Delay(d),s/veh | 57.8 | 33.0 | 33.2 | 0.0 | 20.2 | 19.4 |
| LnGrp LOS | E | C | C | | C | B |
| Approach Vol, veh/h | | 1533 | 779 | | 907 | |
| Approach Delay, s/veh | | 36.4 | 33.2 | | 19.7 | |
| Approach LOS | | D | C | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | | | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | | | 56.7 | | 63.3 | 14.1 | 42.6 |
| Change Period (Y+Rc), s | | | | 4.5 | | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | | | | 65.5 | | 45.5 | 14.5 | 46.5 |
| Max Q Clear Time (g_c+I1), s | | | | 42.3 | | 18.9 | 9.3 | 16.8 |
| Green Ext Time (p_c), s | | | | 9.8 | | 3.3 | 0.3 | 5.4 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 31.0 |
| HCM 2010 LOS | C |



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 944 | 573 | 0 | 1290 | 93 | 21 |
| Future Volume (veh/h) | 944 | 573 | 0 | 1290 | 93 | 21 |
| Number | 4 | 14 | 3 | 8 | 5 | 12 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 0 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 973 | 591 | 0 | 1330 | 96 | 22 |
| Adj No. of Lanes | 2 | 1 | 0 | 2 | 2 | 1 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 2 | 2 | 0 | 2 | 2 | 2 |
| Cap, veh/h | 1596 | 712 | 0 | 1596 | 1631 | 751 |
| Arrive On Green | 0.45 | 0.45 | 0.00 | 0.45 | 0.47 | 0.47 |
| Sat Flow, veh/h | 3632 | 1580 | 0 | 3725 | 3442 | 1583 |
| Grp Volume(v), veh/h | 973 | 591 | 0 | 1330 | 96 | 22 |
| Grp Sat Flow(s),veh/h/ln | 1770 | 1580 | 0 | 1770 | 1721 | 1583 |
| Q Serve(g_s), s | 25.0 | 39.4 | 0.0 | 39.7 | 1.8 | 0.9 |
| Cycle Q Clear(g_c), s | 25.0 | 39.4 | 0.0 | 39.7 | 1.8 | 0.9 |
| Prop In Lane | | 1.00 | 0.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 1596 | 712 | 0 | 1596 | 1631 | 751 |
| V/C Ratio(X) | 0.61 | 0.83 | 0.00 | 0.83 | 0.06 | 0.03 |
| Avail Cap(c_a), veh/h | 2610 | 1165 | 0 | 2610 | 1631 | 751 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.91 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 24.9 | 28.9 | 0.0 | 29.0 | 17.1 | 16.8 |
| Incr Delay (d2), s/veh | 0.4 | 2.7 | 0.0 | 1.2 | 0.1 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 12.2 | 17.6 | 0.0 | 19.5 | 0.9 | 0.4 |
| LnGrp Delay(d),s/veh | 25.3 | 31.6 | 0.0 | 30.1 | 17.1 | 16.9 |
| LnGrp LOS | C | C | | C | B | B |
| Approach Vol, veh/h | 1564 | | | 1330 | 118 | |
| Approach Delay, s/veh | 27.7 | | | 30.1 | 17.1 | |
| Approach LOS | C | | | C | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | | | 8 |
| Phs Duration (G+Y+Rc), s | | 61.4 | | 58.6 | | | | 58.6 |
| Change Period (Y+Rc), s | | 4.5 | | 4.5 | | | | 4.5 |
| Max Green Setting (Gmax), s | | 22.5 | | 88.5 | | | | 88.5 |
| Max Q Clear Time (g_c+I1), s | | 3.8 | | 41.4 | | | | 41.7 |
| Green Ext Time (p_c), s | | 0.3 | | 11.5 | | | | 12.5 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 28.4 |
| HCM 2010 LOS | C |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 945 | 20 | 11 | 1260 | 30 | 7 |
| Future Volume (veh/h) | 945 | 20 | 11 | 1260 | 30 | 7 |
| Number | 2 | 12 | 1 | 6 | 7 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 1050 | 15 | 12 | 1400 | 33 | -2 |
| Adj No. of Lanes | 2 | 1 | 1 | 2 | 1 | 1 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 2946 | 1317 | 24 | 3103 | 92 | 82 |
| Arrive On Green | 0.83 | 0.83 | 0.01 | 0.88 | 0.05 | 0.00 |
| Sat Flow, veh/h | 3632 | 1582 | 1774 | 3632 | 1774 | 1583 |
| Grp Volume(v), veh/h | 1050 | 15 | 12 | 1400 | 33 | -2 |
| Grp Sat Flow(s),veh/h/ln | 1770 | 1582 | 1774 | 1770 | 1774 | 1583 |
| Q Serve(g_s), s | 9.2 | 0.2 | 0.9 | 10.5 | 2.3 | 0.0 |
| Cycle Q Clear(g_c), s | 9.2 | 0.2 | 0.9 | 10.5 | 2.3 | 0.0 |
| Prop In Lane | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 2946 | 1317 | 24 | 3103 | 92 | 82 |
| V/C Ratio(X) | 0.36 | 0.01 | 0.50 | 0.45 | 0.36 | -0.02 |
| Avail Cap(c_a), veh/h | 2946 | 1317 | 150 | 3103 | 368 | 329 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.87 | 0.87 | 0.78 | 0.78 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 2.6 | 1.8 | 63.7 | 1.6 | 59.5 | 0.0 |
| Incr Delay (d2), s/veh | 0.3 | 0.0 | 4.6 | 0.4 | 0.9 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 4.5 | 0.1 | 0.5 | 5.0 | 1.2 | 0.0 |
| LnGrp Delay(d),s/veh | 2.9 | 1.9 | 68.3 | 2.0 | 60.4 | 0.0 |
| LnGrp LOS | A | A | E | A | E | |
| Approach Vol, veh/h | 1065 | | | 1412 | 31 | |
| Approach Delay, s/veh | 2.9 | | | 2.6 | 64.3 | |
| Approach LOS | A | | | A | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | | 6 | | |
| Phs Duration (G+Y+Rc), s | 5.8 | 113.5 | | 10.7 | | 119.3 | | |
| Change Period (Y+Rc), s | 4.0 | 5.3 | | 4.0 | | 5.3 | | |
| Max Green Setting (Gmax), s | 1.8 | 78.7 | | 27.0 | | 93.7 | | |
| Max Q Clear Time (g_c+I1), s | 2.9 | 11.2 | | 4.3 | | 12.5 | | |
| Green Ext Time (p_c), s | 0.0 | 5.1 | | 0.0 | | 8.0 | | |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 3.5 |
| HCM 2010 LOS | A |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 226 | 637 | 89 | 45 | 801 | 122 | 113 | 88 | 36 | 115 | 110 | 357 |
| Future Volume (veh/h) | 226 | 637 | 89 | 45 | 801 | 122 | 113 | 88 | 36 | 115 | 110 | 357 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 7 | 4 | 14 | 3 | 8 | 18 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 0.99 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 248 | 700 | 89 | 49 | 880 | 41 | 124 | 97 | 3 | 126 | 121 | 0 |
| Adj No. of Lanes | 2 | 2 | 0 | 1 | 2 | 1 | 1 | 2 | 1 | 2 | 2 | 1 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 301 | 1305 | 166 | 470 | 2126 | 938 | 149 | 289 | 128 | 303 | 318 | 142 |
| Arrive On Green | 0.18 | 0.83 | 0.83 | 0.27 | 0.60 | 0.60 | 0.08 | 0.08 | 0.08 | 0.09 | 0.09 | 0.00 |
| Sat Flow, veh/h | 3442 | 3160 | 401 | 1774 | 3539 | 1562 | 1774 | 3539 | 1572 | 3442 | 3539 | 1583 |
| Grp Volume(v), veh/h | 248 | 392 | 397 | 49 | 880 | 41 | 124 | 97 | 3 | 126 | 121 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1770 | 1792 | 1774 | 1770 | 1562 | 1774 | 1770 | 1572 | 1721 | 1770 | 1583 |
| Q Serve(g_s), s | 9.0 | 9.0 | 9.0 | 2.7 | 17.2 | 1.4 | 8.9 | 3.4 | 0.2 | 4.5 | 4.2 | 0.0 |
| Cycle Q Clear(g_c), s | 9.0 | 9.0 | 9.0 | 2.7 | 17.2 | 1.4 | 8.9 | 3.4 | 0.2 | 4.5 | 4.2 | 0.0 |
| Prop In Lane | 1.00 | | 0.22 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 301 | 731 | 740 | 470 | 2126 | 938 | 149 | 289 | 128 | 303 | 318 | 142 |
| V/C Ratio(X) | 0.82 | 0.54 | 0.54 | 0.10 | 0.41 | 0.04 | 0.83 | 0.34 | 0.02 | 0.42 | 0.38 | 0.00 |
| Avail Cap(c_a), veh/h | 424 | 731 | 740 | 470 | 2126 | 938 | 218 | 937 | 416 | 424 | 937 | 419 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 52.7 | 7.4 | 7.4 | 36.1 | 13.8 | 10.6 | 58.6 | 56.4 | 38.1 | 56.1 | 55.7 | 0.0 |
| Incr Delay (d2), s/veh | 8.4 | 2.7 | 2.6 | 0.1 | 0.6 | 0.1 | 15.8 | 0.7 | 0.1 | 0.9 | 0.7 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 4.6 | 4.7 | 4.7 | 1.3 | 8.5 | 0.6 | 5.0 | 1.7 | 0.1 | 2.2 | 2.1 | 0.0 |
| LnGrp Delay(d),s/veh | 61.0 | 10.1 | 10.1 | 36.2 | 14.4 | 10.7 | 74.4 | 57.0 | 38.2 | 57.0 | 56.5 | 0.0 |
| LnGrp LOS | E | B | B | D | B | B | E | E | D | E | E | |
| Approach Vol, veh/h | | 1037 | | | 970 | | | 224 | | | 247 | |
| Approach Delay, s/veh | | 22.3 | | | 15.3 | | | 66.4 | | | 56.8 | |
| Approach LOS | | C | | | B | | | E | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 9.8 | 59.0 | 16.0 | 15.2 | 15.4 | 83.4 | 14.9 | 16.3 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 4.6 | * 4.6 | 4.0 | 5.3 | 4.0 | 4.6 |
| Max Green Setting (Gmax), s | 8.0 | * 54 | 16.0 | * 34 | 16.0 | 45.7 | 16.0 | 34.4 |
| Max Q Clear Time (g_c+I1), s | 4.7 | 11.0 | 6.5 | 5.4 | 11.0 | 19.2 | 10.9 | 6.2 |
| Green Ext Time (p_c), s | 0.0 | 6.3 | 0.2 | 0.5 | 0.3 | 7.6 | 0.1 | 0.7 |

| Intersection Summary | | |
|---|---|---|
| HCM 2010 Ctrl Delay | | 27.0 |
| HCM 2010 LOS | | C |

Notes



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 26 | 42 | 33 | 0 | 145 | 488 | 17 | 426 | 0 | 317 | 836 | 48 |
| Future Volume (veh/h) | 26 | 42 | 33 | 0 | 145 | 488 | 17 | 426 | 0 | 317 | 836 | 48 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1759 | 1759 | 1900 | 1759 | 1759 | 1759 | 1759 | 1759 | 1900 | 1759 | 1759 | 1900 |
| Adj Flow Rate, veh/h | 27 | 43 | 18 | 0 | 149 | 0 | 18 | 439 | 0 | 327 | 862 | 0 |
| Adj No. of Lanes | 1 | 2 | 0 | 1 | 1 | 1 | 1 | 2 | 0 | 2 | 2 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Cap, veh/h | 51 | 636 | 251 | 3 | 207 | 176 | 36 | 705 | 0 | 484 | 1247 | 0 |
| Arrive On Green | 0.03 | 0.27 | 0.27 | 0.00 | 0.12 | 0.00 | 0.02 | 0.21 | 0.00 | 0.15 | 0.37 | 0.00 |
| Sat Flow, veh/h | 1675 | 2343 | 924 | 1675 | 1759 | 1495 | 1675 | 3431 | 0 | 3250 | 3431 | 0 |
| Grp Volume(v), veh/h | 27 | 30 | 31 | 0 | 149 | 0 | 18 | 439 | 0 | 327 | 862 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1675 | 1671 | 1596 | 1675 | 1759 | 1495 | 1675 | 1671 | 0 | 1625 | 1671 | 0 |
| Q Serve(g_s), s | 0.9 | 0.8 | 0.8 | 0.0 | 4.6 | 0.0 | 0.6 | 6.8 | 0.0 | 5.4 | 12.4 | 0.0 |
| Cycle Q Clear(g_c), s | 0.9 | 0.8 | 0.8 | 0.0 | 4.6 | 0.0 | 0.6 | 6.8 | 0.0 | 5.4 | 12.4 | 0.0 |
| Prop In Lane | 1.00 | | 0.58 | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 51 | 453 | 433 | 3 | 207 | 176 | 36 | 705 | 0 | 484 | 1247 | 0 |
| V/C Ratio(X) | 0.53 | 0.07 | 0.07 | 0.00 | 0.72 | 0.00 | 0.49 | 0.62 | 0.00 | 0.68 | 0.69 | 0.00 |
| Avail Cap(c_a), veh/h | 353 | 1616 | 1543 | 265 | 1608 | 1367 | 295 | 3349 | 0 | 2343 | 5288 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 27.2 | 15.4 | 15.4 | 0.0 | 24.2 | 0.0 | 27.5 | 20.4 | 0.0 | 22.9 | 15.1 | 0.0 |
| Incr Delay (d2), s/veh | 8.2 | 0.1 | 0.1 | 0.0 | 4.7 | 0.0 | 10.0 | 0.9 | 0.0 | 1.7 | 0.7 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.5 | 0.4 | 0.4 | 0.0 | 2.5 | 0.0 | 0.4 | 3.2 | 0.0 | 2.5 | 5.7 | 0.0 |
| LnGrp Delay(d),s/veh | 35.4 | 15.4 | 15.5 | 0.0 | 28.9 | 0.0 | 37.5 | 21.3 | 0.0 | 24.6 | 15.8 | 0.0 |
| LnGrp LOS | D | B | B | | C | | D | C | | C | B | |
| Approach Vol, veh/h | | 88 | | | 149 | | | 457 | | | 1189 | |
| Approach Delay, s/veh | | 21.6 | | | 28.9 | | | 21.9 | | | 18.2 | |
| Approach LOS | | C | | | C | | | C | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 15.5 | 19.0 | 0.0 | 22.4 | 6.2 | 28.2 | 8.7 | 13.7 |
| Change Period (Y+Rc), s | 7.0 | 7.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 | 7.0 |
| Max Green Setting (Gmax), s | 11.0 | 57.0 | 9.0 | 55.0 | 10.0 | 90.0 | 12.0 | 52.0 |
| Max Q Clear Time (g_c+I1), s | 17.4 | 8.8 | 0.0 | 2.8 | 2.6 | 14.4 | 2.9 | 6.6 |
| Green Ext Time (p_c), s | 1.1 | 2.7 | 0.0 | 0.3 | 0.0 | 6.1 | 0.0 | 0.7 |

| Intersection Summary | | |
|---|---|---|
| HCM 2010 Ctrl Delay | | 20.1 |
| HCM 2010 LOS | | C |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 3 | 4 | 0 | 438 | 3 | 1 | 4 | 396 | 132 | 2 | 850 | 4 |
| Future Volume (veh/h) | 3 | 4 | 0 | 438 | 3 | 1 | 4 | 396 | 132 | 2 | 850 | 4 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 1 | 6 | 16 | 5 | 2 | 12 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1845 | 1845 | 1900 | 1845 | 1845 | 1900 | 1845 | 1845 | 1845 | 1845 | 1845 | 1900 |
| Adj Flow Rate, veh/h | 3 | 4 | 0 | 447 | 3 | 0 | 4 | 404 | 102 | 2 | 867 | 3 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Cap, veh/h | 9 | 16 | 0 | 524 | 557 | 0 | 11 | 629 | 1002 | 6 | 1210 | 4 |
| Arrive On Green | 0.00 | 0.01 | 0.00 | 0.30 | 0.30 | 0.00 | 0.01 | 0.34 | 0.34 | 0.00 | 0.34 | 0.34 |
| Sat Flow, veh/h | 1757 | 1845 | 0 | 1757 | 1845 | 0 | 1757 | 1845 | 1568 | 1757 | 3583 | 12 |
| Grp Volume(v), veh/h | 3 | 4 | 0 | 447 | 3 | 0 | 4 | 404 | 102 | 2 | 424 | 446 |
| Grp Sat Flow(s),veh/h/ln | 1757 | 1845 | 0 | 1757 | 1845 | 0 | 1757 | 1845 | 1568 | 1757 | 1752 | 1842 |
| Q Serve(g_s), s | 0.1 | 0.1 | 0.0 | 13.7 | 0.1 | 0.0 | 0.1 | 10.6 | 1.4 | 0.1 | 12.1 | 12.1 |
| Cycle Q Clear(g_c), s | 0.1 | 0.1 | 0.0 | 13.7 | 0.1 | 0.0 | 0.1 | 10.6 | 1.4 | 0.1 | 12.1 | 12.1 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 0.00 | 1.00 | | 1.00 | 1.00 | | 0.01 |
| Lane Grp Cap(c), veh/h | 9 | 16 | 0 | 524 | 557 | 0 | 11 | 629 | 1002 | 6 | 592 | 622 |
| V/C Ratio(X) | 0.35 | 0.25 | 0.00 | 0.85 | 0.01 | 0.00 | 0.35 | 0.64 | 0.10 | 0.35 | 0.72 | 0.72 |
| Avail Cap(c_a), veh/h | 245 | 322 | 0 | 2819 | 3024 | 0 | 245 | 3121 | 3120 | 184 | 2904 | 3053 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 28.4 | 28.2 | 0.0 | 18.9 | 14.0 | 0.0 | 28.4 | 15.9 | 4.0 | 28.5 | 16.6 | 16.6 |
| Incr Delay (d2), s/veh | 22.6 | 8.0 | 0.0 | 4.1 | 0.0 | 0.0 | 17.6 | 1.1 | 0.0 | 32.3 | 1.6 | 1.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.1 | 0.1 | 0.0 | 7.2 | 0.0 | 0.0 | 0.1 | 5.6 | 0.6 | 0.1 | 6.0 | 6.3 |
| LnGrp Delay(d),s/veh | 51.1 | 36.3 | 0.0 | 23.0 | 14.0 | 0.0 | 46.0 | 17.0 | 4.0 | 60.8 | 18.2 | 18.1 |
| LnGrp LOS | D | D | | C | B | | D | B | A | E | B | B |
| Approach Vol, veh/h | | 7 | | | 450 | | | 510 | | | 872 | |
| Approach Delay, s/veh | | 42.6 | | | 22.9 | | | 14.7 | | | 18.3 | |
| Approach LOS | | D | | | C | | | B | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 5.4 | 24.4 | 22.1 | 5.5 | 5.2 | 24.5 | 5.3 | 22.3 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 8.0 | 95.0 | 92.0 | 10.0 | 6.0 | 97.0 | 8.0 | 94.0 |
| Max Q Clear Time (g_c+I1), s | 2.1 | 14.1 | 15.7 | 2.1 | 2.1 | 12.6 | 2.1 | 2.1 |
| Green Ext Time (p_c), s | 0.0 | 5.2 | 1.4 | 0.0 | 0.0 | 2.5 | 0.0 | 0.0 |

| Intersection Summary | | |
|---|---|---|
| HCM 2010 Ctrl Delay | | 18.5 |
| HCM 2010 LOS | | B |

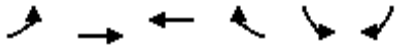


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 2 | 19 | 21 | 192 | 84 | 267 | 15 | 270 | 176 | 229 | 1021 | 5 |
| Future Volume (veh/h) | 2 | 19 | 21 | 192 | 84 | 267 | 15 | 270 | 176 | 229 | 1021 | 5 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1827 | 1827 | 1900 | 1827 | 1827 | 1827 | 1827 | 1827 | 1827 | 1827 | 1827 | 1900 |
| Adj Flow Rate, veh/h | 2 | 20 | 22 | 142 | 165 | 275 | 15 | 278 | 0 | 236 | 1053 | 0 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Cap, veh/h | 4 | 94 | 103 | 185 | 405 | 344 | 25 | 875 | 556 | 290 | 1404 | 0 |
| Arrive On Green | 0.00 | 0.12 | 0.12 | 0.11 | 0.22 | 0.22 | 0.01 | 0.25 | 0.00 | 0.17 | 0.40 | 0.00 |
| Sat Flow, veh/h | 1740 | 796 | 876 | 1740 | 1827 | 1553 | 1740 | 3471 | 1553 | 1740 | 3563 | 0 |
| Grp Volume(v), veh/h | 2 | 0 | 42 | 142 | 165 | 275 | 15 | 278 | 0 | 236 | 1053 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1740 | 0 | 1672 | 1740 | 1827 | 1553 | 1740 | 1736 | 1553 | 1740 | 1736 | 0 |
| Q Serve(g_s), s | 0.1 | 0.0 | 1.6 | 5.6 | 5.4 | 11.7 | 0.6 | 4.6 | 0.0 | 9.1 | 18.1 | 0.0 |
| Cycle Q Clear(g_c), s | 0.1 | 0.0 | 1.6 | 5.6 | 5.4 | 11.7 | 0.6 | 4.6 | 0.0 | 9.1 | 18.1 | 0.0 |
| Prop In Lane | 1.00 | | 0.52 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 4 | 0 | 197 | 185 | 405 | 344 | 25 | 875 | 556 | 290 | 1404 | 0 |
| V/C Ratio(X) | 0.53 | 0.00 | 0.21 | 0.77 | 0.41 | 0.80 | 0.60 | 0.32 | 0.00 | 0.81 | 0.75 | 0.00 |
| Avail Cap(c_a), veh/h | 224 | 0 | 1100 | 1045 | 2064 | 1754 | 199 | 2283 | 1186 | 1642 | 5162 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 34.9 | 0.0 | 27.9 | 30.4 | 23.3 | 25.8 | 34.3 | 21.3 | 0.0 | 28.1 | 17.8 | 0.0 |
| Incr Delay (d2), s/veh | 82.5 | 0.0 | 0.5 | 6.6 | 0.7 | 4.3 | 20.5 | 0.2 | 0.0 | 5.5 | 0.8 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.1 | 0.0 | 0.8 | 3.0 | 2.8 | 5.4 | 0.4 | 2.2 | 0.0 | 4.8 | 8.8 | 0.0 |
| LnGrp Delay(d),s/veh | 117.3 | 0.0 | 28.5 | 37.0 | 24.0 | 30.1 | 54.8 | 21.5 | 0.0 | 33.5 | 18.6 | 0.0 |
| LnGrp LOS | F | | C | D | C | C | D | C | | C | B | |
| Approach Vol, veh/h | | 44 | | | 582 | | | 293 | | | 1289 | |
| Approach Delay, s/veh | | 32.5 | | | 30.0 | | | 23.2 | | | 21.4 | |
| Approach LOS | | C | | | C | | | C | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 17.7 | 24.6 | 13.4 | 14.2 | 7.0 | 35.3 | 6.2 | 21.5 |
| Change Period (Y+Rc), s | 6.0 | 7.0 | 6.0 | 6.0 | 6.0 | 7.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 66.0 | 46.0 | 42.0 | 46.0 | 8.0 | 104.0 | 9.0 | 79.0 |
| Max Q Clear Time (g_c+I1), s | 11.1 | 6.6 | 7.6 | 3.6 | 2.6 | 20.1 | 2.1 | 13.7 |
| Green Ext Time (p_c), s | 0.7 | 1.6 | 0.4 | 0.2 | 0.0 | 8.1 | 0.0 | 1.8 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 24.1 |
| HCM 2010 LOS | C |

Notes



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 147 | 1294 | 0 |
| Future Volume (veh/h) | 0 | 0 | 0 | 147 | 1294 | 0 |
| Number | 5 | 2 | 6 | 16 | 3 | 18 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 0 | 0 | 0 | 150 | 1320 | 0 |
| Adj No. of Lanes | 1 | 1 | 1 | 1 | 2 | 1 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 232 | 294 | 294 | 250 | 2010 | 925 |
| Arrive On Green | 0.00 | 0.00 | 0.00 | 0.16 | 0.58 | 0.00 |
| Sat Flow, veh/h | 1232 | 1863 | 1863 | 1583 | 3442 | 1583 |
| Grp Volume(v), veh/h | 0 | 0 | 0 | 150 | 1320 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1232 | 1863 | 1863 | 1583 | 1721 | 1583 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 2.7 | 8.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 0.0 | 0.0 | 2.7 | 8.0 | 0.0 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 232 | 294 | 294 | 250 | 2010 | 925 |
| V/C Ratio(X) | 0.00 | 0.00 | 0.00 | 0.60 | 0.66 | 0.00 |
| Avail Cap(c_a), veh/h | 555 | 782 | 782 | 665 | 8779 | 4039 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 0.0 | 0.0 | 0.0 | 12.1 | 4.3 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 0.0 | 0.0 | 2.3 | 0.4 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 0.0 | 0.0 | 1.3 | 3.8 | 0.0 |
| LnGrp Delay(d),s/veh | 0.0 | 0.0 | 0.0 | 14.4 | 4.7 | 0.0 |
| LnGrp LOS | | | | B | A | |
| Approach Vol, veh/h | | 0 | 150 | | 1320 | |
| Approach Delay, s/veh | | 0.0 | 14.4 | | 4.7 | |
| Approach LOS | | | B | | A | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 8.9 | | | | 8.9 | | 22.1 |
| Change Period (Y+Rc), s | | 5.3 | | | | 5.3 | | 5.3 |
| Max Green Setting (Gmax), s | | 11.7 | | | | 11.7 | | 77.7 |
| Max Q Clear Time (g_c+I1), s | | 0.0 | | | | 4.7 | | 10.0 |
| Green Ext Time (p_c), s | | 0.0 | | | | 0.2 | | 6.8 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 5.7 |
| HCM 2010 LOS | A |

Notes



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 10 | 1284 | 0 | 0 | 143 | 902 | 4 | 5 | 196 | 0 | 0 | 0 |
| Future Volume (veh/h) | 10 | 1284 | 0 | 0 | 143 | 902 | 4 | 5 | 196 | 0 | 0 | 0 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 7 | 4 | 14 | | | |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | | | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 0 | 0 | 1863 | 1863 | 1863 | 1863 | 1863 | | | |
| Adj Flow Rate, veh/h | 11 | 1352 | 0 | 0 | 151 | 949 | 4 | 5 | 206 | | | |
| Adj No. of Lanes | 2 | 3 | 0 | 0 | 1 | 2 | 1 | 1 | 1 | | | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | | | |
| Percent Heavy Veh, % | 2 | 2 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | | | |
| Cap, veh/h | 40 | 2958 | 0 | 0 | 864 | 1469 | 365 | 384 | 326 | | | |
| Arrive On Green | 0.01 | 0.58 | 0.00 | 0.00 | 0.46 | 0.46 | 0.21 | 0.21 | 0.21 | | | |
| Sat Flow, veh/h | 3442 | 5253 | 0 | 0 | 1863 | 3167 | 1774 | 1863 | 1583 | | | |
| Grp Volume(v), veh/h | 11 | 1352 | 0 | 0 | 151 | 949 | 4 | 5 | 206 | | | |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1695 | 0 | 0 | 1863 | 1583 | 1774 | 1863 | 1583 | | | |
| Q Serve(g_s), s | 0.1 | 5.7 | 0.0 | 0.0 | 1.8 | 8.6 | 0.1 | 0.1 | 4.5 | | | |
| Cycle Q Clear(g_c), s | 0.1 | 5.7 | 0.0 | 0.0 | 1.8 | 8.6 | 0.1 | 0.1 | 4.5 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 1.00 | 1.00 | | 1.00 | | | |
| Lane Grp Cap(c), veh/h | 40 | 2958 | 0 | 0 | 864 | 1469 | 365 | 384 | 326 | | | |
| V/C Ratio(X) | 0.28 | 0.46 | 0.00 | 0.00 | 0.17 | 0.65 | 0.01 | 0.01 | 0.63 | | | |
| Avail Cap(c_a), veh/h | 1462 | 10126 | 0 | 0 | 2720 | 4624 | 2214 | 2324 | 1976 | | | |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Uniform Delay (d), s/veh | 18.5 | 4.5 | 0.0 | 0.0 | 5.9 | 7.7 | 11.9 | 11.9 | 13.6 | | | |
| Incr Delay (d2), s/veh | 3.7 | 0.1 | 0.0 | 0.0 | 0.1 | 0.5 | 0.0 | 0.0 | 2.0 | | | |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| %ile BackOfQ(50%),veh/ln | 0.1 | 2.7 | 0.0 | 0.0 | 0.9 | 3.8 | 0.0 | 0.0 | 2.1 | | | |
| LnGrp Delay(d),s/veh | 22.2 | 4.6 | 0.0 | 0.0 | 6.0 | 8.2 | 11.9 | 11.9 | 15.7 | | | |
| LnGrp LOS | C | A | | | A | A | B | B | B | | | |
| Approach Vol, veh/h | | 1363 | | | 1100 | | | 215 | | | | |
| Approach Delay, s/veh | | 4.7 | | | 7.9 | | | 15.5 | | | | |
| Approach LOS | | A | | | A | | | B | | | | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | |
| Phs Duration (G+Y+Rc), s | | 25.9 | | 11.8 | 4.4 | 21.5 | | |
| Change Period (Y+Rc), s | | 5.3 | | 5.3 | 4.0 | 5.3 | | |
| Max Green Setting (Gmax), s | | 73.7 | | 45.7 | 16.0 | 53.7 | | |
| Max Q Clear Time (g_c+I1), s | | 7.7 | | 6.5 | 2.1 | 10.6 | | |
| Green Ext Time (p_c), s | | 12.7 | | 0.7 | 0.0 | 5.5 | | |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 6.9 |
| HCM 2010 LOS | A |

Notes

| Intersection | |
|---|---|
| Int Delay, s/veh | 9.9 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 33 | 363 | 37 | 34 | 317 | 29 |
| Future Vol, veh/h | 33 | 363 | 37 | 34 | 317 | 29 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 93 | 93 | 93 | 93 | 93 | 93 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 35 | 390 | 40 | 37 | 341 | 31 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 772 | 59 | 0 | 0 | 77 | 0 |
| Stage 1 | 59 | - | - | - | - | - |
| Stage 2 | 713 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 368 | 1007 | - | - | 1522 | - |
| Stage 1 | 964 | - | - | - | - | - |
| Stage 2 | 486 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 284 | 1007 | - | - | 1522 | - |
| Mov Cap-2 Maneuver | 284 | - | - | - | - | - |
| Stage 1 | 744 | - | - | - | - | - |
| Stage 2 | 486 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 13.8 | 0 | 7.4 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 831 | 1522 | - |
| HCM Lane V/C Ratio | - | - | 0.512 | 0.224 | - |
| HCM Control Delay (s) | - | - | 13.8 | 8 | 0 |
| HCM Lane LOS | - | - | B | A | A |
| HCM 95th %tile Q(veh) | - | - | 3 | 0.9 | - |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 45 | 312 | 34 | 281 | 285 | 211 | 70 | 233 | 537 | 165 | 94 | 26 |
| Future Volume (veh/h) | 45 | 312 | 34 | 281 | 285 | 211 | 70 | 233 | 537 | 165 | 94 | 26 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.94 | 1.00 | | 0.41 | 1.00 | | 0.67 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 52 | 363 | -15 | 327 | 331 | 237 | 81 | 271 | 347 | 192 | 109 | 29 |
| Adj No. of Lanes | 1 | 2 | 0 | 2 | 2 | 0 | 1 | 1 | 2 | 1 | 1 | 0 |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 67 | 1043 | 0 | 419 | 735 | 511 | 105 | 557 | 683 | 235 | 473 | 126 |
| Arrive On Green | 0.04 | 0.29 | 0.00 | 0.12 | 0.38 | 0.36 | 0.06 | 0.30 | 0.30 | 0.13 | 0.37 | 0.37 |
| Sat Flow, veh/h | 1774 | 3632 | 0 | 3442 | 1942 | 1350 | 1774 | 1863 | 1150 | 1774 | 1272 | 338 |
| Grp Volume(v), veh/h | 52 | 348 | 0 | 327 | 301 | 267 | 81 | 271 | 347 | 192 | 0 | 138 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 0 | 1721 | 1770 | 1522 | 1774 | 1863 | 575 | 1774 | 0 | 1610 |
| Q Serve(g_s), s | 3.1 | 8.1 | 0.0 | 9.7 | 13.4 | 14.1 | 4.7 | 12.6 | 26.3 | 11.1 | 0.0 | 6.2 |
| Cycle Q Clear(g_c), s | 3.1 | 8.1 | 0.0 | 9.7 | 13.4 | 14.1 | 4.7 | 12.6 | 26.3 | 11.1 | 0.0 | 6.2 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 0.89 | 1.00 | | 1.00 | 1.00 | | 0.21 |
| Lane Grp Cap(c), veh/h | 67 | 1043 | 0 | 419 | 670 | 576 | 105 | 557 | 683 | 235 | 0 | 599 |
| V/C Ratio(X) | 0.78 | 0.33 | 0.00 | 0.78 | 0.45 | 0.46 | 0.77 | 0.49 | 0.51 | 0.82 | 0.00 | 0.23 |
| Avail Cap(c_a), veh/h | 186 | 1043 | 0 | 1342 | 670 | 576 | 439 | 638 | 733 | 439 | 0 | 628 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 50.2 | 29.0 | 0.0 | 44.8 | 24.5 | 25.2 | 48.7 | 30.3 | 25.3 | 44.4 | 0.0 | 22.7 |
| Incr Delay (d2), s/veh | 17.1 | 0.9 | 0.0 | 3.2 | 2.2 | 2.7 | 11.1 | 0.7 | 0.6 | 6.8 | 0.0 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.8 | 4.1 | 0.0 | 4.8 | 6.9 | 6.4 | 2.6 | 6.6 | 4.2 | 5.9 | 0.0 | 2.8 |
| LnGrp Delay(d),s/veh | 67.3 | 29.9 | 0.0 | 48.0 | 26.6 | 27.8 | 59.8 | 30.9 | 25.9 | 51.2 | 0.0 | 22.9 |
| LnGrp LOS | E | C | | D | C | C | E | C | C | D | | C |
| Approach Vol, veh/h | | 400 | | | 895 | | | 699 | | | 330 | |
| Approach Delay, s/veh | | 34.7 | | | 34.8 | | | 31.8 | | | 39.3 | |
| Approach LOS | | C | | | C | | | C | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 16.8 | 35.0 | 10.3 | 43.1 | 8.0 | 43.8 | 17.9 | 35.4 |
| Change Period (Y+Rc), s | 4.0 | 5.5 | 4.0 | 4.0 | 4.0 | 5.5 | 4.5 | 4.0 |
| Max Green Setting (Gmax), s | 12.8 | 29.5 | 26.0 | 41.0 | 11.0 | 29.5 | 25.5 | 36.0 |
| Max Q Clear Time (g_c+I1), s | 11.7 | 10.1 | 6.7 | 8.2 | 5.1 | 16.1 | 13.1 | 28.3 |
| Green Ext Time (p_c), s | 1.1 | 2.3 | 0.2 | 0.9 | 0.0 | 3.2 | 0.4 | 3.1 |

| Intersection Summary | | |
|---|---|---|
| HCM 2010 Ctrl Delay | | 34.5 |
| HCM 2010 LOS | | C |

| Intersection | |
|---|---|
| Int Delay, s/veh | 4 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 918 | 83 | 61 | 750 | 21 | 41 |
| Future Vol, veh/h | 918 | 83 | 61 | 750 | 21 | 41 |
| Conflicting Peds, #/hr | 0 | 12 | 12 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 150 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 74 | 74 | 74 | 74 | 74 | 74 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1241 | 112 | 82 | 1014 | 28 | 55 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 1365 | 0 | 1980 | 689 |
| Stage 1 | - | - | - | - | 1309 | - |
| Stage 2 | - | - | - | - | 671 | - |
| Critical Hdwy | - | - | 4.14 | - | 6.84 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 | - |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 | 3.32 |
| Pot Cap-1 Maneuver | - | - | 499 | - | 54 | 388 |
| Stage 1 | - | - | - | - | 217 | - |
| Stage 2 | - | - | - | - | 470 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 493 | - | 45 | 384 |
| Mov Cap-2 Maneuver | - | - | - | - | 45 | - |
| Stage 1 | - | - | - | - | 179 | - |
| Stage 2 | - | - | - | - | 470 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 1 | 107 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 108 | - | - | 493 | - |
| HCM Lane V/C Ratio | 0.776 | - | - | 0.167 | - |
| HCM Control Delay (s) | 107 | - | - | 13.8 | - |
| HCM Lane LOS | F | - | - | B | - |
| HCM 95th %tile Q(veh) | 4.3 | - | - | 0.6 | - |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 104 | 763 | 126 | 73 | 697 | 141 | 80 | 57 | 49 | 80 | 41 | 31 |
| Future Volume (veh/h) | 104 | 763 | 126 | 73 | 697 | 141 | 80 | 57 | 49 | 80 | 41 | 31 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.96 | 1.00 | | 0.97 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 132 | 966 | 153 | 92 | 882 | 178 | 101 | 72 | -29 | 101 | 52 | -33 |
| Adj No. of Lanes | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 150 | 1405 | 222 | 467 | 1897 | 383 | 124 | 134 | 114 | 124 | 134 | 0 |
| Arrive On Green | 0.08 | 0.46 | 0.45 | 0.26 | 0.65 | 0.64 | 0.07 | 0.07 | 0.00 | 0.07 | 0.07 | 0.00 |
| Sat Flow, veh/h | 1774 | 3044 | 482 | 1774 | 2917 | 589 | 1774 | 1863 | 1583 | 1774 | 1863 | 0 |
| Grp Volume(v), veh/h | 132 | 561 | 558 | 92 | 535 | 525 | 101 | 72 | -29 | 101 | 19 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1756 | 1774 | 1770 | 1736 | 1774 | 1863 | 1583 | 1774 | 1863 | 0 |
| Q Serve(g_s), s | 9.6 | 32.5 | 32.7 | 5.2 | 19.7 | 19.9 | 7.3 | 4.8 | 0.0 | 7.3 | 1.2 | 0.0 |
| Cycle Q Clear(g_c), s | 9.6 | 32.5 | 32.7 | 5.2 | 19.7 | 19.9 | 7.3 | 4.8 | 0.0 | 7.3 | 1.2 | 0.0 |
| Prop In Lane | 1.00 | | 0.27 | 1.00 | | 0.34 | 1.00 | | 1.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 150 | 817 | 810 | 467 | 1151 | 1129 | 124 | 134 | 114 | 124 | 134 | 0 |
| V/C Ratio(X) | 0.88 | 0.69 | 0.69 | 0.20 | 0.46 | 0.47 | 0.81 | 0.54 | -0.25 | 0.81 | 0.14 | 0.00 |
| Avail Cap(c_a), veh/h | 150 | 817 | 810 | 467 | 1151 | 1129 | 177 | 430 | 365 | 164 | 416 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.93 | 0.93 | 0.93 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 58.8 | 27.6 | 27.8 | 37.2 | 11.4 | 11.5 | 59.6 | 58.2 | 0.0 | 59.6 | 56.5 | 0.0 |
| Incr Delay (d2), s/veh | 39.4 | 4.7 | 4.7 | 0.1 | 1.3 | 1.3 | 11.6 | 4.6 | 0.0 | 15.8 | 0.7 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 6.3 | 17.0 | 16.9 | 2.6 | 9.9 | 9.8 | 4.0 | 2.7 | 0.0 | 4.1 | 0.7 | 0.0 |
| LnGrp Delay(d),s/veh | 98.2 | 32.3 | 32.5 | 37.3 | 12.6 | 12.8 | 71.2 | 62.9 | 0.0 | 75.5 | 57.2 | 0.0 |
| LnGrp LOS | F | C | C | D | B | B | E | E | | E | E | |
| Approach Vol, veh/h | | 1251 | | | 1152 | | | 144 | | | 120 | |
| Approach Delay, s/veh | | 39.3 | | | 14.7 | | | 81.4 | | | 72.6 | |
| Approach LOS | | D | | | B | | | F | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 39.5 | 64.0 | 13.1 | 13.4 | 15.0 | 88.5 | 13.1 | 13.4 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 4.0 | 4.0 | 4.0 | 5.3 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 12.0 | * 59 | 13.0 | 29.0 | 11.0 | 59.7 | 12.0 | 30.0 |
| Max Q Clear Time (g_c+I1), s | 7.2 | 34.7 | 9.3 | 3.2 | 11.6 | 21.9 | 9.3 | 6.8 |
| Green Ext Time (p_c), s | 0.0 | 19.7 | 0.0 | 0.1 | 0.0 | 27.3 | 0.0 | 0.4 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 32.5 |
| HCM 2010 LOS | C |

Notes



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 73 | 784 | 47 | 80 | 854 | 33 | 50 | 18 | 60 | 26 | 13 | 37 |
| Future Volume (veh/h) | 73 | 784 | 47 | 80 | 854 | 33 | 50 | 18 | 60 | 26 | 13 | 37 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.98 | 1.00 | | 0.97 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 82 | 881 | 18 | 90 | 960 | 22 | 56 | 20 | 28 | 29 | 15 | 25 |
| Adj No. of Lanes | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 498 | 2571 | 1131 | 140 | 1688 | 732 | 73 | 137 | 116 | 63 | 43 | 72 |
| Arrive On Green | 0.56 | 1.00 | 1.00 | 0.04 | 0.48 | 0.48 | 0.04 | 0.07 | 0.07 | 0.04 | 0.07 | 0.07 |
| Sat Flow, veh/h | 1774 | 3539 | 1558 | 3442 | 3539 | 1536 | 1774 | 1863 | 1578 | 1774 | 628 | 1046 |
| Grp Volume(v), veh/h | 82 | 881 | 18 | 90 | 960 | 22 | 56 | 20 | 28 | 29 | 0 | 40 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1558 | 1721 | 1770 | 1536 | 1774 | 1863 | 1578 | 1774 | 0 | 1674 |
| Q Serve(g_s), s | 2.9 | 0.0 | 0.0 | 3.3 | 25.3 | 0.8 | 4.1 | 1.3 | 2.2 | 2.1 | 0.0 | 3.0 |
| Cycle Q Clear(g_c), s | 2.9 | 0.0 | 0.0 | 3.3 | 25.3 | 0.8 | 4.1 | 1.3 | 2.2 | 2.1 | 0.0 | 3.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.63 |
| Lane Grp Cap(c), veh/h | 498 | 2571 | 1131 | 140 | 1688 | 732 | 73 | 137 | 116 | 63 | 0 | 115 |
| V/C Ratio(X) | 0.16 | 0.34 | 0.02 | 0.64 | 0.57 | 0.03 | 0.76 | 0.15 | 0.24 | 0.46 | 0.00 | 0.35 |
| Avail Cap(c_a), veh/h | 498 | 2571 | 1131 | 291 | 1688 | 732 | 109 | 516 | 437 | 109 | 0 | 464 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.83 | 0.83 | 0.83 | 0.90 | 0.90 | 0.90 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 21.1 | 0.0 | 0.0 | 61.4 | 24.4 | 10.9 | 61.7 | 56.4 | 56.8 | 61.4 | 0.0 | 57.8 |
| Incr Delay (d2), s/veh | 0.0 | 0.3 | 0.0 | 1.7 | 1.3 | 0.1 | 7.6 | 0.2 | 0.4 | 1.9 | 0.0 | 0.7 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.4 | 0.1 | 0.0 | 1.6 | 12.6 | 0.3 | 2.1 | 0.7 | 1.0 | 1.1 | 0.0 | 1.4 |
| LnGrp Delay(d),s/veh | 21.2 | 0.3 | 0.0 | 63.1 | 25.7 | 10.9 | 69.3 | 56.6 | 57.2 | 63.4 | 0.0 | 58.4 |
| LnGrp LOS | C | A | A | E | C | B | E | E | E | E | | E |
| Approach Vol, veh/h | | 981 | | | 1072 | | | 104 | | | 69 | |
| Approach Delay, s/veh | | 2.0 | | | 28.5 | | | 63.6 | | | 60.5 | |
| Approach LOS | | A | | | C | | | E | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 9.3 | 98.4 | 9.4 | 12.9 | 41.7 | 66.0 | 8.6 | 13.6 |
| Change Period (Y+Rc), s | 4.1 | 5.3 | 4.1 | 4.0 | 5.3 | * 5.3 | 4.1 | * 4.1 |
| Max Green Setting (Gmax), s | 10.3 | 57.7 | 7.9 | 36.0 | 7.9 | * 61 | 7.9 | * 36 |
| Max Q Clear Time (g_c+I1), s | 5.3 | 2.0 | 6.1 | 5.0 | 4.9 | 27.3 | 4.1 | 4.2 |
| Green Ext Time (p_c), s | 0.0 | 29.9 | 0.0 | 0.1 | 0.0 | 23.4 | 0.0 | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 19.5 |
| HCM 2010 LOS | B |

Notes

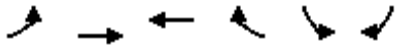


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 50 | 812 | 8 | 335 | 907 | 75 | 14 | 32 | 302 | 176 | 38 | 46 |
| Future Volume (veh/h) | 50 | 812 | 8 | 335 | 907 | 75 | 14 | 32 | 302 | 176 | 38 | 46 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 0.99 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 55 | 892 | 0 | 368 | 997 | 81 | 15 | 35 | 57 | 193 | 42 | 10 |
| Adj No. of Lanes | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 513 | 2148 | 961 | 371 | 1470 | 655 | 40 | 202 | 170 | 96 | 203 | 48 |
| Arrive On Green | 0.58 | 1.00 | 0.00 | 0.11 | 0.42 | 0.42 | 0.02 | 0.11 | 0.11 | 0.05 | 0.14 | 0.14 |
| Sat Flow, veh/h | 1774 | 3539 | 1583 | 3442 | 3539 | 1576 | 1774 | 1863 | 1570 | 1774 | 1453 | 346 |
| Grp Volume(v), veh/h | 55 | 892 | 0 | 368 | 997 | 81 | 15 | 35 | 57 | 193 | 0 | 52 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1583 | 1721 | 1770 | 1576 | 1774 | 1863 | 1570 | 1774 | 0 | 1799 |
| Q Serve(g_s), s | 1.8 | 0.0 | 0.0 | 13.9 | 29.8 | 3.2 | 1.1 | 2.2 | 4.4 | 7.0 | 0.0 | 3.3 |
| Cycle Q Clear(g_c), s | 1.8 | 0.0 | 0.0 | 13.9 | 29.8 | 3.2 | 1.1 | 2.2 | 4.4 | 7.0 | 0.0 | 3.3 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.19 |
| Lane Grp Cap(c), veh/h | 513 | 2148 | 961 | 371 | 1470 | 655 | 40 | 202 | 170 | 96 | 0 | 252 |
| V/C Ratio(X) | 0.11 | 0.42 | 0.00 | 0.99 | 0.68 | 0.12 | 0.38 | 0.17 | 0.33 | 2.02 | 0.00 | 0.21 |
| Avail Cap(c_a), veh/h | 513 | 2148 | 961 | 371 | 1470 | 655 | 96 | 602 | 507 | 96 | 0 | 581 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.95 | 0.95 | 0.00 | 0.90 | 0.90 | 0.90 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 19.9 | 0.0 | 0.0 | 58.0 | 30.9 | 13.8 | 62.6 | 52.6 | 53.6 | 61.5 | 0.0 | 49.5 |
| Incr Delay (d2), s/veh | 0.0 | 0.6 | 0.0 | 42.4 | 2.3 | 0.4 | 2.2 | 0.1 | 0.4 | 493.9 | 0.0 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.9 | 0.2 | 0.0 | 8.8 | 15.0 | 1.4 | 0.6 | 1.2 | 1.9 | 16.5 | 0.0 | 1.7 |
| LnGrp Delay(d),s/veh | 19.9 | 0.6 | 0.0 | 100.4 | 33.2 | 14.2 | 64.8 | 52.8 | 54.0 | 555.4 | 0.0 | 49.7 |
| LnGrp LOS | B | A | | F | C | B | E | D | D | F | | D |
| Approach Vol, veh/h | | 947 | | | 1446 | | | 107 | | | 245 | |
| Approach Delay, s/veh | | 1.7 | | | 49.2 | | | 55.1 | | | 448.0 | |
| Approach LOS | | A | | | D | | | E | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 18.0 | 82.9 | 6.9 | 22.2 | 42.9 | 58.0 | 11.0 | 18.1 |
| Change Period (Y+Rc), s | 4.0 | 5.3 | 4.0 | 4.0 | 5.3 | * 5.3 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 14.0 | 49.7 | 7.0 | 42.0 | 11.0 | * 53 | 7.0 | 42.0 |
| Max Q Clear Time (g_c+I1), s | 15.9 | 2.0 | 3.1 | 5.3 | 3.8 | 31.8 | 9.0 | 6.4 |
| Green Ext Time (p_c), s | 0.0 | 4.1 | 0.0 | 0.2 | 0.0 | 4.4 | 0.0 | 0.2 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 68.7 |
| HCM 2010 LOS | E |

Notes



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 73 | 1217 | 752 | 29 | 560 | 565 |
| Future Volume (veh/h) | 73 | 1217 | 752 | 29 | 560 | 565 |
| Number | 7 | 4 | 8 | 18 | 1 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 79 | 1323 | 817 | 0 | 609 | 326 |
| Adj No. of Lanes | 2 | 2 | 3 | 1 | 1 | 2 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 153 | 1491 | 1740 | 542 | 903 | 1542 |
| Arrive On Green | 0.04 | 0.42 | 0.34 | 0.00 | 0.51 | 0.51 |
| Sat Flow, veh/h | 3442 | 3632 | 5253 | 1583 | 1774 | 2787 |
| Grp Volume(v), veh/h | 79 | 1323 | 817 | 0 | 609 | 326 |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1770 | 1695 | 1583 | 1774 | 1393 |
| Q Serve(g_s), s | 2.6 | 39.7 | 14.5 | 0.0 | 29.5 | 6.8 |
| Cycle Q Clear(g_c), s | 2.6 | 39.7 | 14.5 | 0.0 | 29.5 | 6.8 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 153 | 1491 | 1740 | 542 | 903 | 1542 |
| V/C Ratio(X) | 0.52 | 0.89 | 0.47 | 0.00 | 0.67 | 0.21 |
| Avail Cap(c_a), veh/h | 311 | 1631 | 1740 | 542 | 903 | 1542 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.58 | 0.58 | 1.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 53.7 | 30.7 | 29.6 | 0.0 | 21.1 | 13.0 |
| Incr Delay (d2), s/veh | 1.6 | 3.6 | 0.2 | 0.0 | 2.0 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.3 | 20.0 | 6.8 | 0.0 | 14.9 | 7.5 |
| LnGrp Delay(d),s/veh | 55.3 | 34.3 | 29.8 | 0.0 | 23.1 | 13.1 |
| LnGrp LOS | E | C | C | | C | B |
| Approach Vol, veh/h | | 1402 | 817 | | 935 | |
| Approach Delay, s/veh | | 35.5 | 29.8 | | 19.6 | |
| Approach LOS | | D | C | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | | | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | | | 52.5 | | 62.5 | 9.1 | 43.4 |
| Change Period (Y+Rc), s | | | | 4.5 | | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | | | | 52.5 | | 53.5 | 9.9 | 38.1 |
| Max Q Clear Time (g_c+I1), s | | | | 41.7 | | 31.5 | 4.6 | 16.5 |
| Green Ext Time (p_c), s | | | | 6.2 | | 3.5 | 0.1 | 5.2 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 29.3 |
| HCM 2010 LOS | C |



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 1289 | 488 | 0 | 1146 | 136 | 64 |
| Future Volume (veh/h) | 1289 | 488 | 0 | 1146 | 136 | 64 |
| Number | 4 | 14 | 3 | 8 | 5 | 12 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 0 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 1401 | 530 | 0 | 1246 | 148 | 70 |
| Adj No. of Lanes | 2 | 1 | 0 | 2 | 2 | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 0 | 2 | 2 | 2 |
| Cap, veh/h | 1770 | 792 | 0 | 1770 | 1481 | 681 |
| Arrive On Green | 0.50 | 0.50 | 0.00 | 0.50 | 0.43 | 0.43 |
| Sat Flow, veh/h | 3632 | 1583 | 0 | 3725 | 3442 | 1583 |
| Grp Volume(v), veh/h | 1401 | 530 | 0 | 1246 | 148 | 70 |
| Grp Sat Flow(s),veh/h/ln | 1770 | 1583 | 0 | 1770 | 1721 | 1583 |
| Q Serve(g_s), s | 37.7 | 28.9 | 0.0 | 31.2 | 2.9 | 3.0 |
| Cycle Q Clear(g_c), s | 37.7 | 28.9 | 0.0 | 31.2 | 2.9 | 3.0 |
| Prop In Lane | | 1.00 | 0.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 1770 | 792 | 0 | 1770 | 1481 | 681 |
| V/C Ratio(X) | 0.79 | 0.67 | 0.00 | 0.70 | 0.10 | 0.10 |
| Avail Cap(c_a), veh/h | 2554 | 1143 | 0 | 2554 | 1481 | 681 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.94 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 23.8 | 21.6 | 0.0 | 22.2 | 19.5 | 19.5 |
| Incr Delay (d2), s/veh | 1.1 | 1.0 | 0.0 | 0.5 | 0.1 | 0.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 18.6 | 12.7 | 0.0 | 15.3 | 1.4 | 1.4 |
| LnGrp Delay(d),s/veh | 24.9 | 22.6 | 0.0 | 22.7 | 19.6 | 19.8 |
| LnGrp LOS | C | C | | C | B | B |
| Approach Vol, veh/h | 1931 | | | 1246 | 218 | |
| Approach Delay, s/veh | 24.3 | | | 22.7 | 19.7 | |
| Approach LOS | C | | | C | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | | | 8 |
| Phs Duration (G+Y+Rc), s | | 53.5 | | 61.5 | | | | 61.5 |
| Change Period (Y+Rc), s | | 4.5 | | 4.5 | | | | 4.5 |
| Max Green Setting (Gmax), s | | 23.5 | | 82.5 | | | | 82.5 |
| Max Q Clear Time (g_c+I1), s | | 5.0 | | 39.7 | | | | 33.2 |
| Green Ext Time (p_c), s | | 0.6 | | 17.4 | | | | 11.3 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 23.4 |
| HCM 2010 LOS | C |



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 1331 | 22 | 34 | 1118 | 28 | 38 |
| Future Volume (veh/h) | 1331 | 22 | 34 | 1118 | 28 | 38 |
| Number | 2 | 12 | 1 | 6 | 7 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 0.98 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 1401 | 17 | 36 | 1177 | 29 | 31 |
| Adj No. of Lanes | 2 | 1 | 1 | 2 | 1 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 2872 | 1258 | 50 | 3080 | 121 | 108 |
| Arrive On Green | 0.81 | 0.81 | 0.03 | 0.87 | 0.07 | 0.07 |
| Sat Flow, veh/h | 3632 | 1550 | 1774 | 3632 | 1774 | 1583 |
| Grp Volume(v), veh/h | 1401 | 17 | 36 | 1177 | 29 | 31 |
| Grp Sat Flow(s),veh/h/ln | 1770 | 1550 | 1774 | 1770 | 1774 | 1583 |
| Q Serve(g_s), s | 16.0 | 0.3 | 2.6 | 8.4 | 2.0 | 2.4 |
| Cycle Q Clear(g_c), s | 16.0 | 0.3 | 2.6 | 8.4 | 2.0 | 2.4 |
| Prop In Lane | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 2872 | 1258 | 50 | 3080 | 121 | 108 |
| V/C Ratio(X) | 0.49 | 0.01 | 0.73 | 0.38 | 0.24 | 0.29 |
| Avail Cap(c_a), veh/h | 2872 | 1258 | 150 | 3080 | 368 | 329 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.73 | 0.73 | 0.81 | 0.81 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 3.8 | 2.3 | 62.7 | 1.6 | 57.4 | 57.6 |
| Incr Delay (d2), s/veh | 0.4 | 0.0 | 5.9 | 0.3 | 0.4 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 7.8 | 0.1 | 1.4 | 4.0 | 1.0 | 1.1 |
| LnGrp Delay(d),s/veh | 4.3 | 2.3 | 68.6 | 1.9 | 57.8 | 58.1 |
| LnGrp LOS | A | A | E | A | E | E |
| Approach Vol, veh/h | 1418 | | | 1213 | 60 | |
| Approach Delay, s/veh | 4.2 | | | 3.9 | 57.9 | |
| Approach LOS | A | | | A | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | | 6 | | |
| Phs Duration (G+Y+Rc), s | 7.6 | 109.5 | | 12.9 | | 117.1 | | |
| Change Period (Y+Rc), s | 4.0 | 5.3 | | 4.0 | | 5.3 | | |
| Max Green Setting (Gmax), s | 10.0 | 78.7 | | 27.0 | | 93.7 | | |
| Max Q Clear Time (g_c+I1), s | 4.6 | 18.0 | | 4.4 | | 10.4 | | |
| Green Ext Time (p_c), s | 0.0 | 8.0 | | 0.1 | | 6.0 | | |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 5.3 |
| HCM 2010 LOS | A |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 334 | 845 | 167 | 76 | 746 | 150 | 155 | 198 | 107 | 196 | 159 | 251 |
| Future Volume (veh/h) | 334 | 845 | 167 | 76 | 746 | 150 | 155 | 198 | 107 | 196 | 159 | 251 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 7 | 4 | 14 | 3 | 8 | 18 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 0.98 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 359 | 909 | 171 | 82 | 802 | 70 | 167 | 213 | 78 | 211 | 171 | 0 |
| Adj No. of Lanes | 2 | 2 | 0 | 1 | 2 | 1 | 1 | 2 | 1 | 2 | 2 | 1 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 415 | 1278 | 240 | 441 | 2013 | 899 | 164 | 340 | 149 | 300 | 338 | 151 |
| Arrive On Green | 0.24 | 0.86 | 0.84 | 0.25 | 0.57 | 0.57 | 0.09 | 0.10 | 0.10 | 0.09 | 0.10 | 0.00 |
| Sat Flow, veh/h | 3442 | 2966 | 558 | 1774 | 3539 | 1581 | 1774 | 3539 | 1551 | 3442 | 3539 | 1583 |
| Grp Volume(v), veh/h | 359 | 542 | 538 | 82 | 802 | 70 | 167 | 213 | 78 | 211 | 171 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1770 | 1755 | 1774 | 1770 | 1581 | 1774 | 1770 | 1551 | 1721 | 1770 | 1583 |
| Q Serve(g_s), s | 13.0 | 14.2 | 14.7 | 4.7 | 16.4 | 2.6 | 12.0 | 7.5 | 4.9 | 7.8 | 6.0 | 0.0 |
| Cycle Q Clear(g_c), s | 13.0 | 14.2 | 14.7 | 4.7 | 16.4 | 2.6 | 12.0 | 7.5 | 4.9 | 7.8 | 6.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.32 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 415 | 762 | 756 | 441 | 2013 | 899 | 164 | 340 | 149 | 300 | 338 | 151 |
| V/C Ratio(X) | 0.87 | 0.71 | 0.71 | 0.19 | 0.40 | 0.08 | 1.02 | 0.63 | 0.52 | 0.70 | 0.51 | 0.00 |
| Avail Cap(c_a), veh/h | 556 | 762 | 756 | 441 | 2013 | 899 | 164 | 953 | 418 | 318 | 953 | 426 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.88 | 0.88 | 0.88 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 48.3 | 6.1 | 6.4 | 38.5 | 15.6 | 12.7 | 59.0 | 56.5 | 34.8 | 57.7 | 55.9 | 0.0 |
| Incr Delay (d2), s/veh | 9.5 | 4.9 | 5.0 | 0.2 | 0.6 | 0.2 | 75.6 | 1.9 | 2.8 | 6.4 | 1.2 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 6.7 | 7.4 | 7.7 | 2.3 | 8.2 | 1.2 | 9.3 | 3.8 | 2.2 | 4.0 | 3.0 | 0.0 |
| LnGrp Delay(d),s/veh | 57.8 | 11.0 | 11.4 | 38.7 | 16.2 | 12.8 | 134.8 | 58.4 | 37.6 | 64.2 | 57.1 | 0.0 |
| LnGrp LOS | E | B | B | D | B | B | F | E | D | E | E | |
| Approach Vol, veh/h | | 1439 | | | 954 | | | 458 | | | 382 | |
| Approach Delay, s/veh | | 22.8 | | | 17.9 | | | 82.7 | | | 61.0 | |
| Approach LOS | | C | | | B | | | F | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 17.6 | 60.0 | 15.9 | 16.5 | 19.7 | 77.9 | 16.0 | 16.4 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 4.6 | * 4.6 | 4.0 | 5.3 | 4.0 | 4.6 |
| Max Green Setting (Gmax), s | 12.3 | * 55 | 12.0 | * 34 | 21.0 | 44.7 | 12.0 | 34.4 |
| Max Q Clear Time (g_c+I1), s | 16.7 | 16.7 | 9.8 | 9.5 | 15.0 | 18.4 | 14.0 | 8.0 |
| Green Ext Time (p_c), s | 0.1 | 9.8 | 0.1 | 1.5 | 0.6 | 6.9 | 0.0 | 1.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 34.4 |
| HCM 2010 LOS | C |

Notes



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 51 | 190 | 16 | 0 | 48 | 430 | 31 | 920 | 0 | 546 | 442 | 27 |
| Future Volume (veh/h) | 51 | 190 | 16 | 0 | 48 | 430 | 31 | 920 | 0 | 546 | 442 | 27 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1827 | 1827 | 1900 | 1827 | 1827 | 1827 | 1827 | 1827 | 1900 | 1827 | 1827 | 1900 |
| Adj Flow Rate, veh/h | 53 | 198 | 0 | 0 | 50 | 0 | 32 | 958 | 0 | 569 | 460 | 0 |
| Adj No. of Lanes | 1 | 2 | 0 | 1 | 1 | 1 | 1 | 2 | 0 | 2 | 2 | 0 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Cap, veh/h | 143 | 745 | 0 | 2 | 148 | 66 | 78 | 1347 | 0 | 821 | 2035 | 0 |
| Arrive On Green | 0.08 | 0.21 | 0.00 | 0.00 | 0.08 | 0.00 | 0.04 | 0.39 | 0.00 | 0.24 | 0.59 | 0.00 |
| Sat Flow, veh/h | 1740 | 3563 | 0 | 1740 | 1827 | 1553 | 1740 | 3563 | 0 | 3375 | 3563 | 0 |
| Grp Volume(v), veh/h | 53 | 198 | 0 | 0 | 50 | 0 | 32 | 958 | 0 | 569 | 460 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1740 | 1736 | 0 | 1740 | 1827 | 1553 | 1740 | 1736 | 0 | 1688 | 1736 | 0 |
| Q Serve(g_s), s | 2.2 | 3.7 | 0.0 | 0.0 | 2.0 | 0.0 | 1.4 | 18.2 | 0.0 | 11.9 | 4.9 | 0.0 |
| Cycle Q Clear(g_c), s | 2.2 | 3.7 | 0.0 | 0.0 | 2.0 | 0.0 | 1.4 | 18.2 | 0.0 | 11.9 | 4.9 | 0.0 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 143 | 745 | 0 | 2 | 148 | 66 | 78 | 1347 | 0 | 821 | 2035 | 0 |
| V/C Ratio(X) | 0.37 | 0.27 | 0.00 | 0.00 | 0.34 | 0.00 | 0.41 | 0.71 | 0.00 | 0.69 | 0.23 | 0.00 |
| Avail Cap(c_a), veh/h | 357 | 1426 | 0 | 179 | 563 | 419 | 313 | 3878 | 0 | 2037 | 5349 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 33.8 | 25.5 | 0.0 | 0.0 | 33.8 | 0.0 | 36.2 | 20.1 | 0.0 | 26.8 | 7.7 | 0.0 |
| Incr Delay (d2), s/veh | 1.6 | 0.2 | 0.0 | 0.0 | 1.3 | 0.0 | 3.4 | 0.7 | 0.0 | 1.1 | 0.1 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.1 | 1.8 | 0.0 | 0.0 | 1.1 | 0.0 | 0.7 | 8.8 | 0.0 | 5.7 | 2.4 | 0.0 |
| LnGrp Delay(d),s/veh | 35.4 | 25.7 | 0.0 | 0.0 | 35.2 | 0.0 | 39.6 | 20.9 | 0.0 | 27.9 | 7.7 | 0.0 |
| LnGrp LOS | D | C | | | D | | D | C | | C | A | |
| Approach Vol, veh/h | | 251 | | | 50 | | | 990 | | | 1029 | |
| Approach Delay, s/veh | | 27.7 | | | 35.2 | | | 21.5 | | | 18.9 | |
| Approach LOS | | C | | | D | | | C | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 12.9 | 34.2 | 0.0 | 20.7 | 7.5 | 49.7 | 10.4 | 10.3 |
| Change Period (Y+Rc), s | 7.0 | 7.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 | 7.0 |
| Max Green Setting (Gmax), s | 4.0 | 84.0 | 5.0 | 29.0 | 13.0 | 117.0 | 13.0 | 21.0 |
| Max Q Clear Time (g_c+I1), s | 3.9 | 20.2 | 0.0 | 5.7 | 3.4 | 6.9 | 4.2 | 4.0 |
| Green Ext Time (p_c), s | 2.0 | 7.0 | 0.0 | 1.0 | 0.0 | 2.8 | 0.0 | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 21.3 |
| HCM 2010 LOS | C |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 8 | 13 | 2 | 151 | 6 | 2 | 0 | 958 | 500 | 3 | 477 | 4 |
| Future Volume (veh/h) | 8 | 13 | 2 | 151 | 6 | 2 | 0 | 958 | 500 | 3 | 477 | 4 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 1 | 6 | 16 | 5 | 2 | 12 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 8 | 14 | 2 | 159 | 6 | 1 | 0 | 1008 | 492 | 3 | 502 | 3 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 43 | 66 | 9 | 220 | 220 | 37 | 2 | 1166 | 1187 | 30 | 2490 | 15 |
| Arrive On Green | 0.02 | 0.04 | 0.03 | 0.12 | 0.14 | 0.13 | 0.00 | 0.63 | 0.63 | 0.02 | 0.69 | 0.68 |
| Sat Flow, veh/h | 1774 | 1595 | 228 | 1774 | 1554 | 259 | 1774 | 1863 | 1583 | 1774 | 3607 | 22 |
| Grp Volume(v), veh/h | 8 | 0 | 16 | 159 | 0 | 7 | 0 | 1008 | 492 | 3 | 246 | 259 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 0 | 1823 | 1774 | 0 | 1813 | 1774 | 1863 | 1583 | 1774 | 1770 | 1859 |
| Q Serve(g_s), s | 0.4 | 0.0 | 0.7 | 7.2 | 0.0 | 0.3 | 0.0 | 36.8 | 9.4 | 0.1 | 4.2 | 4.2 |
| Cycle Q Clear(g_c), s | 0.4 | 0.0 | 0.7 | 7.2 | 0.0 | 0.3 | 0.0 | 36.8 | 9.4 | 0.1 | 4.2 | 4.2 |
| Prop In Lane | 1.00 | | 0.13 | 1.00 | | 0.14 | 1.00 | | 1.00 | 1.00 | | 0.01 |
| Lane Grp Cap(c), veh/h | 43 | 0 | 76 | 220 | 0 | 257 | 2 | 1166 | 1187 | 30 | 1222 | 1283 |
| V/C Ratio(X) | 0.19 | 0.00 | 0.21 | 0.72 | 0.00 | 0.03 | 0.00 | 0.86 | 0.41 | 0.10 | 0.20 | 0.20 |
| Avail Cap(c_a), veh/h | 149 | 0 | 196 | 786 | 0 | 847 | 149 | 3481 | 3155 | 149 | 3307 | 3474 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 39.9 | 0.0 | 38.7 | 35.2 | 0.0 | 30.9 | 0.0 | 12.7 | 3.8 | 40.4 | 4.6 | 4.6 |
| Incr Delay (d2), s/veh | 2.1 | 0.0 | 1.4 | 4.4 | 0.0 | 0.0 | 0.0 | 2.1 | 0.2 | 1.5 | 0.1 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.2 | 0.0 | 0.4 | 3.8 | 0.0 | 0.1 | 0.0 | 19.4 | 4.0 | 0.1 | 2.0 | 2.1 |
| LnGrp Delay(d),s/veh | 42.0 | 0.0 | 40.1 | 39.6 | 0.0 | 31.0 | 0.0 | 14.8 | 4.0 | 41.9 | 4.7 | 4.7 |
| LnGrp LOS | D | | D | D | | C | | B | A | D | A | A |
| Approach Vol, veh/h | | 24 | | | 166 | | | 1500 | | | 508 | |
| Approach Delay, s/veh | | 40.7 | | | 39.2 | | | 11.3 | | | 4.9 | |
| Approach LOS | | D | | | D | | | B | | | A | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 10.0 | 61.6 | 14.4 | 7.5 | 5.4 | 56.2 | 6.0 | 15.8 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 6.0 | 155.0 | 36.0 | 8.0 | 6.0 | 155.0 | 6.0 | 38.0 |
| Max Q Clear Time (g_c+I1), s | 10.0 | 6.2 | 9.2 | 2.7 | 2.1 | 38.8 | 2.4 | 2.3 |
| Green Ext Time (p_c), s | 0.0 | 2.7 | 0.4 | 0.0 | 0.0 | 12.4 | 0.0 | 0.0 |

| Intersection Summary | | |
|---|---|---|
| HCM 2010 Ctrl Delay | | 12.2 |
| HCM 2010 LOS | | B |

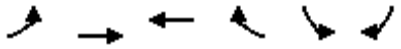


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 185 | 11 | 58 | 37 | 314 | 29 | 1152 | 229 | 206 | 317 | 81 |
| Future Volume (veh/h) | 0 | 185 | 11 | 58 | 37 | 314 | 29 | 1152 | 229 | 206 | 317 | 81 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 0 | 195 | 12 | 50 | 54 | 331 | 31 | 1213 | 0 | 217 | 334 | 0 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 2 | 277 | 17 | 101 | 482 | 410 | 80 | 1588 | 784 | 292 | 2011 | 0 |
| Arrive On Green | 0.00 | 0.16 | 0.14 | 0.06 | 0.26 | 0.26 | 0.04 | 0.45 | 0.00 | 0.16 | 0.57 | 0.00 |
| Sat Flow, veh/h | 1774 | 1737 | 107 | 1774 | 1863 | 1583 | 1774 | 3539 | 1583 | 1774 | 3632 | 0 |
| Grp Volume(v), veh/h | 0 | 0 | 207 | 50 | 54 | 331 | 31 | 1213 | 0 | 217 | 334 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 0 | 1844 | 1774 | 1863 | 1583 | 1774 | 1770 | 1583 | 1774 | 1770 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 10.0 | 2.6 | 2.1 | 18.4 | 1.6 | 27.0 | 0.0 | 10.9 | 4.2 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 0.0 | 10.0 | 2.6 | 2.1 | 18.4 | 1.6 | 27.0 | 0.0 | 10.9 | 4.2 | 0.0 |
| Prop In Lane | 1.00 | | 0.06 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 2 | 0 | 294 | 101 | 482 | 410 | 80 | 1588 | 784 | 292 | 2011 | 0 |
| V/C Ratio(X) | 0.00 | 0.00 | 0.70 | 0.49 | 0.11 | 0.81 | 0.39 | 0.76 | 0.00 | 0.74 | 0.17 | 0.00 |
| Avail Cap(c_a), veh/h | 113 | 0 | 922 | 302 | 1130 | 961 | 170 | 3654 | 1708 | 925 | 5161 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 0.0 | 0.0 | 37.4 | 43.0 | 26.6 | 32.6 | 43.6 | 21.7 | 0.0 | 37.3 | 9.7 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 0.0 | 3.1 | 3.7 | 0.1 | 3.8 | 3.1 | 0.8 | 0.0 | 3.7 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 0.0 | 5.3 | 1.4 | 1.1 | 8.5 | 0.9 | 13.3 | 0.0 | 5.7 | 2.1 | 0.0 |
| LnGrp Delay(d),s/veh | 0.0 | 0.0 | 40.5 | 46.7 | 26.7 | 36.4 | 46.7 | 22.5 | 0.0 | 41.1 | 9.7 | 0.0 |
| LnGrp LOS | | | D | D | C | D | D | C | | D | A | |
| Approach Vol, veh/h | | 207 | | | 435 | | | 1244 | | | 551 | |
| Approach Delay, s/veh | | 40.5 | | | 36.4 | | | 23.1 | | | 22.1 | |
| Approach LOS | | D | | | D | | | C | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 9.5 | 46.1 | 9.4 | 19.0 | 8.2 | 57.4 | 0.0 | 28.3 |
| Change Period (Y+Rc), s | 6.0 | 7.0 | 6.0 | 6.0 | 6.0 | 7.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 7.0 | 94.0 | 14.0 | 45.0 | 7.0 | 134.0 | 4.0 | 55.0 |
| Max Q Clear Time (g_c+I1), s | 2.9 | 29.0 | 4.6 | 12.0 | 3.6 | 6.2 | 0.0 | 20.4 |
| Green Ext Time (p_c), s | 0.6 | 10.1 | 0.0 | 1.0 | 0.0 | 2.0 | 0.0 | 1.4 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 26.7 |
| HCM 2010 LOS | C |

Notes



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 1 | 0 | 322 | 752 | 1 |
| Future Volume (veh/h) | 0 | 1 | 0 | 322 | 752 | 1 |
| Number | 5 | 2 | 6 | 16 | 3 | 18 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 0 | 1 | 0 | 413 | 964 | 1 |
| Adj No. of Lanes | 1 | 1 | 1 | 1 | 2 | 1 |
| Peak Hour Factor | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 219 | 576 | 576 | 490 | 1436 | 661 |
| Arrive On Green | 0.00 | 0.31 | 0.00 | 0.31 | 0.42 | 0.42 |
| Sat Flow, veh/h | 969 | 1863 | 1863 | 1583 | 3442 | 1583 |
| Grp Volume(v), veh/h | 0 | 1 | 0 | 413 | 964 | 1 |
| Grp Sat Flow(s),veh/h/ln | 969 | 1863 | 1863 | 1583 | 1721 | 1583 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 8.0 | 7.5 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 0.0 | 0.0 | 8.0 | 7.5 | 0.0 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 219 | 576 | 576 | 490 | 1436 | 661 |
| V/C Ratio(X) | 0.00 | 0.00 | 0.00 | 0.84 | 0.67 | 0.00 |
| Avail Cap(c_a), veh/h | 287 | 708 | 708 | 602 | 8242 | 3792 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 0.0 | 7.9 | 0.0 | 10.6 | 7.8 | 5.6 |
| Incr Delay (d2), s/veh | 0.0 | 0.0 | 0.0 | 8.9 | 0.6 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 0.0 | 0.0 | 4.7 | 3.6 | 0.0 |
| LnGrp Delay(d),s/veh | 0.0 | 7.9 | 0.0 | 19.6 | 8.3 | 5.6 |
| LnGrp LOS | | A | | B | A | A |
| Approach Vol, veh/h | | 1 | 413 | | 965 | |
| Approach Delay, s/veh | | 7.9 | 19.6 | | 8.3 | |
| Approach LOS | | A | B | | A | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 14.7 | | | | 14.7 | | 18.2 |
| Change Period (Y+Rc), s | | 4.5 | | | | 4.5 | | 4.5 |
| Max Green Setting (Gmax), s | | 12.5 | | | | 12.5 | | 78.8 |
| Max Q Clear Time (g_c+I1), s | | 2.0 | | | | 10.0 | | 9.5 |
| Green Ext Time (p_c), s | | 0.0 | | | | 0.4 | | 4.3 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 11.7 |
| HCM 2010 LOS | B |

Notes



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 6 | 783 | 0 | 0 | 255 | 947 | 16 | 3 | 155 | 0 | 0 | 0 |
| Future Volume (veh/h) | 6 | 783 | 0 | 0 | 255 | 947 | 16 | 3 | 155 | 0 | 0 | 0 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 7 | 4 | 14 | | | |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | | | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 0 | 0 | 1863 | 1863 | 1863 | 1863 | 1863 | | | |
| Adj Flow Rate, veh/h | 7 | 880 | 0 | 0 | 287 | 1064 | 20 | 0 | 174 | | | |
| Adj No. of Lanes | 2 | 3 | 0 | 0 | 1 | 2 | 2 | 0 | 1 | | | |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | | | |
| Percent Heavy Veh, % | 2 | 2 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | | | |
| Cap, veh/h | 23 | 3011 | 0 | 0 | 910 | 1548 | 536 | 0 | 239 | | | |
| Arrive On Green | 0.01 | 0.59 | 0.00 | 0.00 | 0.49 | 0.49 | 0.15 | 0.00 | 0.15 | | | |
| Sat Flow, veh/h | 3442 | 5253 | 0 | 0 | 1863 | 3167 | 3548 | 0 | 1583 | | | |
| Grp Volume(v), veh/h | 7 | 880 | 0 | 0 | 287 | 1064 | 20 | 0 | 174 | | | |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1695 | 0 | 0 | 1863 | 1583 | 1774 | 0 | 1583 | | | |
| Q Serve(g_s), s | 0.1 | 3.5 | 0.0 | 0.0 | 3.8 | 10.7 | 0.2 | 0.0 | 4.3 | | | |
| Cycle Q Clear(g_c), s | 0.1 | 3.5 | 0.0 | 0.0 | 3.8 | 10.7 | 0.2 | 0.0 | 4.3 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 1.00 | 1.00 | | 1.00 | | | |
| Lane Grp Cap(c), veh/h | 23 | 3011 | 0 | 0 | 910 | 1548 | 536 | 0 | 239 | | | |
| V/C Ratio(X) | 0.31 | 0.29 | 0.00 | 0.00 | 0.32 | 0.69 | 0.04 | 0.00 | 0.73 | | | |
| Avail Cap(c_a), veh/h | 1334 | 9082 | 0 | 0 | 2424 | 4121 | 3929 | 0 | 1753 | | | |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | | | |
| Uniform Delay (d), s/veh | 20.4 | 4.1 | 0.0 | 0.0 | 6.4 | 8.1 | 15.0 | 0.0 | 16.7 | | | |
| Incr Delay (d2), s/veh | 7.6 | 0.1 | 0.0 | 0.0 | 0.2 | 0.6 | 0.0 | 0.0 | 4.2 | | | |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| %ile BackOfQ(50%),veh/ln | 0.1 | 1.6 | 0.0 | 0.0 | 2.0 | 4.7 | 0.1 | 0.0 | 4.0 | | | |
| LnGrp Delay(d),s/veh | 28.0 | 4.2 | 0.0 | 0.0 | 6.6 | 8.7 | 15.0 | 0.0 | 20.9 | | | |
| LnGrp LOS | C | A | | | A | A | B | | C | | | |
| Approach Vol, veh/h | | 887 | | | 1351 | | | 194 | | | | |
| Approach Delay, s/veh | | 4.4 | | | 8.2 | | | 20.3 | | | | |
| Approach LOS | | A | | | A | | | C | | | | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | |
| Phs Duration (G+Y+Rc), s | | 29.7 | | 11.5 | 4.3 | 25.5 | | |
| Change Period (Y+Rc), s | | 5.3 | | 5.3 | 4.0 | 5.3 | | |
| Max Green Setting (Gmax), s | | 73.7 | | 45.7 | 16.0 | 53.7 | | |
| Max Q Clear Time (g_c+I1), s | | 5.5 | | 6.3 | 2.1 | 12.7 | | |
| Green Ext Time (p_c), s | | 6.7 | | 0.7 | 0.0 | 7.5 | | |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 7.8 |
| HCM 2010 LOS | A |

Notes

| Intersection | |
|---|---|
| Int Delay, s/veh | 20.3 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 82 | 381 | 23 | 32 | 422 | 37 |
| Future Vol, veh/h | 82 | 381 | 23 | 32 | 422 | 37 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 87 | 405 | 24 | 34 | 449 | 39 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 978 | 41 | 0 | 0 | 58 | 0 |
| Stage 1 | 41 | - | - | - | - | - |
| Stage 2 | 937 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 278 | 1030 | - | - | 1546 | - |
| Stage 1 | 981 | - | - | - | - | - |
| Stage 2 | 381 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 195 | 1030 | - | - | 1546 | - |
| Mov Cap-2 Maneuver | 195 | - | - | - | - | - |
| Stage 1 | 690 | - | - | - | - | - |
| Stage 2 | 381 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 35.4 | 0 | 7.6 |
| HCM LOS | E | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 586 | 1546 | - |
| HCM Lane V/C Ratio | - | - | 0.841 | 0.29 | - |
| HCM Control Delay (s) | - | - | 35.4 | 8.3 | 0 |
| HCM Lane LOS | - | - | E | A | A |
| HCM 95th %tile Q(veh) | - | - | 9 | 1.2 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.9 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 19 | 578 | 598 | 39 | 30 | 3 |
| Future Vol, veh/h | 19 | 578 | 598 | 39 | 30 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 21 | 628 | 650 | 42 | 33 | 3 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 692 | 0 | - | 0 | 1341 | 671 |
| Stage 1 | - | - | - | - | 671 | - |
| Stage 2 | - | - | - | - | 670 | - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | 903 | - | - | - | 168 | 456 |
| Stage 1 | - | - | - | - | 508 | - |
| Stage 2 | - | - | - | - | 509 | - |
| Platoon blocked, % | | | - | - | - | |
| Mov Cap-1 Maneuver | 903 | - | - | - | 164 | 456 |
| Mov Cap-2 Maneuver | - | - | - | - | 164 | - |
| Stage 1 | - | - | - | - | 496 | - |
| Stage 2 | - | - | - | - | 509 | - |

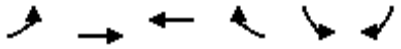
| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.3 | 0 | 31 |
| HCM LOS | | | D |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 903 | - | - | - | 174 |
| HCM Lane V/C Ratio | 0.023 | - | - | - | 0.206 |
| HCM Control Delay (s) | 9.1 | - | - | - | 31 |
| HCM Lane LOS | A | - | - | - | D |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 0.7 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 408 | 200 | 300 | 577 | 60 | 300 |
| Future Volume (veh/h) | 408 | 200 | 300 | 577 | 60 | 300 |
| Number | 4 | 14 | 3 | 8 | 5 | 12 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 443 | 217 | 326 | 627 | 65 | 326 |
| Adj No. of Lanes | 2 | 0 | 1 | 2 | 1 | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 626 | 304 | 400 | 2055 | 444 | 396 |
| Arrive On Green | 0.27 | 0.27 | 0.23 | 0.58 | 0.25 | 0.25 |
| Sat Flow, veh/h | 2405 | 1123 | 1774 | 3632 | 1774 | 1583 |
| Grp Volume(v), veh/h | 338 | 322 | 326 | 627 | 65 | 326 |
| Grp Sat Flow(s),veh/h/ln | 1770 | 1665 | 1774 | 1770 | 1774 | 1583 |
| Q Serve(g_s), s | 9.2 | 9.3 | 9.3 | 4.8 | 1.5 | 10.4 |
| Cycle Q Clear(g_c), s | 9.2 | 9.3 | 9.3 | 4.8 | 1.5 | 10.4 |
| Prop In Lane | | 0.67 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 479 | 451 | 400 | 2055 | 444 | 396 |
| V/C Ratio(X) | 0.71 | 0.71 | 0.81 | 0.31 | 0.15 | 0.82 |
| Avail Cap(c_a), veh/h | 814 | 765 | 949 | 3819 | 782 | 698 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 17.5 | 17.6 | 19.6 | 5.7 | 15.5 | 18.9 |
| Incr Delay (d2), s/veh | 1.9 | 2.1 | 4.1 | 0.1 | 0.2 | 4.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 4.7 | 4.5 | 5.0 | 2.4 | 0.8 | 5.0 |
| LnGrp Delay(d),s/veh | 19.4 | 19.7 | 23.6 | 5.8 | 15.7 | 23.2 |
| LnGrp LOS | B | B | C | A | B | C |
| Approach Vol, veh/h | 660 | | | 953 | 391 | |
| Approach Delay, s/veh | 19.6 | | | 11.9 | 21.9 | |
| Approach LOS | B | | | B | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | 3 | 4 | | | | 8 |
| Phs Duration (G+Y+Rc), s | | 17.8 | 16.5 | 18.9 | | | | 35.4 |
| Change Period (Y+Rc), s | | 4.5 | 4.5 | 4.5 | | | | 4.5 |
| Max Green Setting (Gmax), s | | 23.5 | 28.5 | 24.5 | | | | 57.5 |
| Max Q Clear Time (g_c+I1), s | | 12.4 | 11.3 | 11.3 | | | | 6.8 |
| Green Ext Time (p_c), s | | 1.0 | 0.8 | 3.1 | | | | 4.2 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 16.4 |
| HCM 2010 LOS | B |



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 40 | 669 | 830 | 161 | 411 | 47 |
| Future Volume (veh/h) | 40 | 669 | 830 | 161 | 411 | 47 |
| Number | 7 | 4 | 8 | 18 | 1 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 43 | 727 | 902 | 47 | 447 | 36 |
| Adj No. of Lanes | 1 | 2 | 2 | 1 | 1 | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 162 | 1879 | 1266 | 566 | 531 | 474 |
| Arrive On Green | 0.09 | 0.53 | 0.36 | 0.36 | 0.30 | 0.30 |
| Sat Flow, veh/h | 1774 | 3632 | 3632 | 1583 | 1774 | 1583 |
| Grp Volume(v), veh/h | 43 | 727 | 902 | 47 | 447 | 36 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1770 | 1583 | 1774 | 1583 |
| Q Serve(g_s), s | 1.2 | 6.7 | 12.1 | 1.1 | 12.9 | 0.9 |
| Cycle Q Clear(g_c), s | 1.2 | 6.7 | 12.1 | 1.1 | 12.9 | 0.9 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 162 | 1879 | 1266 | 566 | 531 | 474 |
| V/C Ratio(X) | 0.27 | 0.39 | 0.71 | 0.08 | 0.84 | 0.08 |
| Avail Cap(c_a), veh/h | 275 | 2948 | 2109 | 944 | 1132 | 1010 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 23.2 | 7.6 | 15.2 | 11.7 | 18.0 | 13.8 |
| Incr Delay (d2), s/veh | 0.9 | 0.1 | 0.8 | 0.1 | 3.7 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.6 | 3.3 | 6.0 | 0.5 | 6.9 | 0.9 |
| LnGrp Delay(d),s/veh | 24.1 | 7.7 | 15.9 | 11.7 | 21.7 | 13.8 |
| LnGrp LOS | C | A | B | B | C | B |
| Approach Vol, veh/h | | 770 | 949 | | 483 | |
| Approach Delay, s/veh | | 8.6 | 15.7 | | 21.1 | |
| Approach LOS | | A | B | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | | | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | | | 34.4 | | 20.4 | 9.5 | 24.9 |
| Change Period (Y+Rc), s | | | | 5.3 | | 4.0 | 4.5 | 5.3 |
| Max Green Setting (Gmax), s | | | | 45.7 | | 35.0 | 8.5 | 32.7 |
| Max Q Clear Time (g_c+I1), s | | | | 8.7 | | 14.9 | 3.2 | 14.1 |
| Green Ext Time (p_c), s | | | | 5.1 | | 1.5 | 0.0 | 5.6 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 14.4 |
| HCM 2010 LOS | B |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 76 | 882 | 122 | 560 | 910 | 89 | 68 | 195 | 435 | 69 | 468 | 13 |
| Future Volume (veh/h) | 76 | 882 | 122 | 560 | 910 | 89 | 68 | 195 | 435 | 69 | 468 | 13 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.96 | 1.00 | | 0.96 | 1.00 | | 0.49 | 1.00 | | 0.72 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 82 | 948 | 80 | 602 | 978 | 88 | 73 | 210 | 212 | 74 | 503 | 13 |
| Adj No. of Lanes | 1 | 2 | 0 | 2 | 2 | 0 | 1 | 1 | 2 | 1 | 1 | 0 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 104 | 996 | 84 | 686 | 1450 | 130 | 94 | 555 | 963 | 96 | 541 | 14 |
| Arrive On Green | 0.06 | 0.30 | 0.30 | 0.20 | 0.44 | 0.44 | 0.05 | 0.30 | 0.30 | 0.05 | 0.30 | 0.30 |
| Sat Flow, veh/h | 1774 | 3292 | 278 | 3442 | 3270 | 294 | 1774 | 1863 | 1367 | 1774 | 1787 | 46 |
| Grp Volume(v), veh/h | 82 | 510 | 518 | 602 | 529 | 537 | 73 | 210 | 212 | 74 | 0 | 516 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1801 | 1721 | 1770 | 1795 | 1774 | 1863 | 683 | 1774 | 0 | 1833 |
| Q Serve(g_s), s | 5.6 | 34.7 | 34.7 | 20.9 | 29.2 | 29.2 | 5.0 | 11.0 | 11.4 | 5.1 | 0.0 | 33.6 |
| Cycle Q Clear(g_c), s | 5.6 | 34.7 | 34.7 | 20.9 | 29.2 | 29.2 | 5.0 | 11.0 | 11.4 | 5.1 | 0.0 | 33.6 |
| Prop In Lane | 1.00 | | 0.15 | 1.00 | | 0.16 | 1.00 | | 1.00 | 1.00 | | 0.03 |
| Lane Grp Cap(c), veh/h | 104 | 535 | 545 | 686 | 785 | 796 | 94 | 555 | 963 | 96 | 0 | 555 |
| V/C Ratio(X) | 0.79 | 0.95 | 0.95 | 0.88 | 0.67 | 0.67 | 0.77 | 0.38 | 0.22 | 0.77 | 0.00 | 0.93 |
| Avail Cap(c_a), veh/h | 159 | 539 | 549 | 923 | 785 | 796 | 375 | 555 | 963 | 368 | 0 | 611 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 57.2 | 42.0 | 42.0 | 47.8 | 27.2 | 27.2 | 57.5 | 34.2 | 18.4 | 57.5 | 0.0 | 41.7 |
| Incr Delay (d2), s/veh | 13.9 | 27.1 | 26.8 | 7.5 | 2.4 | 2.4 | 12.5 | 0.4 | 0.1 | 12.4 | 0.0 | 20.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.2 | 21.0 | 21.3 | 10.7 | 14.8 | 15.0 | 2.8 | 5.7 | 2.2 | 2.8 | 0.0 | 20.1 |
| LnGrp Delay(d),s/veh | 71.1 | 69.1 | 68.8 | 55.3 | 29.6 | 29.6 | 70.0 | 34.6 | 18.5 | 69.9 | 0.0 | 61.6 |
| LnGrp LOS | E | E | E | E | C | C | E | C | B | E | | E |
| Approach Vol, veh/h | | 1110 | | | 1668 | | | 495 | | | 590 | |
| Approach Delay, s/veh | | 69.1 | | | 38.9 | | | 32.9 | | | 62.7 | |
| Approach LOS | | E | | | D | | | C | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 28.5 | 42.7 | 10.6 | 41.2 | 11.2 | 60.1 | 11.1 | 40.7 |
| Change Period (Y+Rc), s | 4.0 | 5.5 | 4.0 | 4.0 | 4.0 | 5.5 | 4.5 | 4.0 |
| Max Green Setting (Gmax), s | 33.0 | 37.5 | 26.0 | 41.0 | 11.0 | 54.5 | 25.5 | 36.0 |
| Max Q Clear Time (g_c+I2), s | 22.9 | 36.7 | 7.0 | 35.6 | 7.6 | 31.2 | 7.1 | 13.4 |
| Green Ext Time (p_c), s | 1.6 | 0.5 | 0.1 | 1.6 | 0.0 | 8.2 | 0.1 | 3.3 |

| Intersection Summary | | |
|---|---|---|
| HCM 2010 Ctrl Delay | | 50.4 |
| HCM 2010 LOS | | D |

| Intersection | |
|---|---|
| Int Delay, s/veh | 5.2 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 1349 | 33 | 12 | 1559 | 22 | 71 |
| Future Vol, veh/h | 1349 | 33 | 12 | 1559 | 22 | 71 |
| Conflicting Peds, #/hr | 0 | 1 | 1 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 150 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 93 | 93 | 93 | 93 | 93 | 93 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1451 | 35 | 13 | 1676 | 24 | 76 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 1487 | 0 | 2334 | 744 |
| Stage 1 | - | - | - | - | 1470 | - |
| Stage 2 | - | - | - | - | 864 | - |
| Critical Hdwy | - | - | 4.14 | - | 6.84 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 | - |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 | 3.32 |
| Pot Cap-1 Maneuver | - | - | 448 | - | 31 | 357 |
| Stage 1 | - | - | - | - | 178 | - |
| Stage 2 | - | - | - | - | 373 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 448 | - | 30 | 357 |
| Mov Cap-2 Maneuver | - | - | - | - | 30 | - |
| Stage 1 | - | - | - | - | 173 | - |
| Stage 2 | - | - | - | - | 373 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.1 | 168.3 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 100 | - | - | 448 | - |
| HCM Lane V/C Ratio | 1 | - | - | 0.029 | - |
| HCM Control Delay (s) | 168.3 | - | - | 13.3 | - |
| HCM Lane LOS | F | - | - | B | - |
| HCM 95th %tile Q(veh) | 6.1 | - | - | 0.1 | - |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 69 | 1262 | 109 | 36 | 1175 | 50 | 205 | 99 | 68 | 156 | 120 | 218 |
| Future Volume (veh/h) | 69 | 1262 | 109 | 36 | 1175 | 50 | 205 | 99 | 68 | 156 | 120 | 218 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.98 | 1.00 | | 1.00 | 1.00 | | 0.99 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 78 | 1418 | 116 | 40 | 1320 | 56 | 230 | 111 | -5 | 175 | 135 | 181 |
| Adj No. of Lanes | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 98 | 1241 | 101 | 235 | 1595 | 68 | 254 | 442 | 375 | 200 | 149 | 199 |
| Arrive On Green | 0.06 | 0.37 | 0.37 | 0.13 | 0.46 | 0.46 | 0.14 | 0.24 | 0.00 | 0.11 | 0.21 | 0.21 |
| Sat Flow, veh/h | 1774 | 3314 | 270 | 1774 | 3456 | 146 | 1774 | 1863 | 1583 | 1774 | 718 | 963 |
| Grp Volume(v), veh/h | 78 | 754 | 780 | 40 | 675 | 701 | 230 | 111 | -5 | 175 | 0 | 316 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1814 | 1774 | 1770 | 1833 | 1774 | 1863 | 1583 | 1774 | 0 | 1681 |
| Q Serve(g_s), s | 5.6 | 48.7 | 48.7 | 2.6 | 43.2 | 43.4 | 16.6 | 6.3 | 0.0 | 12.6 | 0.0 | 23.9 |
| Cycle Q Clear(g_c), s | 5.6 | 48.7 | 48.7 | 2.6 | 43.2 | 43.4 | 16.6 | 6.3 | 0.0 | 12.6 | 0.0 | 23.9 |
| Prop In Lane | 1.00 | | 0.15 | 1.00 | | 0.08 | 1.00 | | 1.00 | 1.00 | | 0.57 |
| Lane Grp Cap(c), veh/h | 98 | 663 | 680 | 235 | 816 | 846 | 254 | 442 | 375 | 200 | 0 | 348 |
| V/C Ratio(X) | 0.79 | 1.14 | 1.15 | 0.17 | 0.83 | 0.83 | 0.91 | 0.25 | -0.01 | 0.87 | 0.00 | 0.91 |
| Avail Cap(c_a), veh/h | 150 | 663 | 680 | 235 | 816 | 846 | 259 | 442 | 375 | 259 | 0 | 375 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.84 | 0.84 | 0.84 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 60.7 | 40.6 | 40.7 | 50.1 | 30.5 | 30.5 | 54.8 | 40.2 | 0.0 | 56.7 | 0.0 | 50.3 |
| Incr Delay (d2), s/veh | 7.5 | 79.4 | 82.9 | 0.1 | 8.0 | 7.9 | 31.1 | 0.4 | 0.0 | 18.7 | 0.0 | 25.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.0 | 38.4 | 40.0 | 1.3 | 22.8 | 23.7 | 10.3 | 3.3 | 0.0 | 7.2 | 0.0 | 13.5 |
| LnGrp Delay(d),s/veh | 68.2 | 120.1 | 123.5 | 50.2 | 38.5 | 38.4 | 86.0 | 40.7 | 0.0 | 75.4 | 0.0 | 75.3 |
| LnGrp LOS | E | F | F | D | D | D | F | D | | E | | E |
| Approach Vol, veh/h | | 1612 | | | 1416 | | | 336 | | | 491 | |
| Approach Delay, s/veh | | 119.2 | | | 38.8 | | | 72.3 | | | 75.3 | |
| Approach LOS | | F | | | D | | | E | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 22.5 | 54.0 | 22.6 | 30.9 | 11.2 | 65.3 | 18.7 | 34.8 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 4.0 | 4.0 | 4.0 | 5.3 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 16.0 | * 49 | 19.0 | 29.0 | 11.0 | 53.7 | 19.0 | 29.0 |
| Max Q Clear Time (g_c+I1), s | 4.6 | 50.7 | 18.6 | 25.9 | 7.6 | 45.4 | 14.6 | 8.3 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | 0.0 | 0.8 | 0.0 | 7.9 | 0.1 | 0.7 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 80.0 |
| HCM 2010 LOS | F |

Notes



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 38 | 1355 | 94 | 93 | 1189 | 46 | 51 | 10 | 57 | 12 | 7 | 20 |
| Future Volume (veh/h) | 38 | 1355 | 94 | 93 | 1189 | 46 | 51 | 10 | 57 | 12 | 7 | 20 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 42 | 1506 | 70 | 103 | 1321 | 37 | 57 | 11 | 24 | 13 | 8 | 5 |
| Adj No. of Lanes | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 655 | 2616 | 1170 | 153 | 1435 | 642 | 89 | 113 | 96 | 36 | 34 | 21 |
| Arrive On Green | 0.74 | 1.00 | 1.00 | 0.04 | 0.41 | 0.41 | 0.05 | 0.06 | 0.06 | 0.02 | 0.03 | 0.03 |
| Sat Flow, veh/h | 1774 | 3539 | 1583 | 3442 | 3539 | 1583 | 1774 | 1863 | 1583 | 1774 | 1073 | 671 |
| Grp Volume(v), veh/h | 42 | 1506 | 70 | 103 | 1321 | 37 | 57 | 11 | 24 | 13 | 0 | 13 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1583 | 1721 | 1770 | 1583 | 1774 | 1863 | 1583 | 1774 | 0 | 1744 |
| Q Serve(g_s), s | 0.8 | 0.0 | 0.0 | 3.8 | 46.0 | 1.6 | 4.1 | 0.7 | 1.9 | 0.9 | 0.0 | 0.9 |
| Cycle Q Clear(g_c), s | 0.8 | 0.0 | 0.0 | 3.8 | 46.0 | 1.6 | 4.1 | 0.7 | 1.9 | 0.9 | 0.0 | 0.9 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.38 |
| Lane Grp Cap(c), veh/h | 655 | 2616 | 1170 | 153 | 1435 | 642 | 89 | 113 | 96 | 36 | 0 | 55 |
| V/C Ratio(X) | 0.06 | 0.58 | 0.06 | 0.67 | 0.92 | 0.06 | 0.64 | 0.10 | 0.25 | 0.36 | 0.00 | 0.24 |
| Avail Cap(c_a), veh/h | 655 | 2616 | 1170 | 421 | 1435 | 642 | 176 | 587 | 499 | 108 | 0 | 483 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.12 | 0.12 | 0.12 | 0.76 | 0.76 | 0.76 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 10.8 | 0.0 | 0.0 | 61.2 | 36.7 | 16.8 | 60.6 | 57.7 | 58.2 | 62.9 | 0.0 | 61.4 |
| Incr Delay (d2), s/veh | 0.0 | 0.1 | 0.0 | 1.5 | 8.9 | 0.1 | 2.9 | 0.1 | 0.5 | 2.3 | 0.0 | 0.8 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.4 | 0.0 | 0.0 | 1.9 | 24.1 | 0.7 | 2.1 | 0.4 | 0.8 | 0.5 | 0.0 | 0.5 |
| LnGrp Delay(d),s/veh | 10.8 | 0.1 | 0.0 | 62.6 | 45.5 | 16.9 | 63.5 | 57.8 | 58.7 | 65.1 | 0.0 | 62.2 |
| LnGrp LOS | B | A | A | E | D | B | E | E | E | E | | E |
| Approach Vol, veh/h | | 1618 | | | 1461 | | | 92 | | | 26 | |
| Approach Delay, s/veh | | 0.4 | | | 46.0 | | | 61.6 | | | 63.7 | |
| Approach LOS | | A | | | D | | | E | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 9.9 | 101.4 | 10.6 | 8.1 | 53.3 | 58.0 | 6.7 | 12.0 |
| Change Period (Y+Rc), s | 4.1 | 5.3 | 4.1 | 4.0 | 5.3 | * 5.3 | 4.1 | * 4.1 |
| Max Green Setting (Gmax), s | 5.8 | 47.7 | 12.9 | 36.0 | 10.9 | * 53 | 7.9 | * 41 |
| Max Q Clear Time (g_c+I1), s | 5.8 | 2.0 | 6.1 | 2.9 | 2.8 | 48.0 | 2.9 | 3.9 |
| Green Ext Time (p_c), s | 0.1 | 41.4 | 0.0 | 0.0 | 0.0 | 4.5 | 0.0 | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 23.5 |
| HCM 2010 LOS | C |

Notes

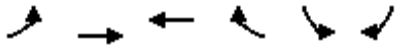


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 53 | 1337 | 34 | 341 | 1227 | 30 | 14 | 30 | 321 | 98 | 28 | 43 |
| Future Volume (veh/h) | 53 | 1337 | 34 | 341 | 1227 | 30 | 14 | 30 | 321 | 98 | 28 | 43 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 60 | 1502 | 29 | 383 | 1379 | 33 | 16 | 34 | 80 | 110 | 31 | 6 |
| Adj No. of Lanes | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 483 | 2052 | 918 | 424 | 1489 | 665 | 152 | 191 | 162 | 109 | 119 | 23 |
| Arrive On Green | 0.54 | 1.00 | 1.00 | 0.12 | 0.42 | 0.42 | 0.09 | 0.10 | 0.10 | 0.06 | 0.08 | 0.08 |
| Sat Flow, veh/h | 1774 | 3539 | 1583 | 3442 | 3539 | 1581 | 1774 | 1863 | 1579 | 1774 | 1516 | 293 |
| Grp Volume(v), veh/h | 60 | 1502 | 29 | 383 | 1379 | 33 | 16 | 34 | 80 | 110 | 0 | 37 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1583 | 1721 | 1770 | 1581 | 1774 | 1863 | 1579 | 1774 | 0 | 1810 |
| Q Serve(g_s), s | 2.1 | 0.0 | 0.0 | 14.3 | 48.1 | 1.2 | 1.1 | 2.2 | 6.2 | 8.0 | 0.0 | 2.5 |
| Cycle Q Clear(g_c), s | 2.1 | 0.0 | 0.0 | 14.3 | 48.1 | 1.2 | 1.1 | 2.2 | 6.2 | 8.0 | 0.0 | 2.5 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.16 |
| Lane Grp Cap(c), veh/h | 483 | 2052 | 918 | 424 | 1489 | 665 | 152 | 191 | 162 | 109 | 0 | 142 |
| V/C Ratio(X) | 0.12 | 0.73 | 0.03 | 0.90 | 0.93 | 0.05 | 0.11 | 0.18 | 0.49 | 1.01 | 0.00 | 0.26 |
| Avail Cap(c_a), veh/h | 483 | 2052 | 918 | 424 | 1489 | 665 | 152 | 602 | 510 | 109 | 0 | 585 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.78 | 0.78 | 0.78 | 0.84 | 0.84 | 0.84 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 22.0 | 0.0 | 0.0 | 56.2 | 35.7 | 13.2 | 54.8 | 53.3 | 55.2 | 61.0 | 0.0 | 56.4 |
| Incr Delay (d2), s/veh | 0.0 | 1.9 | 0.1 | 19.1 | 9.8 | 0.1 | 0.1 | 0.2 | 0.9 | 88.2 | 0.0 | 0.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.0 | 0.5 | 0.0 | 7.9 | 25.4 | 0.6 | 0.5 | 1.1 | 2.8 | 6.6 | 0.0 | 1.3 |
| LnGrp Delay(d),s/veh | 22.1 | 1.9 | 0.1 | 75.4 | 45.5 | 13.3 | 54.9 | 53.5 | 56.0 | 149.2 | 0.0 | 56.7 |
| LnGrp LOS | C | A | A | E | D | B | D | D | E | F | | E |
| Approach Vol, veh/h | | 1591 | | | 1795 | | | 130 | | | 147 | |
| Approach Delay, s/veh | | 2.6 | | | 51.3 | | | 55.2 | | | 125.9 | |
| Approach LOS | | A | | | D | | | E | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 20.0 | 80.7 | 15.1 | 14.2 | 40.7 | 60.0 | 12.0 | 17.3 |
| Change Period (Y+Rc), s | 4.0 | 5.3 | 4.0 | 4.0 | 5.3 | * 5.3 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 16.0 | 46.7 | 8.0 | 42.0 | 8.0 | * 55 | 8.0 | 42.0 |
| Max Q Clear Time (g_c+I1), s | 10.3 | 2.0 | 3.1 | 4.5 | 4.1 | 50.1 | 10.0 | 8.2 |
| Green Ext Time (p_c), s | 0.0 | 8.9 | 0.0 | 0.1 | 0.0 | 2.7 | 0.0 | 0.2 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 33.3 |
| HCM 2010 LOS | C |

Notes



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 240 | 1516 | 789 | 75 | 342 | 809 |
| Future Volume (veh/h) | 240 | 1516 | 789 | 75 | 342 | 809 |
| Number | 7 | 4 | 8 | 18 | 1 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 270 | 1703 | 887 | 0 | 384 | 611 |
| Adj No. of Lanes | 2 | 2 | 3 | 1 | 1 | 2 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 287 | 1607 | 1695 | 528 | 835 | 1544 |
| Arrive On Green | 0.08 | 0.45 | 0.33 | 0.00 | 0.47 | 0.47 |
| Sat Flow, veh/h | 3442 | 3632 | 5253 | 1583 | 1774 | 2787 |
| Grp Volume(v), veh/h | 270 | 1703 | 887 | 0 | 384 | 611 |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1770 | 1695 | 1583 | 1774 | 1393 |
| Q Serve(g_s), s | 9.4 | 54.5 | 16.9 | 0.0 | 17.5 | 15.0 |
| Cycle Q Clear(g_c), s | 9.4 | 54.5 | 16.9 | 0.0 | 17.5 | 15.0 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 287 | 1607 | 1695 | 528 | 835 | 1544 |
| V/C Ratio(X) | 0.94 | 1.06 | 0.52 | 0.00 | 0.46 | 0.40 |
| Avail Cap(c_a), veh/h | 287 | 1607 | 1695 | 528 | 835 | 1544 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.47 | 0.47 | 1.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 54.7 | 32.8 | 32.3 | 0.0 | 21.4 | 15.3 |
| Incr Delay (d2), s/veh | 22.8 | 34.1 | 0.3 | 0.0 | 0.4 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 5.4 | 34.2 | 7.9 | 0.0 | 8.6 | 14.7 |
| LnGrp Delay(d),s/veh | 77.5 | 66.8 | 32.6 | 0.0 | 21.8 | 15.4 |
| LnGrp LOS | E | F | C | | C | B |
| Approach Vol, veh/h | | 1973 | 887 | | 995 | |
| Approach Delay, s/veh | | 68.3 | 32.6 | | 17.9 | |
| Approach LOS | | E | C | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | | | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | | | 59.0 | | 61.0 | 14.5 | 44.5 |
| Change Period (Y+Rc), s | | | | 4.5 | | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | | | | 54.5 | | 56.5 | 10.0 | 40.0 |
| Max Q Clear Time (g_c+I1), s | | | | 56.5 | | 19.5 | 11.4 | 18.9 |
| Green Ext Time (p_c), s | | | | 0.0 | | 3.8 | 0.0 | 5.7 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 47.1 |
| HCM 2010 LOS | D |



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 1085 | 773 | 0 | 1360 | 119 | 21 |
| Future Volume (veh/h) | 1085 | 773 | 0 | 1360 | 119 | 21 |
| Number | 4 | 14 | 3 | 8 | 5 | 12 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 0 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 1119 | 797 | 0 | 1402 | 123 | 22 |
| Adj No. of Lanes | 2 | 1 | 0 | 2 | 2 | 1 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 2 | 2 | 0 | 2 | 2 | 2 |
| Cap, veh/h | 2027 | 905 | 0 | 2027 | 1212 | 558 |
| Arrive On Green | 0.57 | 0.57 | 0.00 | 0.57 | 0.35 | 0.35 |
| Sat Flow, veh/h | 3632 | 1581 | 0 | 3725 | 3442 | 1583 |
| Grp Volume(v), veh/h | 1119 | 797 | 0 | 1402 | 123 | 22 |
| Grp Sat Flow(s),veh/h/ln | 1770 | 1581 | 0 | 1770 | 1721 | 1583 |
| Q Serve(g_s), s | 23.7 | 52.2 | 0.0 | 33.6 | 2.9 | 1.1 |
| Cycle Q Clear(g_c), s | 23.7 | 52.2 | 0.0 | 33.6 | 2.9 | 1.1 |
| Prop In Lane | | 1.00 | 0.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 2027 | 905 | 0 | 2027 | 1212 | 558 |
| V/C Ratio(X) | 0.55 | 0.88 | 0.00 | 0.69 | 0.10 | 0.04 |
| Avail Cap(c_a), veh/h | 2610 | 1166 | 0 | 2610 | 1212 | 558 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.89 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 16.0 | 22.1 | 0.0 | 18.1 | 26.1 | 25.5 |
| Incr Delay (d2), s/veh | 0.2 | 6.6 | 0.0 | 0.5 | 0.2 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 11.6 | 24.2 | 0.0 | 16.5 | 1.4 | 0.5 |
| LnGrp Delay(d),s/veh | 16.3 | 28.7 | 0.0 | 18.6 | 26.3 | 25.7 |
| LnGrp LOS | B | C | | B | C | C |
| Approach Vol, veh/h | 1916 | | | 1402 | 145 | |
| Approach Delay, s/veh | 21.4 | | | 18.6 | 26.2 | |
| Approach LOS | C | | | B | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | | | 8 |
| Phs Duration (G+Y+Rc), s | | 46.8 | | 73.2 | | | | 73.2 |
| Change Period (Y+Rc), s | | 4.5 | | 4.5 | | | | 4.5 |
| Max Green Setting (Gmax), s | | 22.5 | | 88.5 | | | | 88.5 |
| Max Q Clear Time (g_c+I1), s | | 4.9 | | 54.2 | | | | 35.6 |
| Green Ext Time (p_c), s | | 0.4 | | 14.6 | | | | 13.9 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 20.5 |
| HCM 2010 LOS | C |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 1086 | 20 | 11 | 1330 | 30 | 7 |
| Future Volume (veh/h) | 1086 | 20 | 11 | 1330 | 30 | 7 |
| Number | 2 | 12 | 1 | 6 | 7 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 1207 | 15 | 12 | 1478 | 33 | -2 |
| Adj No. of Lanes | 2 | 1 | 1 | 2 | 1 | 1 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 2946 | 1317 | 24 | 3103 | 92 | 82 |
| Arrive On Green | 0.83 | 0.83 | 0.01 | 0.88 | 0.05 | 0.00 |
| Sat Flow, veh/h | 3632 | 1582 | 1774 | 3632 | 1774 | 1583 |
| Grp Volume(v), veh/h | 1207 | 15 | 12 | 1478 | 33 | -2 |
| Grp Sat Flow(s),veh/h/ln | 1770 | 1582 | 1774 | 1770 | 1774 | 1583 |
| Q Serve(g_s), s | 11.3 | 0.2 | 0.9 | 11.5 | 2.3 | 0.0 |
| Cycle Q Clear(g_c), s | 11.3 | 0.2 | 0.9 | 11.5 | 2.3 | 0.0 |
| Prop In Lane | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 2946 | 1317 | 24 | 3103 | 92 | 82 |
| V/C Ratio(X) | 0.41 | 0.01 | 0.50 | 0.48 | 0.36 | -0.02 |
| Avail Cap(c_a), veh/h | 2946 | 1317 | 150 | 3103 | 368 | 329 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.82 | 0.82 | 0.72 | 0.72 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 2.8 | 1.8 | 63.7 | 1.7 | 59.5 | 0.0 |
| Incr Delay (d2), s/veh | 0.3 | 0.0 | 4.3 | 0.4 | 0.9 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 5.5 | 0.1 | 0.5 | 5.5 | 1.2 | 0.0 |
| LnGrp Delay(d),s/veh | 3.1 | 1.9 | 68.0 | 2.1 | 60.4 | 0.0 |
| LnGrp LOS | A | A | E | A | E | |
| Approach Vol, veh/h | 1222 | | | 1490 | 31 | |
| Approach Delay, s/veh | 3.1 | | | 2.6 | 64.3 | |
| Approach LOS | A | | | A | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | | 6 | | |
| Phs Duration (G+Y+Rc), s | 5.8 | 113.5 | | 10.7 | | 119.3 | | |
| Change Period (Y+Rc), s | 4.0 | 5.3 | | 4.0 | | 5.3 | | |
| Max Green Setting (Gmax), s | 1.8 | 78.7 | | 27.0 | | 93.7 | | |
| Max Q Clear Time (g_c+I1), s | 2.9 | 13.3 | | 4.3 | | 13.5 | | |
| Green Ext Time (p_c), s | 0.0 | 6.3 | | 0.0 | | 8.8 | | |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 3.5 |
| HCM 2010 LOS | A |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 277 | 702 | 114 | 45 | 835 | 122 | 126 | 88 | 36 | 115 | 110 | 380 |
| Future Volume (veh/h) | 277 | 702 | 114 | 45 | 835 | 122 | 126 | 88 | 36 | 115 | 110 | 380 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 7 | 4 | 14 | 3 | 8 | 18 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 0.99 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 304 | 771 | 116 | 49 | 918 | 41 | 138 | 97 | 3 | 126 | 121 | 0 |
| Adj No. of Lanes | 2 | 2 | 0 | 1 | 2 | 1 | 1 | 2 | 1 | 2 | 2 | 1 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 354 | 1275 | 192 | 456 | 2043 | 902 | 164 | 289 | 128 | 330 | 318 | 142 |
| Arrive On Green | 0.21 | 0.83 | 0.83 | 0.26 | 0.58 | 0.58 | 0.09 | 0.08 | 0.08 | 0.10 | 0.09 | 0.00 |
| Sat Flow, veh/h | 3442 | 3086 | 464 | 1774 | 3539 | 1562 | 1774 | 3539 | 1572 | 3442 | 3539 | 1583 |
| Grp Volume(v), veh/h | 304 | 442 | 445 | 49 | 918 | 41 | 138 | 97 | 3 | 126 | 121 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1770 | 1780 | 1774 | 1770 | 1562 | 1774 | 1770 | 1572 | 1721 | 1770 | 1583 |
| Q Serve(g_s), s | 11.1 | 11.3 | 11.3 | 2.7 | 19.2 | 1.5 | 10.0 | 3.4 | 0.2 | 4.5 | 4.2 | 0.0 |
| Cycle Q Clear(g_c), s | 11.1 | 11.3 | 11.3 | 2.7 | 19.2 | 1.5 | 10.0 | 3.4 | 0.2 | 4.5 | 4.2 | 0.0 |
| Prop In Lane | 1.00 | | 0.26 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 354 | 731 | 735 | 456 | 2043 | 902 | 164 | 289 | 128 | 330 | 318 | 142 |
| V/C Ratio(X) | 0.86 | 0.60 | 0.60 | 0.11 | 0.45 | 0.05 | 0.84 | 0.34 | 0.02 | 0.38 | 0.38 | 0.00 |
| Avail Cap(c_a), veh/h | 424 | 731 | 735 | 456 | 2043 | 902 | 218 | 937 | 416 | 424 | 937 | 419 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.93 | 0.93 | 0.93 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 50.7 | 7.6 | 7.6 | 36.9 | 15.7 | 11.9 | 58.1 | 56.4 | 36.6 | 55.1 | 55.7 | 0.0 |
| Incr Delay (d2), s/veh | 13.2 | 3.4 | 3.4 | 0.1 | 0.7 | 0.1 | 19.7 | 0.7 | 0.1 | 0.7 | 0.7 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 5.9 | 5.9 | 5.9 | 1.4 | 9.5 | 0.7 | 5.8 | 1.7 | 0.1 | 2.2 | 2.1 | 0.0 |
| LnGrp Delay(d),s/veh | 63.9 | 11.0 | 11.0 | 37.0 | 16.4 | 12.0 | 77.7 | 57.0 | 36.6 | 55.9 | 56.5 | 0.0 |
| LnGrp LOS | E | B | B | D | B | B | E | E | D | E | E | |
| Approach Vol, veh/h | | 1191 | | | 1008 | | | 238 | | | 247 | |
| Approach Delay, s/veh | | 24.5 | | | 17.2 | | | 68.8 | | | 56.2 | |
| Approach LOS | | C | | | B | | | E | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 18.7 | 59.0 | 17.1 | 15.2 | 17.4 | 80.3 | 16.0 | 16.3 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 4.6 | * 4.6 | 4.0 | 5.3 | 4.0 | 4.6 |
| Max Green Setting (Gmax), s | 8.0 | * 54 | 16.0 | * 34 | 16.0 | 45.7 | 16.0 | 34.4 |
| Max Q Clear Time (g_c+I1), s | 13.1 | 13.3 | 6.5 | 5.4 | 13.1 | 21.2 | 12.0 | 6.2 |
| Green Ext Time (p_c), s | 0.0 | 7.4 | 0.2 | 0.5 | 0.3 | 7.8 | 0.1 | 0.7 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 28.6 |
| HCM 2010 LOS | C |

Notes



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 26 | 42 | 33 | 0 | 145 | 501 | 17 | 439 | 0 | 342 | 861 | 48 |
| Future Volume (veh/h) | 26 | 42 | 33 | 0 | 145 | 501 | 17 | 439 | 0 | 342 | 861 | 48 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1759 | 1759 | 1900 | 1759 | 1759 | 1759 | 1759 | 1759 | 1900 | 1759 | 1759 | 1900 |
| Adj Flow Rate, veh/h | 27 | 43 | 18 | 0 | 149 | 0 | 18 | 453 | 0 | 353 | 888 | 0 |
| Adj No. of Lanes | 1 | 2 | 0 | 1 | 1 | 1 | 1 | 2 | 0 | 2 | 2 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Cap, veh/h | 51 | 631 | 249 | 3 | 207 | 176 | 36 | 697 | 0 | 512 | 1266 | 0 |
| Arrive On Green | 0.03 | 0.27 | 0.27 | 0.00 | 0.12 | 0.00 | 0.02 | 0.21 | 0.00 | 0.16 | 0.38 | 0.00 |
| Sat Flow, veh/h | 1675 | 2343 | 924 | 1675 | 1759 | 1495 | 1675 | 3431 | 0 | 3250 | 3431 | 0 |
| Grp Volume(v), veh/h | 27 | 30 | 31 | 0 | 149 | 0 | 18 | 453 | 0 | 353 | 888 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1675 | 1671 | 1596 | 1675 | 1759 | 1495 | 1675 | 1671 | 0 | 1625 | 1671 | 0 |
| Q Serve(g_s), s | 0.9 | 0.8 | 0.8 | 0.0 | 4.7 | 0.0 | 0.6 | 7.1 | 0.0 | 5.9 | 12.9 | 0.0 |
| Cycle Q Clear(g_c), s | 0.9 | 0.8 | 0.8 | 0.0 | 4.7 | 0.0 | 0.6 | 7.1 | 0.0 | 5.9 | 12.9 | 0.0 |
| Prop In Lane | 1.00 | | 0.58 | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 51 | 450 | 430 | 3 | 207 | 176 | 36 | 697 | 0 | 512 | 1266 | 0 |
| V/C Ratio(X) | 0.53 | 0.07 | 0.07 | 0.00 | 0.72 | 0.00 | 0.49 | 0.65 | 0.00 | 0.69 | 0.70 | 0.00 |
| Avail Cap(c_a), veh/h | 349 | 1596 | 1525 | 262 | 1589 | 1350 | 291 | 3309 | 0 | 2314 | 5224 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 27.5 | 15.6 | 15.7 | 0.0 | 24.5 | 0.0 | 27.9 | 20.9 | 0.0 | 22.9 | 15.1 | 0.0 |
| Incr Delay (d2), s/veh | 8.2 | 0.1 | 0.1 | 0.0 | 4.7 | 0.0 | 10.0 | 1.0 | 0.0 | 1.7 | 0.7 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.5 | 0.4 | 0.4 | 0.0 | 2.5 | 0.0 | 0.4 | 3.4 | 0.0 | 2.8 | 6.0 | 0.0 |
| LnGrp Delay(d),s/veh | 35.8 | 15.7 | 15.7 | 0.0 | 29.2 | 0.0 | 37.9 | 21.9 | 0.0 | 24.6 | 15.8 | 0.0 |
| LnGrp LOS | D | B | B | | C | | D | C | | C | B | |
| Approach Vol, veh/h | | 88 | | | 149 | | | 471 | | | 1241 | |
| Approach Delay, s/veh | | 21.9 | | | 29.2 | | | 22.5 | | | 18.3 | |
| Approach LOS | | C | | | C | | | C | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 16.1 | 19.0 | 0.0 | 22.5 | 6.3 | 28.8 | 8.8 | 13.8 |
| Change Period (Y+Rc), s | 7.0 | 7.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 | 7.0 |
| Max Green Setting (Gmax), s | 11.0 | 57.0 | 9.0 | 55.0 | 10.0 | 90.0 | 12.0 | 52.0 |
| Max Q Clear Time (g_c+I1), s | 11.9 | 9.1 | 0.0 | 2.8 | 2.6 | 14.9 | 2.9 | 6.7 |
| Green Ext Time (p_c), s | 1.2 | 2.8 | 0.0 | 0.3 | 0.0 | 6.4 | 0.0 | 0.7 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 20.3 |
| HCM 2010 LOS | C |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 3 | 4 | 0 | 3 | 16 | 1 | 4 | 409 | 132 | 2 | 875 | 4 |
| Future Volume (veh/h) | 3 | 4 | 0 | 3 | 16 | 1 | 4 | 409 | 132 | 2 | 875 | 4 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 1 | 6 | 16 | 5 | 2 | 12 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1845 | 1845 | 1900 | 1845 | 1845 | 1900 | 1845 | 1845 | 1845 | 1845 | 1845 | 1900 |
| Adj Flow Rate, veh/h | 3 | 4 | 0 | 3 | 16 | 0 | 4 | 417 | 102 | 2 | 893 | 3 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Cap, veh/h | 9 | 61 | 0 | 9 | 61 | 0 | 11 | 751 | 646 | 6 | 1447 | 5 |
| Arrive On Green | 0.00 | 0.03 | 0.00 | 0.00 | 0.03 | 0.00 | 0.01 | 0.41 | 0.41 | 0.00 | 0.40 | 0.40 |
| Sat Flow, veh/h | 1757 | 1845 | 0 | 1757 | 1845 | 0 | 1757 | 1845 | 1568 | 1757 | 3583 | 12 |
| Grp Volume(v), veh/h | 3 | 4 | 0 | 3 | 16 | 0 | 4 | 417 | 102 | 2 | 437 | 459 |
| Grp Sat Flow(s),veh/h/ln | 1757 | 1845 | 0 | 1757 | 1845 | 0 | 1757 | 1845 | 1568 | 1757 | 1752 | 1843 |
| Q Serve(g_s), s | 0.1 | 0.1 | 0.0 | 0.1 | 0.3 | 0.0 | 0.1 | 6.3 | 1.5 | 0.0 | 7.2 | 7.2 |
| Cycle Q Clear(g_c), s | 0.1 | 0.1 | 0.0 | 0.1 | 0.3 | 0.0 | 0.1 | 6.3 | 1.5 | 0.0 | 7.2 | 7.2 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 0.00 | 1.00 | | 1.00 | 1.00 | | 0.01 |
| Lane Grp Cap(c), veh/h | 9 | 61 | 0 | 9 | 61 | 0 | 11 | 751 | 646 | 6 | 708 | 744 |
| V/C Ratio(X) | 0.35 | 0.07 | 0.00 | 0.35 | 0.26 | 0.00 | 0.35 | 0.56 | 0.16 | 0.34 | 0.62 | 0.62 |
| Avail Cap(c_a), veh/h | 388 | 509 | 0 | 4460 | 4785 | 0 | 388 | 4937 | 4204 | 291 | 4594 | 4830 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 18.0 | 17.0 | 0.0 | 18.0 | 17.1 | 0.0 | 17.9 | 8.2 | 6.7 | 18.0 | 8.6 | 8.6 |
| Incr Delay (d2), s/veh | 22.2 | 0.5 | 0.0 | 22.2 | 2.3 | 0.0 | 17.1 | 0.6 | 0.1 | 31.9 | 0.9 | 0.8 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.1 | 0.0 | 0.0 | 0.1 | 0.2 | 0.0 | 0.1 | 3.3 | 0.7 | 0.1 | 3.6 | 3.7 |
| LnGrp Delay(d),s/veh | 40.2 | 17.4 | 0.0 | 40.2 | 19.4 | 0.0 | 35.0 | 8.9 | 6.8 | 49.9 | 9.5 | 9.4 |
| LnGrp LOS | D | B | | D | B | | D | A | A | D | A | A |
| Approach Vol, veh/h | | 7 | | | 19 | | | 523 | | | 898 | |
| Approach Delay, s/veh | | 27.2 | | | 22.7 | | | 8.7 | | | 9.5 | |
| Approach LOS | | C | | | C | | | A | | | A | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 5.2 | 19.6 | 5.2 | 6.2 | 5.1 | 19.8 | 5.2 | 6.2 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 8.0 | 95.0 | 92.0 | 10.0 | 6.0 | 97.0 | 8.0 | 94.0 |
| Max Q Clear Time (g_c+I1), s | 2.1 | 9.2 | 2.1 | 2.1 | 2.0 | 8.3 | 2.1 | 2.3 |
| Green Ext Time (p_c), s | 0.0 | 5.5 | 0.0 | 0.0 | 0.0 | 2.6 | 0.0 | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 9.5 |
| HCM 2010 LOS | A |

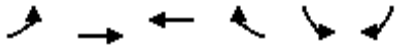


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 2 | 19 | 21 | 192 | 84 | 267 | 15 | 283 | 176 | 229 | 1046 | 5 |
| Future Volume (veh/h) | 2 | 19 | 21 | 192 | 84 | 267 | 15 | 283 | 176 | 229 | 1046 | 5 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1827 | 1827 | 1900 | 1827 | 1827 | 1827 | 1827 | 1827 | 1827 | 1827 | 1827 | 1900 |
| Adj Flow Rate, veh/h | 2 | 20 | 22 | 142 | 165 | 275 | 15 | 292 | 0 | 236 | 1078 | 0 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Cap, veh/h | 4 | 93 | 102 | 184 | 403 | 343 | 25 | 901 | 568 | 290 | 1429 | 0 |
| Arrive On Green | 0.00 | 0.12 | 0.12 | 0.11 | 0.22 | 0.22 | 0.01 | 0.26 | 0.00 | 0.17 | 0.41 | 0.00 |
| Sat Flow, veh/h | 1740 | 796 | 876 | 1740 | 1827 | 1553 | 1740 | 3471 | 1553 | 1740 | 3563 | 0 |
| Grp Volume(v), veh/h | 2 | 0 | 42 | 142 | 165 | 275 | 15 | 292 | 0 | 236 | 1078 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1740 | 0 | 1672 | 1740 | 1827 | 1553 | 1740 | 1736 | 1553 | 1740 | 1736 | 0 |
| Q Serve(g_s), s | 0.1 | 0.0 | 1.6 | 5.7 | 5.5 | 11.9 | 0.6 | 4.8 | 0.0 | 9.3 | 18.9 | 0.0 |
| Cycle Q Clear(g_c), s | 0.1 | 0.0 | 1.6 | 5.7 | 5.5 | 11.9 | 0.6 | 4.8 | 0.0 | 9.3 | 18.9 | 0.0 |
| Prop In Lane | 1.00 | | 0.52 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 4 | 0 | 196 | 184 | 403 | 343 | 25 | 901 | 568 | 290 | 1429 | 0 |
| V/C Ratio(X) | 0.53 | 0.00 | 0.21 | 0.77 | 0.41 | 0.80 | 0.60 | 0.32 | 0.00 | 0.81 | 0.75 | 0.00 |
| Avail Cap(c_a), veh/h | 220 | 0 | 1080 | 1026 | 2027 | 1723 | 195 | 2242 | 1168 | 1613 | 5069 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 35.5 | 0.0 | 28.5 | 31.0 | 23.8 | 26.3 | 34.9 | 21.3 | 0.0 | 28.6 | 17.9 | 0.0 |
| Incr Delay (d2), s/veh | 82.5 | 0.0 | 0.5 | 6.7 | 0.7 | 4.4 | 20.7 | 0.2 | 0.0 | 5.5 | 0.8 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.1 | 0.0 | 0.8 | 3.1 | 2.8 | 5.5 | 0.4 | 2.3 | 0.0 | 4.9 | 9.1 | 0.0 |
| LnGrp Delay(d),s/veh | 118.0 | 0.0 | 29.0 | 37.7 | 24.4 | 30.7 | 55.6 | 21.5 | 0.0 | 34.2 | 18.7 | 0.0 |
| LnGrp LOS | F | | C | D | C | C | E | C | | C | B | |
| Approach Vol, veh/h | | 44 | | | 582 | | | 307 | | | 1314 | |
| Approach Delay, s/veh | | 33.1 | | | 30.6 | | | 23.2 | | | 21.5 | |
| Approach LOS | | C | | | C | | | C | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 17.9 | 25.5 | 13.5 | 14.3 | 7.0 | 36.3 | 6.2 | 21.7 |
| Change Period (Y+Rc), s | 6.0 | 7.0 | 6.0 | 6.0 | 6.0 | 7.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 66.0 | 46.0 | 42.0 | 46.0 | 8.0 | 104.0 | 9.0 | 79.0 |
| Max Q Clear Time (g_c+I1), s | 11.3 | 6.8 | 7.7 | 3.6 | 2.6 | 20.9 | 2.1 | 13.9 |
| Green Ext Time (p_c), s | 0.7 | 1.7 | 0.4 | 0.2 | 0.0 | 8.4 | 0.0 | 1.8 |

| Intersection Summary | | |
|---|---|---|
| HCM 2010 Ctrl Delay | | 24.3 |
| HCM 2010 LOS | | C |

Notes



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 171 | 1294 | 0 |
| Future Volume (veh/h) | 0 | 0 | 0 | 171 | 1294 | 0 |
| Number | 5 | 2 | 6 | 16 | 3 | 18 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 0 | 0 | 0 | 174 | 1320 | 0 |
| Adj No. of Lanes | 1 | 1 | 1 | 1 | 2 | 1 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 215 | 259 | 259 | 220 | 1875 | 863 |
| Arrive On Green | 0.00 | 0.00 | 0.00 | 0.14 | 0.54 | 0.00 |
| Sat Flow, veh/h | 1206 | 1863 | 1863 | 1583 | 3442 | 1583 |
| Grp Volume(v), veh/h | 0 | 0 | 0 | 174 | 1320 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1206 | 1863 | 1863 | 1583 | 1721 | 1583 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 3.6 | 9.5 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 0.0 | 0.0 | 3.6 | 9.5 | 0.0 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 215 | 259 | 259 | 220 | 1875 | 863 |
| V/C Ratio(X) | 0.00 | 0.00 | 0.00 | 0.79 | 0.70 | 0.00 |
| Avail Cap(c_a), veh/h | 468 | 650 | 650 | 553 | 7978 | 3671 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 0.0 | 0.0 | 0.0 | 14.0 | 5.6 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 0.0 | 0.0 | 6.3 | 0.5 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 0.0 | 0.0 | 1.9 | 4.5 | 0.0 |
| LnGrp Delay(d),s/veh | 0.0 | 0.0 | 0.0 | 20.2 | 6.1 | 0.0 |
| LnGrp LOS | | | | C | A | |
| Approach Vol, veh/h | | 0 | 174 | | 1320 | |
| Approach Delay, s/veh | | 0.0 | 20.2 | | 6.1 | |
| Approach LOS | | | C | | A | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 10.0 | | | | 10.0 | | 23.6 |
| Change Period (Y+Rc), s | | 5.3 | | | | 5.3 | | 5.3 |
| Max Green Setting (Gmax), s | | 11.7 | | | | 11.7 | | 77.7 |
| Max Q Clear Time (g_c+I1), s | | 0.0 | | | | 5.6 | | 11.5 |
| Green Ext Time (p_c), s | | 0.0 | | | | 0.2 | | 6.8 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 7.8 |
| HCM 2010 LOS | A |

Notes



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 10 | 1284 | 0 | 0 | 167 | 902 | 4 | 5 | 219 | 0 | 0 | 0 |
| Future Volume (veh/h) | 10 | 1284 | 0 | 0 | 167 | 902 | 4 | 5 | 219 | 0 | 0 | 0 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 7 | 4 | 14 | | | |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | | | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 0 | 0 | 1863 | 1863 | 1863 | 1863 | 1863 | | | |
| Adj Flow Rate, veh/h | 11 | 1352 | 0 | 0 | 176 | 949 | 4 | 5 | 231 | | | |
| Adj No. of Lanes | 2 | 3 | 0 | 0 | 1 | 2 | 1 | 1 | 1 | | | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | | | |
| Percent Heavy Veh, % | 2 | 2 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | | | |
| Cap, veh/h | 40 | 2765 | 0 | 0 | 807 | 1372 | 344 | 361 | 307 | | | |
| Arrive On Green | 0.01 | 0.54 | 0.00 | 0.00 | 0.43 | 0.43 | 0.19 | 0.19 | 0.19 | | | |
| Sat Flow, veh/h | 3442 | 5253 | 0 | 0 | 1863 | 3167 | 1774 | 1863 | 1583 | | | |
| Grp Volume(v), veh/h | 11 | 1352 | 0 | 0 | 176 | 949 | 4 | 5 | 231 | | | |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1695 | 0 | 0 | 1863 | 1583 | 1774 | 1863 | 1583 | | | |
| Q Serve(g_s), s | 0.1 | 6.7 | 0.0 | 0.0 | 2.4 | 9.8 | 0.1 | 0.1 | 5.6 | | | |
| Cycle Q Clear(g_c), s | 0.1 | 6.7 | 0.0 | 0.0 | 2.4 | 9.8 | 0.1 | 0.1 | 5.6 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 1.00 | 1.00 | | 1.00 | | | |
| Lane Grp Cap(c), veh/h | 40 | 2765 | 0 | 0 | 807 | 1372 | 344 | 361 | 307 | | | |
| V/C Ratio(X) | 0.28 | 0.49 | 0.00 | 0.00 | 0.22 | 0.69 | 0.01 | 0.01 | 0.75 | | | |
| Avail Cap(c_a), veh/h | 1363 | 9273 | 0 | 0 | 2475 | 4208 | 2006 | 2106 | 1790 | | | |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Uniform Delay (d), s/veh | 19.8 | 5.7 | 0.0 | 0.0 | 7.2 | 9.3 | 13.2 | 13.2 | 15.4 | | | |
| Incr Delay (d2), s/veh | 3.7 | 0.1 | 0.0 | 0.0 | 0.1 | 0.6 | 0.0 | 0.0 | 3.7 | | | |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| %ile BackOfQ(50%),veh/ln | 0.1 | 3.0 | 0.0 | 0.0 | 1.3 | 4.3 | 0.0 | 0.0 | 2.7 | | | |
| LnGrp Delay(d),s/veh | 23.5 | 5.9 | 0.0 | 0.0 | 7.3 | 9.9 | 13.2 | 13.2 | 19.1 | | | |
| LnGrp LOS | C | A | | | A | A | B | B | B | | | |
| Approach Vol, veh/h | | 1363 | | | 1125 | | | 240 | | | | |
| Approach Delay, s/veh | | 6.0 | | | 9.5 | | | 18.9 | | | | |
| Approach LOS | | A | | | A | | | B | | | | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | |
| Phs Duration (G+Y+Rc), s | | 27.3 | | 13.1 | 4.5 | 22.8 | | |
| Change Period (Y+Rc), s | | 5.3 | | 5.3 | 4.0 | 5.3 | | |
| Max Green Setting (Gmax), s | | 73.7 | | 45.7 | 16.0 | 53.7 | | |
| Max Q Clear Time (g_c+I1), s | | 8.7 | | 7.6 | 2.1 | 11.8 | | |
| Green Ext Time (p_c), s | | 12.7 | | 0.8 | 0.0 | 5.7 | | |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 8.6 |
| HCM 2010 LOS | A |

Notes

| Intersection | |
|---|---|
| Int Delay, s/veh | 14.4 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 39 | 415 | 37 | 42 | 486 | 29 |
| Future Vol, veh/h | 39 | 415 | 37 | 42 | 486 | 29 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 93 | 93 | 93 | 93 | 93 | 93 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 42 | 446 | 40 | 45 | 523 | 31 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1140 | 63 | 0 | 0 | 85 | 0 |
| Stage 1 | 63 | - | - | - | - | - |
| Stage 2 | 1077 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 222 | 1002 | - | - | 1512 | - |
| Stage 1 | 960 | - | - | - | - | - |
| Stage 2 | 327 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 144 | 1002 | - | - | 1512 | - |
| Mov Cap-2 Maneuver | 144 | - | - | - | - | - |
| Stage 1 | 622 | - | - | - | - | - |
| Stage 2 | 327 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 24 | 0 | 8.1 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 663 | 1512 | - |
| HCM Lane V/C Ratio | - | - | 0.736 | 0.346 | - |
| HCM Control Delay (s) | - | - | 24 | 8.6 | 0 |
| HCM Lane LOS | - | - | C | A | A |
| HCM 95th %tile Q(veh) | - | - | 6.5 | 1.6 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 13.4 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 56 | 472 | 436 | 110 | 163 | 18 |
| Future Vol, veh/h | 56 | 472 | 436 | 110 | 163 | 18 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 61 | 513 | 474 | 120 | 177 | 20 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 594 | 0 | - | 0 | 1169 | 534 |
| Stage 1 | - | - | - | - | 534 | - |
| Stage 2 | - | - | - | - | 635 | - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | 982 | - | - | - | 213 | 546 |
| Stage 1 | - | - | - | - | 588 | - |
| Stage 2 | - | - | - | - | 528 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 982 | - | - | - | 200 | 546 |
| Mov Cap-2 Maneuver | - | - | - | - | 200 | - |
| Stage 1 | - | - | - | - | 552 | - |
| Stage 2 | - | - | - | - | 528 | - |

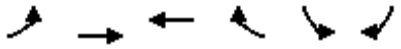
| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.9 | 0 | 90.3 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 982 | - | - | - | 213 |
| HCM Lane V/C Ratio | 0.062 | - | - | - | 0.924 |
| HCM Control Delay (s) | 8.9 | - | - | - | 90.3 |
| HCM Lane LOS | A | - | - | - | F |
| HCM 95th %tile Q(veh) | 0.2 | - | - | - | 7.6 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 625 | 20 | 0 | 511 | 50 | 100 |
| Future Volume (veh/h) | 625 | 20 | 0 | 511 | 50 | 100 |
| Number | 4 | 14 | 3 | 8 | 5 | 12 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 679 | 22 | 0 | 555 | 54 | 109 |
| Adj No. of Lanes | 2 | 0 | 1 | 1 | 1 | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 1570 | 51 | 7 | 836 | 349 | 312 |
| Arrive On Green | 0.45 | 0.45 | 0.00 | 0.45 | 0.20 | 0.20 |
| Sat Flow, veh/h | 3592 | 113 | 1774 | 1863 | 1774 | 1583 |
| Grp Volume(v), veh/h | 343 | 358 | 0 | 555 | 54 | 109 |
| Grp Sat Flow(s),veh/h/ln | 1770 | 1843 | 1774 | 1863 | 1774 | 1583 |
| Q Serve(g_s), s | 3.4 | 3.4 | 0.0 | 5.9 | 0.6 | 1.5 |
| Cycle Q Clear(g_c), s | 3.4 | 3.4 | 0.0 | 5.9 | 0.6 | 1.5 |
| Prop In Lane | | 0.06 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 794 | 827 | 7 | 836 | 349 | 312 |
| V/C Ratio(X) | 0.43 | 0.43 | 0.00 | 0.66 | 0.15 | 0.35 |
| Avail Cap(c_a), veh/h | 3275 | 3411 | 349 | 4144 | 1712 | 1528 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 4.8 | 4.8 | 0.0 | 5.5 | 8.4 | 8.8 |
| Incr Delay (d2), s/veh | 0.4 | 0.4 | 0.0 | 0.9 | 0.2 | 0.7 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.7 | 1.8 | 0.0 | 3.1 | 0.3 | 0.7 |
| LnGrp Delay(d),s/veh | 5.2 | 5.1 | 0.0 | 6.4 | 8.7 | 9.5 |
| LnGrp LOS | A | A | | A | A | A |
| Approach Vol, veh/h | 701 | | | 555 | 163 | |
| Approach Delay, s/veh | 5.2 | | | 6.4 | 9.2 | |
| Approach LOS | A | | | A | A | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | 3 | 4 | | | | 8 |
| Phs Duration (G+Y+Rc), s | | 9.5 | 0.0 | 15.9 | | | | 15.9 |
| Change Period (Y+Rc), s | | 4.5 | 4.5 | 4.5 | | | | 4.5 |
| Max Green Setting (Gmax), s | | 24.5 | 5.0 | 47.0 | | | | 56.5 |
| Max Q Clear Time (g_c+I1), s | | 3.5 | 0.0 | 5.4 | | | | 7.9 |
| Green Ext Time (p_c), s | | 0.5 | 0.0 | 4.1 | | | | 3.5 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 6.1 |
| HCM 2010 LOS | A |



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 121 | 554 | 491 | 481 | 366 | 40 |
| Future Volume (veh/h) | 121 | 554 | 491 | 481 | 366 | 40 |
| Number | 7 | 4 | 8 | 18 | 1 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 132 | 602 | 534 | 395 | 398 | 28 |
| Adj No. of Lanes | 1 | 1 | 1 | 1 | 1 | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 355 | 959 | 959 | 815 | 488 | 435 |
| Arrive On Green | 0.51 | 0.51 | 0.51 | 0.51 | 0.27 | 0.27 |
| Sat Flow, veh/h | 600 | 1863 | 1863 | 1583 | 1774 | 1583 |
| Grp Volume(v), veh/h | 132 | 602 | 534 | 395 | 398 | 28 |
| Grp Sat Flow(s),veh/h/ln | 600 | 1863 | 1863 | 1583 | 1774 | 1583 |
| Q Serve(g_s), s | 8.5 | 10.2 | 8.6 | 7.1 | 9.3 | 0.6 |
| Cycle Q Clear(g_c), s | 17.1 | 10.2 | 8.6 | 7.1 | 9.3 | 0.6 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 355 | 959 | 959 | 815 | 488 | 435 |
| V/C Ratio(X) | 0.37 | 0.63 | 0.56 | 0.48 | 0.82 | 0.06 |
| Avail Cap(c_a), veh/h | 462 | 1292 | 1292 | 1098 | 802 | 716 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 13.1 | 7.7 | 7.3 | 6.9 | 15.0 | 11.8 |
| Incr Delay (d2), s/veh | 0.6 | 0.7 | 0.5 | 0.4 | 3.4 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.5 | 5.4 | 4.4 | 3.2 | 5.0 | 0.3 |
| LnGrp Delay(d),s/veh | 13.8 | 8.4 | 7.8 | 7.4 | 18.4 | 11.9 |
| LnGrp LOS | B | A | A | A | B | B |
| Approach Vol, veh/h | | 734 | 929 | | 426 | |
| Approach Delay, s/veh | | 9.3 | 7.6 | | 18.0 | |
| Approach LOS | | A | A | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | | | 28.1 | | 16.2 | | 28.1 |
| Change Period (Y+Rc), s | | | | 5.3 | | 4.0 | | 5.3 |
| Max Green Setting (Gmax), s | | | | 30.7 | | 20.0 | | 30.7 |
| Max Q Clear Time (g_c+I1), s | | | | 19.1 | | 11.3 | | 10.6 |
| Green Ext Time (p_c), s | | | | 3.7 | | 0.9 | | 4.3 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 10.3 |
| HCM 2010 LOS | B |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 60 | 927 | 14 | 281 | 858 | 211 | 20 | 233 | 437 | 165 | 94 | 44 |
| Future Volume (veh/h) | 60 | 927 | 14 | 281 | 858 | 211 | 20 | 233 | 437 | 165 | 94 | 44 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.95 | 1.00 | | 0.31 | 1.00 | | 0.61 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 70 | 1078 | -39 | 327 | 998 | 237 | 23 | 271 | 231 | 192 | 109 | 50 |
| Adj No. of Lanes | 1 | 2 | 0 | 2 | 2 | 0 | 1 | 1 | 2 | 1 | 1 | 0 |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 89 | 1493 | 0 | 384 | 1359 | 321 | 40 | 350 | 473 | 221 | 291 | 133 |
| Arrive On Green | 0.05 | 0.42 | 0.00 | 0.11 | 0.48 | 0.48 | 0.02 | 0.19 | 0.19 | 0.12 | 0.29 | 0.29 |
| Sat Flow, veh/h | 1774 | 3632 | 0 | 3442 | 2812 | 665 | 1774 | 1863 | 864 | 1774 | 989 | 454 |
| Grp Volume(v), veh/h | 70 | 1039 | 0 | 327 | 627 | 608 | 23 | 271 | 231 | 192 | 0 | 159 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 0 | 1721 | 1770 | 1708 | 1774 | 1863 | 432 | 1774 | 0 | 1442 |
| Q Serve(g_s), s | 4.6 | 28.1 | 0.0 | 10.9 | 33.1 | 33.4 | 1.5 | 16.2 | 22.0 | 12.4 | 0.0 | 10.2 |
| Cycle Q Clear(g_c), s | 4.6 | 28.1 | 0.0 | 10.9 | 33.1 | 33.4 | 1.5 | 16.2 | 22.0 | 12.4 | 0.0 | 10.2 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 0.39 | 1.00 | | 1.00 | 1.00 | | 0.31 |
| Lane Grp Cap(c), veh/h | 89 | 1493 | 0 | 384 | 855 | 825 | 40 | 350 | 473 | 221 | 0 | 424 |
| V/C Ratio(X) | 0.78 | 0.70 | 0.00 | 0.85 | 0.73 | 0.74 | 0.58 | 0.77 | 0.49 | 0.87 | 0.00 | 0.37 |
| Avail Cap(c_a), veh/h | 91 | 1493 | 0 | 412 | 855 | 825 | 91 | 350 | 473 | 265 | 0 | 424 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 54.9 | 27.7 | 0.0 | 51.0 | 24.2 | 24.3 | 56.6 | 45.1 | 38.6 | 50.3 | 0.0 | 32.7 |
| Incr Delay (d2), s/veh | 34.4 | 2.7 | 0.0 | 14.9 | 5.5 | 5.8 | 12.4 | 10.3 | 0.8 | 22.3 | 0.0 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.1 | 14.3 | 0.0 | 6.0 | 17.5 | 17.1 | 0.9 | 9.4 | 3.4 | 7.4 | 0.0 | 4.1 |
| LnGrp Delay(d),s/veh | 89.3 | 30.4 | 0.0 | 65.9 | 29.7 | 30.1 | 69.0 | 55.4 | 39.4 | 72.6 | 0.0 | 33.3 |
| LnGrp LOS | F | C | | E | C | C | E | E | D | E | | C |
| Approach Vol, veh/h | | 1109 | | | 1562 | | | 525 | | | 351 | |
| Approach Delay, s/veh | | 34.1 | | | 37.4 | | | 48.9 | | | 54.8 | |
| Approach LOS | | C | | | D | | | D | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 17.0 | 54.8 | 6.6 | 38.4 | 9.9 | 62.0 | 19.1 | 26.0 |
| Change Period (Y+Rc), s | 4.0 | 5.5 | 4.0 | 4.0 | 4.0 | 5.5 | 4.5 | 4.0 |
| Max Green Setting (Gmax), s | 13.0 | 48.5 | 6.0 | 34.0 | 6.0 | 56.5 | 17.5 | 22.0 |
| Max Q Clear Time (g_c+I1), s | 12.9 | 30.1 | 3.5 | 12.2 | 6.6 | 35.4 | 14.4 | 24.0 |
| Green Ext Time (p_c), s | 0.1 | 7.7 | 0.0 | 1.0 | 0.0 | 9.6 | 0.2 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 39.8 |
| HCM 2010 LOS | D |

| Intersection | |
|---|---|
| Int Delay, s/veh | 41.2 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 1433 | 83 | 61 | 1323 | 21 | 41 |
| Future Vol, veh/h | 1433 | 83 | 61 | 1323 | 21 | 41 |
| Conflicting Peds, #/hr | 0 | 12 | 12 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 150 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 74 | 74 | 74 | 74 | 74 | 74 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1936 | 112 | 82 | 1788 | 28 | 55 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 2060 | 0 | 3062 | 1036 |
| Stage 1 | - | - | - | - | 2004 | - |
| Stage 2 | - | - | - | - | 1058 | - |
| Critical Hdwy | - | - | 4.14 | - | 6.84 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 | - |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 | 3.32 |
| Pot Cap-1 Maneuver | - | - | 268 | - | ~ 10 | 228 |
| Stage 1 | - | - | - | - | 90 | - |
| Stage 2 | - | - | - | - | 295 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 265 | - | ~ 7 | 225 |
| Mov Cap-2 Maneuver | - | - | - | - | ~ 7 | - |
| Stage 1 | - | - | - | - | 61 | - |
| Stage 2 | - | - | - | - | 295 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 1.1 | $ 1943.8 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 19 | - | - | 265 | - |
| HCM Lane V/C Ratio | 4.41 | - | - | 0.311 | - |
| HCM Control Delay (s) | $ 1943.8 | - | - | 24.6 | - |
| HCM Lane LOS | F | - | - | C | - |
| HCM 95th %tile Q(veh) | 11 | - | - | 1.3 | - |

| Notes | | | |
|---|---|---|---|
| ~: Volume exceeds capacity | $: Delay exceeds 300s | +: Computation Not Defined | *: All major volume in platoon |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 104 | 1268 | 135 | 73 | 1266 | 141 | 84 | 57 | 49 | 80 | 41 | 31 |
| Future Volume (veh/h) | 104 | 1268 | 135 | 73 | 1266 | 141 | 84 | 57 | 49 | 80 | 41 | 31 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.96 | 1.00 | | 0.97 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 132 | 1605 | 165 | 92 | 1603 | 178 | 106 | 72 | -29 | 101 | 52 | -33 |
| Adj No. of Lanes | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 150 | 1460 | 148 | 467 | 2053 | 224 | 129 | 134 | 114 | 124 | 129 | 0 |
| Arrive On Green | 0.08 | 0.45 | 0.45 | 0.26 | 0.64 | 0.64 | 0.07 | 0.07 | 0.00 | 0.07 | 0.07 | 0.00 |
| Sat Flow, veh/h | 1774 | 3232 | 328 | 1774 | 3206 | 351 | 1774 | 1863 | 1583 | 1774 | 1863 | 0 |
| Grp Volume(v), veh/h | 132 | 868 | 902 | 92 | 873 | 908 | 106 | 72 | -29 | 101 | 19 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1790 | 1774 | 1770 | 1787 | 1774 | 1863 | 1583 | 1774 | 1863 | 0 |
| Q Serve(g_s), s | 9.6 | 58.7 | 58.7 | 5.2 | 45.6 | 48.2 | 7.7 | 4.8 | 0.0 | 7.3 | 1.2 | 0.0 |
| Cycle Q Clear(g_c), s | 9.6 | 58.7 | 58.7 | 5.2 | 45.6 | 48.2 | 7.7 | 4.8 | 0.0 | 7.3 | 1.2 | 0.0 |
| Prop In Lane | 1.00 | | 0.18 | 1.00 | | 0.20 | 1.00 | | 1.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 150 | 799 | 808 | 467 | 1133 | 1144 | 129 | 134 | 114 | 124 | 129 | 0 |
| V/C Ratio(X) | 0.88 | 1.09 | 1.12 | 0.20 | 0.77 | 0.79 | 0.82 | 0.54 | -0.25 | 0.81 | 0.15 | 0.00 |
| Avail Cap(c_a), veh/h | 150 | 799 | 808 | 467 | 1133 | 1144 | 177 | 430 | 365 | 164 | 416 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.72 | 0.72 | 0.72 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 58.8 | 35.6 | 35.7 | 37.2 | 16.6 | 17.1 | 59.4 | 58.2 | 0.0 | 59.6 | 56.9 | 0.0 |
| Incr Delay (d2), s/veh | 39.4 | 57.9 | 68.4 | 0.1 | 3.7 | 4.1 | 14.0 | 4.6 | 0.0 | 15.8 | 0.7 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 6.3 | 41.5 | 44.3 | 2.6 | 23.2 | 25.0 | 4.3 | 2.7 | 0.0 | 4.1 | 0.7 | 0.0 |
| LnGrp Delay(d),s/veh | 98.2 | 93.6 | 104.0 | 37.3 | 20.3 | 21.2 | 73.4 | 62.9 | 0.0 | 75.5 | 57.7 | 0.0 |
| LnGrp LOS | F | F | F | D | C | C | E | E | | E | E | |
| Approach Vol, veh/h | | 1902 | | | 1873 | | | 149 | | | 120 | |
| Approach Delay, s/veh | | 98.9 | | | 21.6 | | | 82.6 | | | 72.6 | |
| Approach LOS | | F | | | C | | | F | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 39.5 | 64.0 | 13.5 | 13.0 | 15.0 | 88.5 | 13.1 | 13.4 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 4.0 | 4.0 | 4.0 | 5.3 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 12.0 | * 59 | 13.0 | 29.0 | 11.0 | 59.7 | 12.0 | 30.0 |
| Max Q Clear Time (g_c+I1), s | 7.2 | 60.7 | 9.7 | 3.2 | 11.6 | 50.2 | 9.3 | 6.8 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 9.3 | 0.0 | 0.4 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 61.7 |
| HCM 2010 LOS | E |

Notes



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 76 | 1284 | 50 | 80 | 1415 | 33 | 54 | 18 | 60 | 26 | 13 | 41 |
| Future Volume (veh/h) | 76 | 1284 | 50 | 80 | 1415 | 33 | 54 | 18 | 60 | 26 | 13 | 41 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.98 | 1.00 | | 0.97 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 85 | 1443 | 21 | 90 | 1590 | 22 | 61 | 20 | 28 | 29 | 15 | 29 |
| Adj No. of Lanes | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 486 | 2514 | 1106 | 137 | 1653 | 717 | 78 | 148 | 125 | 62 | 40 | 78 |
| Arrive On Green | 0.55 | 1.00 | 1.00 | 0.04 | 0.47 | 0.47 | 0.04 | 0.08 | 0.08 | 0.03 | 0.07 | 0.07 |
| Sat Flow, veh/h | 1774 | 3539 | 1557 | 3442 | 3539 | 1535 | 1774 | 1863 | 1578 | 1774 | 567 | 1097 |
| Grp Volume(v), veh/h | 85 | 1443 | 21 | 90 | 1590 | 22 | 61 | 20 | 28 | 29 | 0 | 44 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1557 | 1721 | 1770 | 1535 | 1774 | 1863 | 1578 | 1774 | 0 | 1665 |
| Q Serve(g_s), s | 3.1 | 0.0 | 0.0 | 3.4 | 56.5 | 0.8 | 4.4 | 1.3 | 2.2 | 2.1 | 0.0 | 3.3 |
| Cycle Q Clear(g_c), s | 3.1 | 0.0 | 0.0 | 3.4 | 56.5 | 0.8 | 4.4 | 1.3 | 2.2 | 2.1 | 0.0 | 3.3 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.66 |
| Lane Grp Cap(c), veh/h | 486 | 2514 | 1106 | 137 | 1653 | 717 | 78 | 148 | 125 | 62 | 0 | 118 |
| V/C Ratio(X) | 0.17 | 0.57 | 0.02 | 0.65 | 0.96 | 0.03 | 0.78 | 0.14 | 0.22 | 0.47 | 0.00 | 0.37 |
| Avail Cap(c_a), veh/h | 486 | 2514 | 1106 | 289 | 1653 | 717 | 108 | 516 | 437 | 108 | 0 | 461 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.45 | 0.45 | 0.45 | 0.64 | 0.64 | 0.64 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 22.0 | 0.0 | 0.0 | 61.5 | 33.5 | 12.0 | 61.5 | 55.7 | 56.1 | 61.5 | 0.0 | 57.6 |
| Incr Delay (d2), s/veh | 0.0 | 0.4 | 0.0 | 1.3 | 10.9 | 0.1 | 14.5 | 0.2 | 0.3 | 2.0 | 0.0 | 0.7 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.5 | 0.2 | 0.0 | 1.6 | 30.1 | 0.3 | 2.5 | 0.7 | 1.0 | 1.1 | 0.0 | 1.5 |
| LnGrp Delay(d),s/veh | 22.1 | 0.4 | 0.0 | 62.8 | 44.4 | 12.0 | 76.0 | 55.8 | 56.4 | 63.6 | 0.0 | 58.3 |
| LnGrp LOS | C | A | A | E | D | B | E | E | E | E | | E |
| Approach Vol, veh/h | | 1549 | | | 1702 | | | 109 | | | 73 | |
| Approach Delay, s/veh | | 1.6 | | | 45.0 | | | 67.3 | | | 60.4 | |
| Approach LOS | | A | | | D | | | E | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 9.3 | 97.6 | 9.8 | 13.3 | 40.9 | 66.0 | 8.6 | 14.4 |
| Change Period (Y+Rc), s | 4.1 | 5.3 | 4.1 | 4.0 | 5.3 | * 5.3 | 4.1 | * 4.1 |
| Max Green Setting (Gmax), s | 10.3 | 57.7 | 7.9 | 36.0 | 7.9 | * 61 | 7.9 | * 36 |
| Max Q Clear Time (g_c+I1), s | 5.4 | 2.0 | 6.4 | 5.3 | 5.1 | 58.5 | 4.1 | 4.2 |
| Green Ext Time (p_c), s | 0.0 | 47.8 | 0.0 | 0.1 | 0.0 | 2.1 | 0.0 | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 26.4 |
| HCM 2010 LOS | C |

Notes

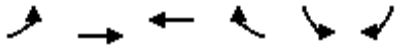


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 62 | 1283 | 25 | 335 | 1422 | 75 | 44 | 32 | 302 | 176 | 38 | 62 |
| Future Volume (veh/h) | 62 | 1283 | 25 | 335 | 1422 | 75 | 44 | 32 | 302 | 176 | 38 | 62 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.98 | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 0.99 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 68 | 1410 | 18 | 368 | 1563 | 81 | 48 | 35 | 57 | 193 | 42 | 27 |
| Adj No. of Lanes | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 513 | 2112 | 931 | 371 | 1435 | 639 | 79 | 202 | 170 | 96 | 125 | 80 |
| Arrive On Green | 0.58 | 1.00 | 1.00 | 0.11 | 0.41 | 0.41 | 0.04 | 0.11 | 0.11 | 0.05 | 0.12 | 0.12 |
| Sat Flow, veh/h | 1774 | 3539 | 1559 | 3442 | 3539 | 1576 | 1774 | 1863 | 1570 | 1774 | 1057 | 680 |
| Grp Volume(v), veh/h | 68 | 1410 | 18 | 368 | 1563 | 81 | 48 | 35 | 57 | 193 | 0 | 69 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1559 | 1721 | 1770 | 1576 | 1774 | 1863 | 1570 | 1774 | 0 | 1737 |
| Q Serve(g_s), s | 2.3 | 0.0 | 0.0 | 13.9 | 52.7 | 3.3 | 3.5 | 2.2 | 4.4 | 7.0 | 0.0 | 4.7 |
| Cycle Q Clear(g_c), s | 2.3 | 0.0 | 0.0 | 13.9 | 52.7 | 3.3 | 3.5 | 2.2 | 4.4 | 7.0 | 0.0 | 4.7 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.39 |
| Lane Grp Cap(c), veh/h | 513 | 2112 | 931 | 371 | 1435 | 639 | 79 | 202 | 170 | 96 | 0 | 205 |
| V/C Ratio(X) | 0.13 | 0.67 | 0.02 | 0.99 | 1.09 | 0.13 | 0.61 | 0.17 | 0.33 | 2.02 | 0.00 | 0.34 |
| Avail Cap(c_a), veh/h | 513 | 2112 | 931 | 371 | 1435 | 639 | 96 | 602 | 507 | 96 | 0 | 561 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.80 | 0.80 | 0.80 | 0.76 | 0.76 | 0.76 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 20.0 | 0.0 | 0.0 | 58.0 | 38.7 | 15.1 | 61.0 | 52.6 | 53.6 | 61.5 | 0.0 | 52.6 |
| Incr Delay (d2), s/veh | 0.0 | 1.4 | 0.0 | 38.9 | 49.7 | 0.3 | 3.0 | 0.1 | 0.4 | 493.9 | 0.0 | 0.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.1 | 0.4 | 0.0 | 8.6 | 35.6 | 1.5 | 1.8 | 1.2 | 1.9 | 16.5 | 0.0 | 2.3 |
| LnGrp Delay(d),s/veh | 20.0 | 1.4 | 0.0 | 96.8 | 88.3 | 15.4 | 64.0 | 52.8 | 54.0 | 555.4 | 0.0 | 53.0 |
| LnGrp LOS | C | A | A | F | F | B | E | D | D | F | | D |
| Approach Vol, veh/h | | 1496 | | | 2012 | | | 140 | | | 262 | |
| Approach Delay, s/veh | | 2.2 | | | 87.0 | | | 57.1 | | | 423.1 | |
| Approach LOS | | A | | | F | | | E | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 18.0 | 82.9 | 9.8 | 19.4 | 42.9 | 58.0 | 11.0 | 18.1 |
| Change Period (Y+Rc), s | 4.0 | 5.3 | 4.0 | 4.0 | 5.3 | * 5.3 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 14.0 | 49.7 | 7.0 | 42.0 | 11.0 | * 53 | 7.0 | 42.0 |
| Max Q Clear Time (g_c+I1), s | 15.9 | 2.0 | 5.5 | 6.7 | 4.3 | 54.7 | 9.0 | 6.4 |
| Green Ext Time (p_c), s | 0.0 | 8.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.2 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 76.0 |
| HCM 2010 LOS | E |

Notes



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 131 | 1630 | 1034 | 29 | 560 | 798 |
| Future Volume (veh/h) | 131 | 1630 | 1034 | 29 | 560 | 798 |
| Number | 7 | 4 | 8 | 18 | 1 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 142 | 1772 | 1124 | 0 | 609 | 579 |
| Adj No. of Lanes | 2 | 2 | 3 | 1 | 1 | 2 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 186 | 1607 | 1843 | 574 | 835 | 1312 |
| Arrive On Green | 0.05 | 0.45 | 0.36 | 0.00 | 0.47 | 0.47 |
| Sat Flow, veh/h | 3442 | 3632 | 5253 | 1583 | 1774 | 2787 |
| Grp Volume(v), veh/h | 142 | 1772 | 1124 | 0 | 609 | 579 |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1770 | 1695 | 1583 | 1774 | 1393 |
| Q Serve(g_s), s | 4.9 | 54.5 | 21.7 | 0.0 | 33.2 | 16.7 |
| Cycle Q Clear(g_c), s | 4.9 | 54.5 | 21.7 | 0.0 | 33.2 | 16.7 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 186 | 1607 | 1843 | 574 | 835 | 1312 |
| V/C Ratio(X) | 0.76 | 1.10 | 0.61 | 0.00 | 0.73 | 0.44 |
| Avail Cap(c_a), veh/h | 186 | 1607 | 1843 | 574 | 835 | 1312 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.33 | 0.33 | 1.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 56.0 | 32.8 | 31.3 | 0.0 | 25.6 | 21.2 |
| Incr Delay (d2), s/veh | 6.0 | 49.7 | 0.6 | 0.0 | 3.2 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.5 | 37.7 | 10.2 | 0.0 | 17.0 | 14.7 |
| LnGrp Delay(d),s/veh | 62.0 | 82.5 | 31.9 | 0.0 | 28.8 | 21.4 |
| LnGrp LOS | E | F | C | | C | C |
| Approach Vol, veh/h | | 1914 | 1124 | | 1188 | |
| Approach Delay, s/veh | | 81.0 | 31.9 | | 25.2 | |
| Approach LOS | | F | C | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | | | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | | | 59.0 | | 61.0 | 11.0 | 48.0 |
| Change Period (Y+Rc), s | | | | 4.5 | | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | | | | 54.5 | | 56.5 | 6.5 | 43.5 |
| Max Q Clear Time (g_c+I1), s | | | | 56.5 | | 35.2 | 6.9 | 23.7 |
| Green Ext Time (p_c), s | | | | 0.0 | | 4.7 | 0.0 | 7.3 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 52.2 |
| HCM 2010 LOS | D |



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 1458 | 732 | 0 | 1352 | 212 | 64 |
| Future Volume (veh/h) | 1458 | 732 | 0 | 1352 | 212 | 64 |
| Number | 4 | 14 | 3 | 8 | 5 | 12 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 0 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 1585 | 796 | 0 | 1470 | 230 | 70 |
| Adj No. of Lanes | 2 | 1 | 0 | 2 | 2 | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 0 | 2 | 2 | 2 |
| Cap, veh/h | 2129 | 952 | 0 | 2129 | 1114 | 512 |
| Arrive On Green | 0.60 | 0.60 | 0.00 | 0.60 | 0.32 | 0.32 |
| Sat Flow, veh/h | 3632 | 1583 | 0 | 3725 | 3442 | 1583 |
| Grp Volume(v), veh/h | 1585 | 796 | 0 | 1470 | 230 | 70 |
| Grp Sat Flow(s),veh/h/ln | 1770 | 1583 | 0 | 1770 | 1721 | 1583 |
| Q Serve(g_s), s | 38.8 | 48.4 | 0.0 | 34.0 | 5.8 | 3.8 |
| Cycle Q Clear(g_c), s | 38.8 | 48.4 | 0.0 | 34.0 | 5.8 | 3.8 |
| Prop In Lane | | 1.00 | 0.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 2129 | 952 | 0 | 2129 | 1114 | 512 |
| V/C Ratio(X) | 0.74 | 0.84 | 0.00 | 0.69 | 0.21 | 0.14 |
| Avail Cap(c_a), veh/h | 2581 | 1155 | 0 | 2581 | 1114 | 512 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.90 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 17.3 | 19.2 | 0.0 | 16.3 | 29.4 | 28.7 |
| Incr Delay (d2), s/veh | 1.0 | 4.6 | 0.0 | 0.5 | 0.4 | 0.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 19.0 | 22.2 | 0.0 | 16.7 | 2.8 | 1.7 |
| LnGrp Delay(d),s/veh | 18.2 | 23.8 | 0.0 | 16.8 | 29.8 | 29.3 |
| LnGrp LOS | B | C | | B | C | C |
| Approach Vol, veh/h | 2381 | | | 1470 | 300 | |
| Approach Delay, s/veh | 20.1 | | | 16.8 | 29.7 | |
| Approach LOS | C | | | B | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | | | 8 |
| Phs Duration (G+Y+Rc), s | | 43.3 | | 76.7 | | | | 76.7 |
| Change Period (Y+Rc), s | | 4.5 | | 4.5 | | | | 4.5 |
| Max Green Setting (Gmax), s | | 23.5 | | 87.5 | | | | 87.5 |
| Max Q Clear Time (g_c+I1), s | | 7.8 | | 50.4 | | | | 36.0 |
| Green Ext Time (p_c), s | | 0.9 | | 21.8 | | | | 15.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 19.6 |
| HCM 2010 LOS | B |



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 1500 | 22 | 34 | 1324 | 28 | 38 |
| Future Volume (veh/h) | 1500 | 22 | 34 | 1324 | 28 | 38 |
| Number | 2 | 12 | 1 | 6 | 7 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 0.98 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 1579 | 17 | 36 | 1394 | 29 | 31 |
| Adj No. of Lanes | 2 | 1 | 1 | 2 | 1 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 2837 | 1242 | 50 | 3045 | 121 | 108 |
| Arrive On Green | 0.80 | 0.80 | 0.03 | 0.86 | 0.07 | 0.07 |
| Sat Flow, veh/h | 3632 | 1550 | 1774 | 3632 | 1774 | 1583 |
| Grp Volume(v), veh/h | 1579 | 17 | 36 | 1394 | 29 | 31 |
| Grp Sat Flow(s),veh/h/ln | 1770 | 1550 | 1774 | 1770 | 1774 | 1583 |
| Q Serve(g_s), s | 20.8 | 0.3 | 2.6 | 11.8 | 2.0 | 2.4 |
| Cycle Q Clear(g_c), s | 20.8 | 0.3 | 2.6 | 11.8 | 2.0 | 2.4 |
| Prop In Lane | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 2837 | 1242 | 50 | 3045 | 121 | 108 |
| V/C Ratio(X) | 0.56 | 0.01 | 0.73 | 0.46 | 0.24 | 0.29 |
| Avail Cap(c_a), veh/h | 2837 | 1242 | 150 | 3045 | 368 | 329 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.72 | 0.72 | 0.68 | 0.68 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 4.6 | 2.6 | 62.7 | 2.1 | 57.4 | 57.6 |
| Incr Delay (d2), s/veh | 0.6 | 0.0 | 5.0 | 0.3 | 0.4 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.1 | 0.1 | 1.3 | 5.8 | 1.0 | 1.1 |
| LnGrp Delay(d),s/veh | 5.2 | 2.6 | 67.7 | 2.4 | 57.8 | 58.1 |
| LnGrp LOS | A | A | E | A | E | E |
| Approach Vol, veh/h | 1596 | | | 1430 | 60 | |
| Approach Delay, s/veh | 5.2 | | | 4.1 | 57.9 | |
| Approach LOS | A | | | A | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | | 6 | | |
| Phs Duration (G+Y+Rc), s | 7.6 | 109.5 | | 12.9 | | 117.1 | | |
| Change Period (Y+Rc), s | 4.0 | 5.3 | | 4.0 | | 5.3 | | |
| Max Green Setting (Gmax), s | 1.6 | 78.7 | | 27.0 | | 93.7 | | |
| Max Q Clear Time (g_c+I1), s | 4.6 | 22.8 | | 4.4 | | 13.8 | | |
| Green Ext Time (p_c), s | 0.0 | 9.8 | | 0.1 | | 7.9 | | |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 5.7 |
| HCM 2010 LOS | A |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 399 | 920 | 196 | 76 | 845 | 150 | 193 | 198 | 107 | 196 | 159 | 320 |
| Future Volume (veh/h) | 399 | 920 | 196 | 76 | 845 | 150 | 193 | 198 | 107 | 196 | 159 | 320 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 7 | 4 | 14 | 3 | 8 | 18 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 0.98 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 429 | 989 | 202 | 82 | 909 | 70 | 208 | 213 | 78 | 211 | 171 | 0 |
| Adj No. of Lanes | 2 | 2 | 0 | 1 | 2 | 1 | 1 | 2 | 1 | 2 | 2 | 1 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 479 | 1229 | 251 | 441 | 1911 | 853 | 164 | 325 | 142 | 299 | 322 | 144 |
| Arrive On Green | 0.28 | 0.84 | 0.84 | 0.25 | 0.54 | 0.54 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.00 |
| Sat Flow, veh/h | 3442 | 2921 | 596 | 1774 | 3539 | 1581 | 1774 | 3539 | 1550 | 3442 | 3539 | 1583 |
| Grp Volume(v), veh/h | 429 | 598 | 593 | 82 | 909 | 70 | 208 | 213 | 78 | 211 | 171 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1770 | 1747 | 1774 | 1770 | 1581 | 1774 | 1770 | 1550 | 1721 | 1770 | 1583 |
| Q Serve(g_s), s | 15.6 | 21.5 | 21.7 | 4.7 | 20.7 | 2.8 | 12.0 | 7.6 | 4.8 | 7.8 | 6.0 | 0.0 |
| Cycle Q Clear(g_c), s | 15.6 | 21.5 | 21.7 | 4.7 | 20.7 | 2.8 | 12.0 | 7.6 | 4.8 | 7.8 | 6.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.34 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 479 | 745 | 735 | 441 | 1911 | 853 | 164 | 325 | 142 | 299 | 322 | 144 |
| V/C Ratio(X) | 0.89 | 0.80 | 0.81 | 0.19 | 0.48 | 0.08 | 1.27 | 0.66 | 0.55 | 0.71 | 0.53 | 0.00 |
| Avail Cap(c_a), veh/h | 556 | 745 | 735 | 441 | 1911 | 853 | 164 | 937 | 410 | 318 | 937 | 419 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.83 | 0.83 | 0.83 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 46.0 | 7.7 | 7.7 | 38.5 | 18.5 | 14.4 | 59.0 | 57.1 | 33.8 | 57.7 | 56.5 | 0.0 |
| Incr Delay (d2), s/veh | 13.3 | 7.6 | 7.8 | 0.2 | 0.9 | 0.2 | 160.7 | 2.3 | 3.3 | 6.5 | 1.4 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 8.3 | 11.2 | 11.1 | 2.3 | 10.3 | 1.2 | 13.2 | 3.8 | 2.2 | 4.0 | 3.0 | 0.0 |
| LnGrp Delay(d),s/veh | 59.3 | 15.2 | 15.4 | 38.7 | 19.4 | 14.6 | 219.7 | 59.3 | 37.1 | 64.3 | 57.8 | 0.0 |
| LnGrp LOS | E | B | B | D | B | B | F | E | D | E | E | |
| Approach Vol, veh/h | | 1620 | | | 1061 | | | 499 | | | 382 | |
| Approach Delay, s/veh | | 27.0 | | | 20.5 | | | 122.7 | | | 61.4 | |
| Approach LOS | | C | | | C | | | F | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 17.6 | 60.0 | 15.9 | 16.5 | 22.1 | 75.5 | 16.0 | 16.4 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 4.6 | * 4.6 | 4.0 | 5.3 | 4.0 | 4.6 |
| Max Green Setting (Gmax), s | 12.3 | * 55 | 12.0 | * 34 | 21.0 | 44.7 | 12.0 | 34.4 |
| Max Q Clear Time (g_c+I1), s | 16.7 | 23.7 | 9.8 | 9.6 | 17.6 | 22.7 | 14.0 | 8.0 |
| Green Ext Time (p_c), s | 0.1 | 10.8 | 0.1 | 1.5 | 0.5 | 7.5 | 0.0 | 1.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 42.2 |
| HCM 2010 LOS | D |

Notes



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 51 | 190 | 16 | 0 | 48 | 468 | 31 | 958 | 0 | 575 | 471 | 27 |
| Future Volume (veh/h) | 51 | 190 | 16 | 0 | 48 | 468 | 31 | 958 | 0 | 575 | 471 | 27 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1827 | 1827 | 1900 | 1827 | 1827 | 1827 | 1827 | 1827 | 1900 | 1827 | 1827 | 1900 |
| Adj Flow Rate, veh/h | 53 | 198 | 0 | 0 | 50 | 0 | 32 | 998 | 0 | 599 | 491 | 0 |
| Adj No. of Lanes | 1 | 2 | 0 | 1 | 1 | 1 | 1 | 2 | 0 | 2 | 2 | 0 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Cap, veh/h | 73 | 576 | 0 | 2 | 75 | 64 | 54 | 1276 | 0 | 734 | 2004 | 0 |
| Arrive On Green | 0.04 | 0.17 | 0.00 | 0.00 | 0.04 | 0.00 | 0.03 | 0.37 | 0.00 | 0.22 | 0.58 | 0.00 |
| Sat Flow, veh/h | 1740 | 3563 | 0 | 1740 | 1827 | 1553 | 1740 | 3563 | 0 | 3375 | 3563 | 0 |
| Grp Volume(v), veh/h | 53 | 198 | 0 | 0 | 50 | 0 | 32 | 998 | 0 | 599 | 491 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1740 | 1736 | 0 | 1740 | 1827 | 1553 | 1740 | 1736 | 0 | 1688 | 1736 | 0 |
| Q Serve(g_s), s | 2.5 | 4.3 | 0.0 | 0.0 | 2.3 | 0.0 | 1.5 | 21.5 | 0.0 | 14.2 | 5.9 | 0.0 |
| Cycle Q Clear(g_c), s | 2.5 | 4.3 | 0.0 | 0.0 | 2.3 | 0.0 | 1.5 | 21.5 | 0.0 | 14.2 | 5.9 | 0.0 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 73 | 576 | 0 | 2 | 75 | 64 | 54 | 1276 | 0 | 734 | 2004 | 0 |
| V/C Ratio(X) | 0.72 | 0.34 | 0.00 | 0.00 | 0.67 | 0.00 | 0.59 | 0.78 | 0.00 | 0.82 | 0.24 | 0.00 |
| Avail Cap(c_a), veh/h | 268 | 1193 | 0 | 103 | 455 | 387 | 268 | 3457 | 0 | 1761 | 4815 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 39.9 | 31.1 | 0.0 | 0.0 | 39.9 | 0.0 | 40.3 | 23.7 | 0.0 | 31.4 | 8.8 | 0.0 |
| Incr Delay (d2), s/veh | 12.6 | 0.4 | 0.0 | 0.0 | 9.9 | 0.0 | 9.7 | 1.1 | 0.0 | 2.3 | 0.1 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.5 | 2.1 | 0.0 | 0.0 | 1.4 | 0.0 | 0.9 | 10.4 | 0.0 | 6.9 | 2.8 | 0.0 |
| LnGrp Delay(d),s/veh | 52.5 | 31.5 | 0.0 | 0.0 | 49.8 | 0.0 | 50.0 | 24.8 | 0.0 | 33.7 | 8.8 | 0.0 |
| LnGrp LOS | D | C | | | D | | D | C | | C | A | |
| Approach Vol, veh/h | | 251 | | | 50 | | | 1030 | | | 1090 | |
| Approach Delay, s/veh | | 35.9 | | | 49.8 | | | 25.5 | | | 22.5 | |
| Approach LOS | | D | | | D | | | C | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 25.3 | 38.0 | 0.0 | 21.0 | 7.6 | 55.7 | 10.6 | 10.5 |
| Change Period (Y+Rc), s | 7.0 | 7.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 | 7.0 |
| Max Green Setting (Gmax), s | 14.3 | 84.0 | 5.0 | 29.0 | 13.0 | 117.0 | 13.0 | 21.0 |
| Max Q Clear Time (g_c+I1), s | 16.2 | 23.5 | 0.0 | 6.3 | 3.5 | 7.9 | 4.5 | 4.3 |
| Green Ext Time (p_c), s | 2.1 | 7.5 | 0.0 | 1.0 | 0.0 | 3.0 | 0.0 | 0.1 |

| Intersection Summary | | |
|---|---|---|
| HCM 2010 Ctrl Delay | | 25.7 |
| HCM 2010 LOS | | C |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 8 | 13 | 2 | 151 | 6 | 2 | 0 | 996 | 500 | 3 | 506 | 4 |
| Future Volume (veh/h) | 8 | 13 | 2 | 151 | 6 | 2 | 0 | 996 | 500 | 3 | 506 | 4 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 1 | 6 | 16 | 5 | 2 | 12 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 8 | 14 | 2 | 159 | 6 | 1 | 0 | 1048 | 492 | 3 | 533 | 3 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 21 | 47 | 7 | 198 | 200 | 33 | 2 | 1185 | 1184 | 9 | 2510 | 14 |
| Arrive On Green | 0.01 | 0.03 | 0.03 | 0.11 | 0.13 | 0.13 | 0.00 | 0.64 | 0.64 | 0.00 | 0.70 | 0.70 |
| Sat Flow, veh/h | 1774 | 1595 | 228 | 1774 | 1554 | 259 | 1774 | 1863 | 1583 | 1774 | 3608 | 20 |
| Grp Volume(v), veh/h | 8 | 0 | 16 | 159 | 0 | 7 | 0 | 1048 | 492 | 3 | 261 | 275 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 0 | 1823 | 1774 | 0 | 1813 | 1774 | 1863 | 1583 | 1774 | 1770 | 1859 |
| Q Serve(g_s), s | 0.4 | 0.0 | 0.8 | 8.0 | 0.0 | 0.3 | 0.0 | 42.9 | 10.4 | 0.2 | 4.8 | 4.8 |
| Cycle Q Clear(g_c), s | 0.4 | 0.0 | 0.8 | 8.0 | 0.0 | 0.3 | 0.0 | 42.9 | 10.4 | 0.2 | 4.8 | 4.8 |
| Prop In Lane | 1.00 | | 0.13 | 1.00 | | 0.14 | 1.00 | | 1.00 | 1.00 | | 0.01 |
| Lane Grp Cap(c), veh/h | 21 | 0 | 53 | 198 | 0 | 233 | 2 | 1185 | 1184 | 9 | 1231 | 1293 |
| V/C Ratio(X) | 0.37 | 0.00 | 0.30 | 0.80 | 0.00 | 0.03 | 0.00 | 0.88 | 0.42 | 0.35 | 0.21 | 0.21 |
| Avail Cap(c_a), veh/h | 116 | 0 | 159 | 696 | 0 | 751 | 116 | 3148 | 2853 | 116 | 2991 | 3142 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 45.0 | 0.0 | 43.6 | 39.7 | 0.0 | 34.9 | 0.0 | 13.9 | 4.2 | 45.5 | 5.0 | 5.0 |
| Incr Delay (d2), s/veh | 10.5 | 0.0 | 3.1 | 7.4 | 0.0 | 0.1 | 0.0 | 2.4 | 0.2 | 22.9 | 0.1 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.3 | 0.0 | 0.4 | 4.3 | 0.0 | 0.2 | 0.0 | 22.6 | 4.5 | 0.1 | 2.4 | 2.5 |
| LnGrp Delay(d),s/veh | 55.4 | 0.0 | 46.7 | 47.1 | 0.0 | 35.0 | 0.0 | 16.3 | 4.5 | 68.4 | 5.1 | 5.1 |
| LnGrp LOS | E | | D | D | | C | | B | A | E | A | A |
| Approach Vol, veh/h | | 24 | | | 166 | | | 1540 | | | 539 | |
| Approach Delay, s/veh | | 49.6 | | | 46.6 | | | 12.5 | | | 5.4 | |
| Approach LOS | | D | | | D | | | B | | | A | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 10.0 | 68.8 | 15.2 | 7.7 | 5.4 | 63.3 | 6.1 | 16.8 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 6.0 | 155.0 | 36.0 | 8.0 | 6.0 | 155.0 | 6.0 | 38.0 |
| Max Q Clear Time (g_c+I1), s | 10.0 | 6.8 | 10.0 | 2.8 | 2.2 | 44.9 | 2.4 | 2.3 |
| Green Ext Time (p_c), s | 0.0 | 2.8 | 0.4 | 0.0 | 0.0 | 13.4 | 0.0 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 13.7 |
| HCM 2010 LOS | B |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 185 | 11 | 58 | 37 | 314 | 29 | 1190 | 229 | 206 | 346 | 81 |
| Future Volume (veh/h) | 0 | 185 | 11 | 58 | 37 | 314 | 29 | 1190 | 229 | 206 | 346 | 81 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 0 | 195 | 12 | 50 | 54 | 331 | 31 | 1253 | 0 | 217 | 364 | 0 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 2 | 243 | 15 | 64 | 438 | 372 | 41 | 1537 | 745 | 256 | 1966 | 0 |
| Arrive On Green | 0.00 | 0.14 | 0.14 | 0.04 | 0.24 | 0.24 | 0.02 | 0.43 | 0.00 | 0.14 | 0.56 | 0.00 |
| Sat Flow, veh/h | 1774 | 1737 | 107 | 1774 | 1863 | 1583 | 1774 | 3539 | 1583 | 1774 | 3632 | 0 |
| Grp Volume(v), veh/h | 0 | 0 | 207 | 50 | 54 | 331 | 31 | 1253 | 0 | 217 | 364 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 0 | 1844 | 1774 | 1863 | 1583 | 1774 | 1770 | 1583 | 1774 | 1770 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 11.1 | 2.8 | 2.3 | 20.6 | 1.8 | 31.6 | 0.0 | 12.2 | 5.2 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 0.0 | 11.1 | 2.8 | 2.3 | 20.6 | 1.8 | 31.6 | 0.0 | 12.2 | 5.2 | 0.0 |
| Prop In Lane | 1.00 | | 0.06 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 2 | 0 | 258 | 64 | 438 | 372 | 41 | 1537 | 745 | 256 | 1966 | 0 |
| V/C Ratio(X) | 0.00 | 0.00 | 0.80 | 0.78 | 0.12 | 0.89 | 0.76 | 0.82 | 0.00 | 0.85 | 0.19 | 0.00 |
| Avail Cap(c_a), veh/h | 70 | 0 | 814 | 244 | 1005 | 854 | 122 | 3263 | 1517 | 818 | 4652 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 0.0 | 0.0 | 42.5 | 48.7 | 30.7 | 37.7 | 49.5 | 25.3 | 0.0 | 42.5 | 11.2 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 0.0 | 5.7 | 17.7 | 0.1 | 7.3 | 24.9 | 1.1 | 0.0 | 7.6 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 0.0 | 6.0 | 1.7 | 1.2 | 9.8 | 1.2 | 15.5 | 0.0 | 6.5 | 2.5 | 0.0 |
| LnGrp Delay(d),s/veh | 0.0 | 0.0 | 48.2 | 66.4 | 30.8 | 45.0 | 74.4 | 26.4 | 0.0 | 50.2 | 11.3 | 0.0 |
| LnGrp LOS | | | D | E | C | D | E | C | | D | B | |
| Approach Vol, veh/h | | 207 | | | 435 | | | 1284 | | | 581 | |
| Approach Delay, s/veh | | 48.2 | | | 45.7 | | | 27.5 | | | 25.8 | |
| Approach LOS | | D | | | D | | | C | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 20.7 | 51.3 | 9.7 | 20.3 | 8.3 | 63.6 | 0.0 | 30.0 |
| Change Period (Y+Rc), s | 6.0 | 7.0 | 6.0 | 6.0 | 6.0 | 7.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 14.7 | 94.0 | 14.0 | 45.0 | 7.0 | 134.0 | 4.0 | 55.0 |
| Max Q Clear Time (g_c+I1), s | 14.2 | 33.6 | 4.8 | 13.1 | 3.8 | 7.2 | 0.0 | 22.6 |
| Green Ext Time (p_c), s | 0.6 | 10.6 | 0.0 | 1.0 | 0.0 | 2.2 | 0.0 | 1.4 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 32.0 |
| HCM 2010 LOS | C |

Notes

# LANE LEVEL OF SERVICE

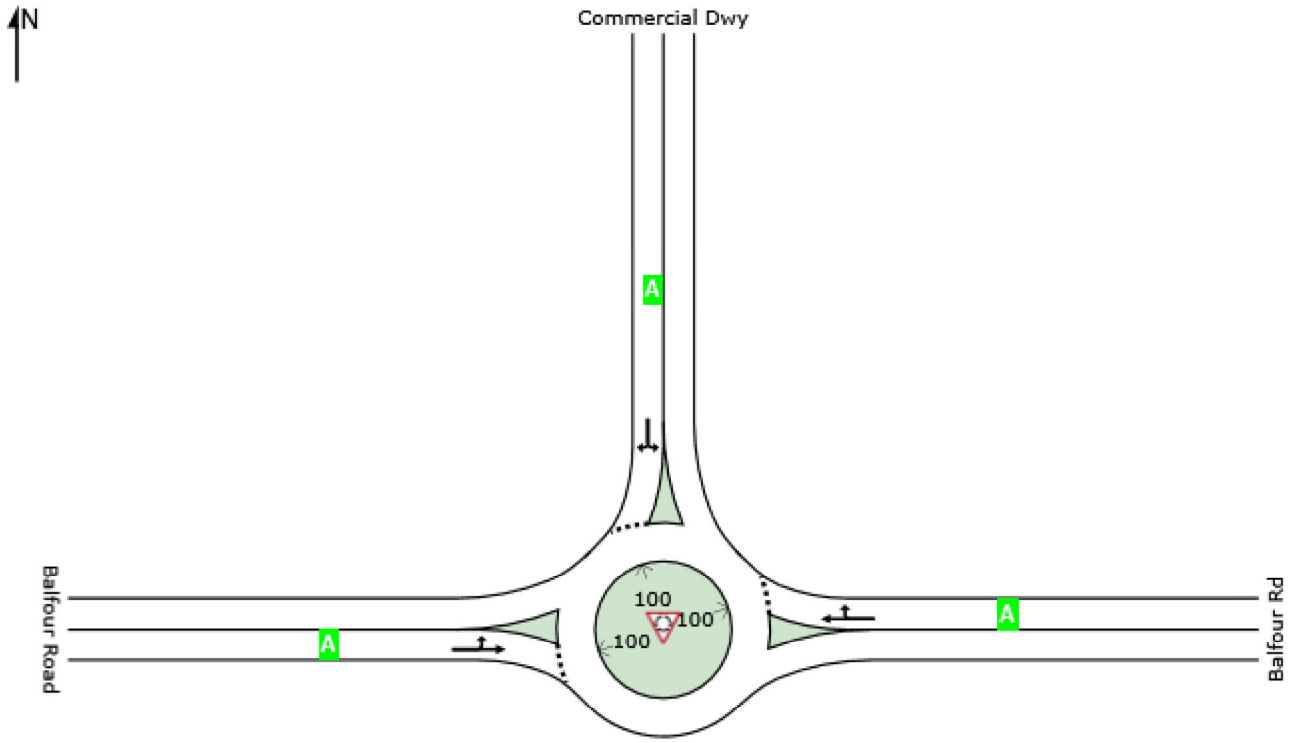
## Lane Level of Service

### Site: 6 [INT 6 - EX-PP_AM]

Vineyards at Deer Creek
Roundabout

**All Movement Classes**

| | East | North | West | Intersection |
|---|---|---|---|---|
| LOS | A | A | A | A |




Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

# MOVEMENT SUMMARY

## Site: 6 [INT 6 - EX-PP_AM]

Vineyards at Deer Creek
Roundabout

| Movement Performance - Vehicles | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mov ID | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance ft | Prop. Queued | Effective Stop Rate per veh | Average Speed mph |
| East: Balfour Rd | | | | | | | | | | | |
| 6 | T1 | 650 | 3.0 | 0.528 | 8.4 | LOS A | 4.3 | 110.2 | 0.18 | 0.05 | 33.5 |
| 16 | R2 | 42 | 3.0 | 0.528 | 8.4 | LOS A | 4.3 | 110.2 | 0.18 | 0.05 | 32.5 |
| Approach | | 692 | 3.0 | 0.528 | 8.4 | LOS A | 4.3 | 110.2 | 0.18 | 0.05 | 33.4 |
| North: Commercial Dwy | | | | | | | | | | | |
| 7 | L2 | 33 | 3.0 | 0.053 | 5.9 | LOS A | 0.2 | 5.1 | 0.58 | 0.51 | 32.3 |
| 14 | R2 | 3 | 3.0 | 0.053 | 5.9 | LOS A | 0.2 | 5.1 | 0.58 | 0.51 | 31.4 |
| Approach | | 36 | 3.0 | 0.053 | 5.9 | LOS A | 0.2 | 5.1 | 0.58 | 0.51 | 32.2 |
| West: Balfour Road | | | | | | | | | | | |
| 5 | L2 | 21 | 3.0 | 0.501 | 8.0 | LOS A | 3.8 | 98.2 | 0.22 | 0.08 | 33.6 |
| 2 | T1 | 628 | 3.0 | 0.501 | 8.0 | LOS A | 3.8 | 98.2 | 0.22 | 0.08 | 33.6 |
| Approach | | 649 | 3.0 | 0.501 | 8.0 | LOS A | 3.8 | 98.2 | 0.22 | 0.08 | 33.6 |
| All Vehicles | | 1377 | 3.0 | 0.528 | 8.2 | LOS A | 4.3 | 110.2 | 0.21 | 0.08 | 33.5 |

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# LANE LEVEL OF SERVICE

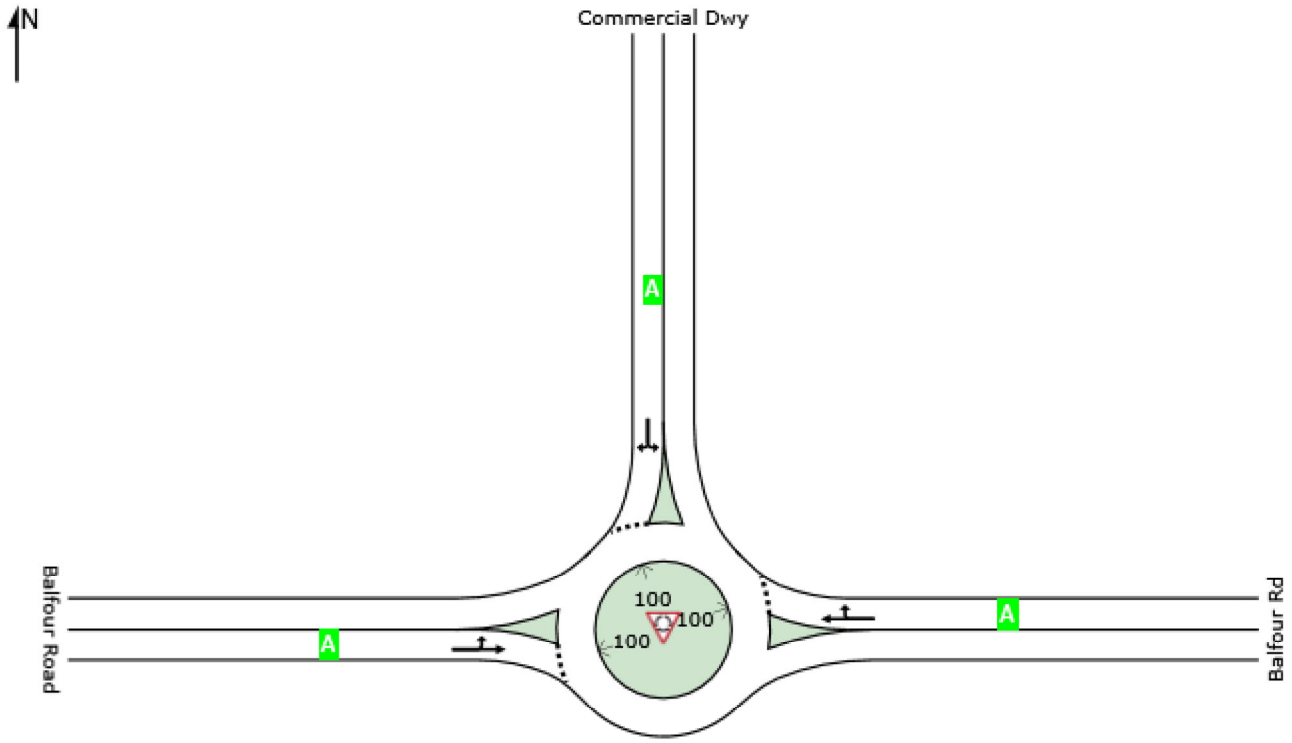
## Lane Level of Service

### Site: 6 [INT 6 - EX-PP_PM]

Vineyards at Deer Creek
Roundabout

**All Movement Classes**

| | East | North | West | Intersection |
|---|---|---|---|---|
| LOS | A | A | A | A |




Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

# MOVEMENT SUMMARY

## Site: 6 [INT 6 - EX-PP_PM]

Vineyards at Deer Creek
Roundabout

| Movement Performance - Vehicles | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mov ID | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance ft | Prop. Queued | Effective Stop Rate per veh | Average Speed mph |
| East: Balfour Rd | | | | | | | | | | | |
| 6 | T1 | 474 | 3.0 | 0.472 | 7.8 | LOS A | 3.3 | 85.6 | 0.29 | 0.14 | 33.8 |
| 16 | R2 | 120 | 3.0 | 0.472 | 7.8 | LOS A | 3.3 | 85.6 | 0.29 | 0.14 | 32.8 |
| Approach | | 593 | 3.0 | 0.472 | 7.8 | LOS A | 3.3 | 85.6 | 0.29 | 0.14 | 33.6 |
| North: Commercial Dwy | | | | | | | | | | | |
| 7 | L2 | 177 | 3.0 | 0.242 | 7.0 | LOS A | 1.1 | 27.3 | 0.58 | 0.53 | 31.8 |
| 14 | R2 | 20 | 3.0 | 0.242 | 7.0 | LOS A | 1.1 | 27.3 | 0.58 | 0.53 | 31.0 |
| Approach | | 197 | 3.0 | 0.242 | 7.0 | LOS A | 1.1 | 27.3 | 0.58 | 0.53 | 31.7 |
| West: Balfour Road | | | | | | | | | | | |
| 5 | L2 | 61 | 3.0 | 0.516 | 9.2 | LOS A | 3.5 | 89.7 | 0.52 | 0.37 | 32.9 |
| 2 | T1 | 513 | 3.0 | 0.516 | 9.2 | LOS A | 3.5 | 89.7 | 0.52 | 0.37 | 32.8 |
| Approach | | 574 | 3.0 | 0.516 | 9.2 | LOS A | 3.5 | 89.7 | 0.52 | 0.37 | 32.8 |
| All Vehicles | | 1364 | 3.0 | 0.516 | 8.3 | LOS A | 3.5 | 89.7 | 0.43 | 0.29 | 33.0 |

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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# LANE LEVEL OF SERVICE

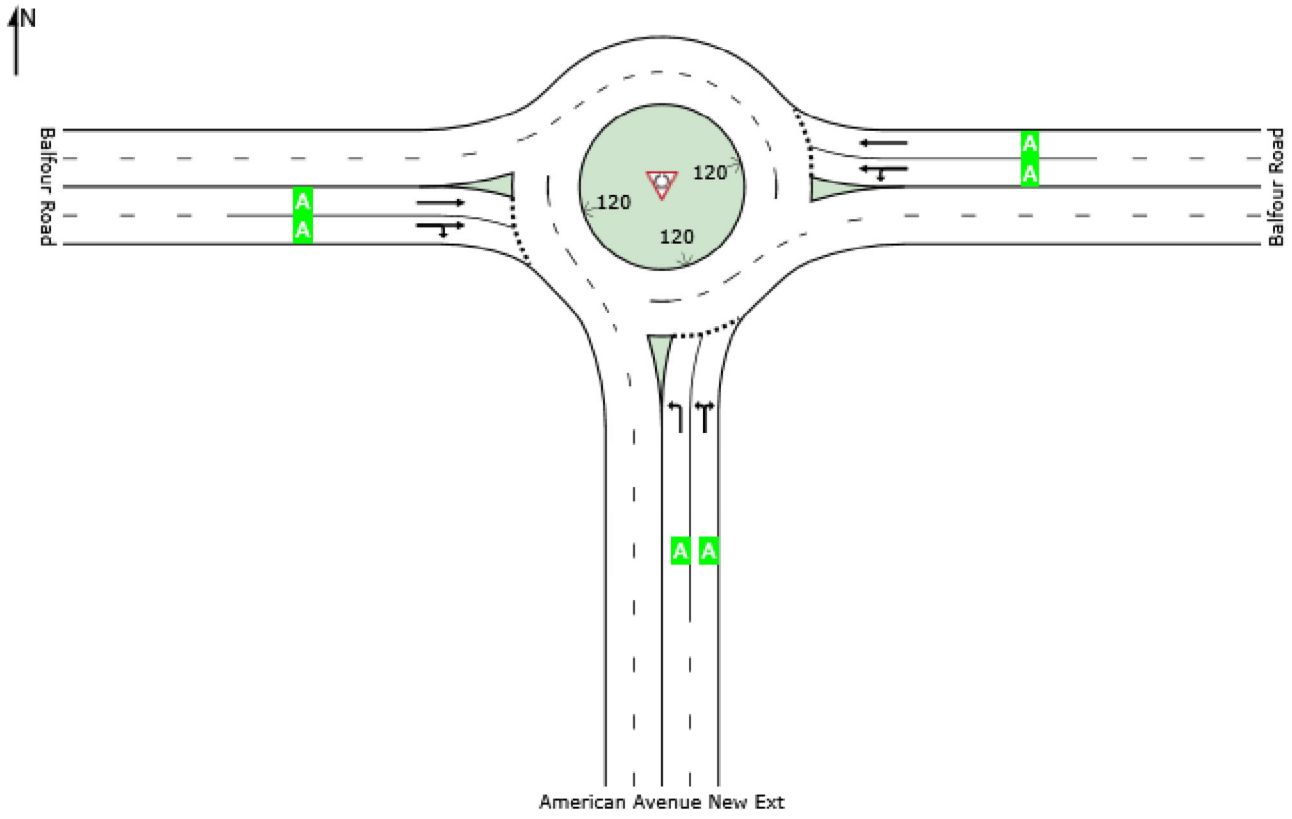
## Lane Level of Service

### Site: 7 [INT 7 - EX_PP_AM ]

Vineyards at DeerCreek TIA
Roundabout

**All Movement Classes**

| | South | East | West | Intersection |
|---|---|---|---|---|
| LOS | A | A | A | A |




Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

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# MOVEMENT SUMMARY

## Site: 7 [INT 7 - EX_PP_AM ]

Vineyards at DeerCreek TIA
Roundabout

| Movement Performance - Vehicles | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mov ID | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance ft | Prop. Queued | Effective Stop Rate per veh | Average Speed mph |
| South: American Avenue New Ext | | | | | | | | | | | |
| 3 | L2 | 65 | 3.0 | 0.076 | 4.9 | LOS A | 0.3 | 7.0 | 0.46 | 0.37 | 33.0 |
| 18 | R2 | 326 | 3.0 | 0.349 | 7.6 | LOS A | 1.5 | 39.0 | 0.54 | 0.50 | 33.0 |
| Approach | | 391 | 3.0 | 0.349 | 7.2 | LOS A | 1.5 | 39.0 | 0.53 | 0.48 | 33.0 |
| East: Balfour Road | | | | | | | | | | | |
| 1 | L2 | 326 | 3.0 | 0.376 | 6.6 | LOS A | 2.0 | 52.4 | 0.24 | 0.11 | 33.1 |
| 6 | T1 | 627 | 3.0 | 0.376 | 6.4 | LOS A | 2.0 | 52.4 | 0.23 | 0.10 | 34.6 |
| Approach | | 953 | 3.0 | 0.376 | 6.4 | LOS A | 2.0 | 52.4 | 0.23 | 0.11 | 34.1 |
| West: Balfour Road | | | | | | | | | | | |
| 2 | T1 | 443 | 3.0 | 0.331 | 7.1 | LOS A | 1.5 | 38.5 | 0.49 | 0.41 | 34.6 |
| 12 | R2 | 217 | 3.0 | 0.331 | 6.8 | LOS A | 1.5 | 37.9 | 0.48 | 0.39 | 33.5 |
| Approach | | 661 | 3.0 | 0.331 | 7.0 | LOS A | 1.5 | 38.5 | 0.49 | 0.40 | 34.3 |
| All Vehicles | | 2005 | 3.0 | 0.376 | 6.8 | LOS A | 2.0 | 52.4 | 0.37 | 0.28 | 33.9 |

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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# LANE LEVEL OF SERVICE

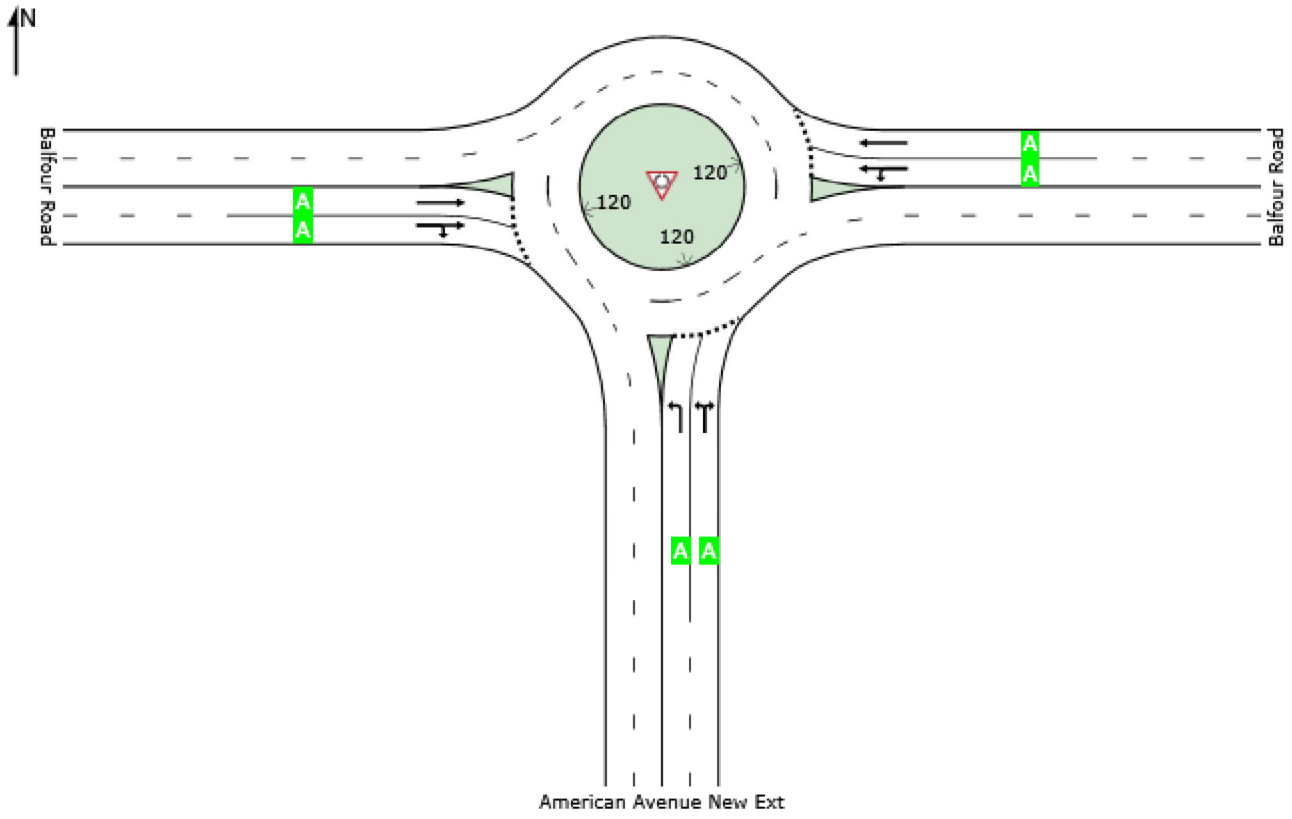
## Lane Level of Service

### Site: 7 [INT 7 - EX_PP_PM]

Vineyards at DeerCreek TIA
Roundabout

**All Movement Classes**

| | South | East | West | Intersection |
|---|---|---|---|---|
| LOS | A | A | A | A |




Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

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# MOVEMENT SUMMARY

## Site: 7 [INT 7 - EX_PP_PM]

Vineyards at DeerCreek TIA
Roundabout

| Movement Performance - Vehicles | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mov ID | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance ft | Prop. Queued | Effective Stop Rate per veh | Average Speed mph |
| South: American Avenue New Ext | | | | | | | | | | | |
| 3 | L2 | 54 | 3.0 | 0.079 | 6.1 | LOS A | 0.3 | 7.0 | 0.55 | 0.51 | 32.5 |
| 18 | R2 | 109 | 3.0 | 0.143 | 6.2 | LOS A | 0.5 | 13.0 | 0.55 | 0.54 | 33.7 |
| Approach | | 163 | 3.0 | 0.143 | 6.2 | LOS A | 0.5 | 13.0 | 0.55 | 0.53 | 33.3 |
| East: Balfour Road | | | | | | | | | | | |
| 1 | L2 | 1 | 3.0 | 0.213 | 4.7 | LOS A | 0.9 | 24.2 | 0.18 | 0.07 | 36.2 |
| 6 | T1 | 543 | 3.0 | 0.213 | 4.6 | LOS A | 0.9 | 24.2 | 0.17 | 0.07 | 36.0 |
| Approach | | 545 | 3.0 | 0.213 | 4.6 | LOS A | 0.9 | 24.2 | 0.17 | 0.07 | 36.0 |
| West: Balfour Road | | | | | | | | | | | |
| 2 | T1 | 679 | 3.0 | 0.253 | 4.9 | LOS A | 1.2 | 30.9 | 0.02 | 0.00 | 35.9 |
| 12 | R2 | 1 | 3.0 | 0.253 | 4.8 | LOS A | 1.2 | 30.0 | 0.02 | 0.00 | 34.7 |
| Approach | | 680 | 3.0 | 0.253 | 4.9 | LOS A | 1.2 | 30.9 | 0.02 | 0.00 | 35.9 |
| All Vehicles | | 1388 | 3.0 | 0.253 | 4.9 | LOS A | 1.2 | 30.9 | 0.14 | 0.09 | 35.6 |

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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# LANE LEVEL OF SERVICE

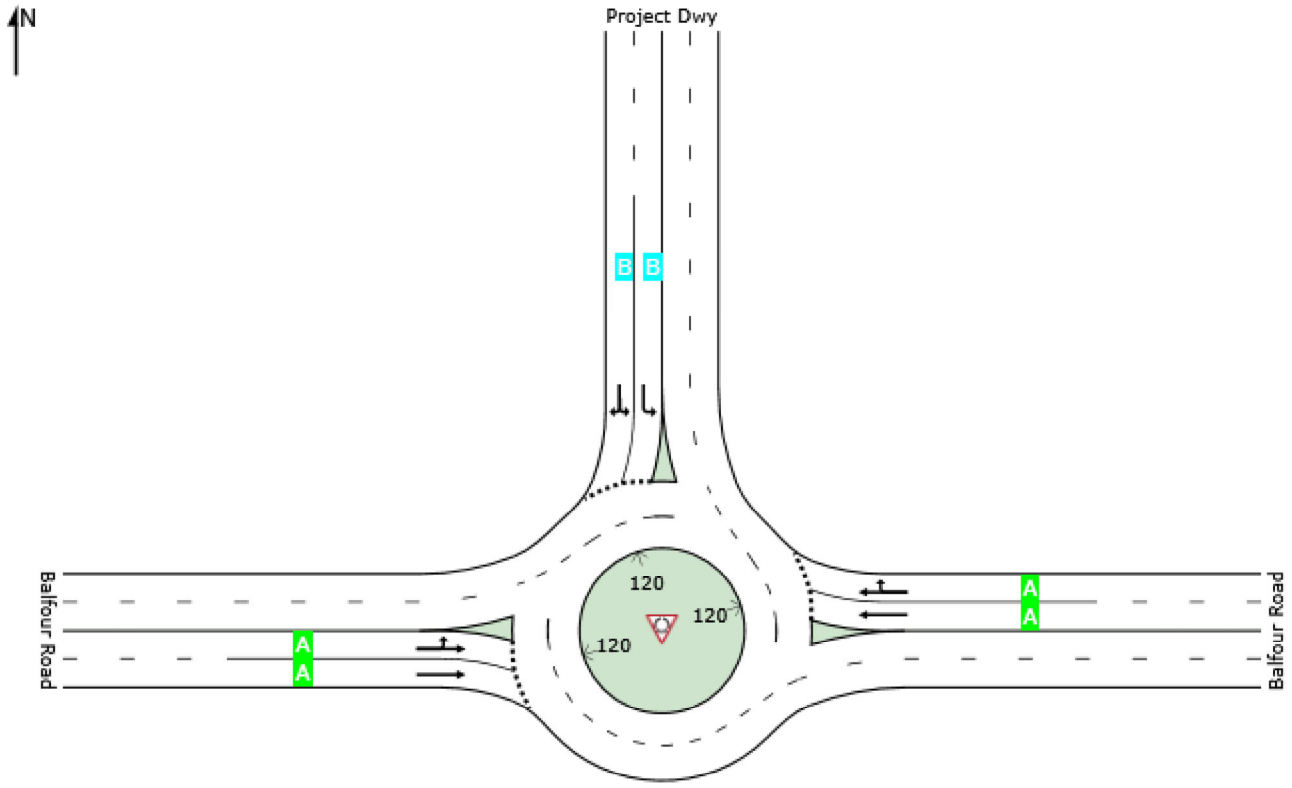
## Lane Level of Service

### Site: 7 [INT 8 - EX_PP_AM ]

Vineyards at DeerCreek TIA
Roundabout

**All Movement Classes**

| | East | North | West | Intersection |
|---|---|---|---|---|
| LOS | A | B | A | A |




Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

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# MOVEMENT SUMMARY

## Site: 7 [INT 8 - EX_PP_AM ]

Vineyards at DeerCreek TIA
Roundabout

| Movement Performance - Vehicles | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mov ID | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance ft | Prop. Queued | Effective Stop Rate per veh | Average Speed mph |
| East: Balfour Road | | | | | | | | | | | |
| 6 | T1 | 902 | 3.0 | 0.417 | 6.9 | LOS A | 2.4 | 62.5 | 0.20 | 0.08 | 34.8 |
| 16 | R2 | 175 | 3.0 | 0.417 | 6.7 | LOS A | 2.4 | 60.9 | 0.19 | 0.08 | 33.6 |
| Approach | | 1077 | 3.0 | 0.417 | 6.8 | LOS A | 2.4 | 62.5 | 0.20 | 0.08 | 34.6 |
| North: Project Dwy | | | | | | | | | | | |
| 7 | L2 | 447 | 3.0 | 0.421 | 12.6 | LOS B | 2.0 | 51.1 | 0.70 | 0.79 | 30.0 |
| 14 | R2 | 51 | 3.0 | 0.421 | 12.0 | LOS B | 2.0 | 51.1 | 0.69 | 0.78 | 29.4 |
| Approach | | 498 | 3.0 | 0.421 | 12.5 | LOS B | 2.0 | 51.1 | 0.70 | 0.79 | 30.0 |
| West: Balfour Road | | | | | | | | | | | |
| 5 | L2 | 43 | 3.0 | 0.430 | 9.5 | LOS A | 2.3 | 60.0 | 0.61 | 0.63 | 33.4 |
| 2 | T1 | 727 | 3.0 | 0.430 | 9.2 | LOS A | 2.3 | 60.0 | 0.60 | 0.61 | 33.5 |
| Approach | | 771 | 3.0 | 0.430 | 9.2 | LOS A | 2.3 | 60.0 | 0.60 | 0.61 | 33.5 |
| All Vehicles | | 2346 | 3.0 | 0.430 | 8.8 | LOS A | 2.4 | 62.5 | 0.44 | 0.40 | 33.1 |

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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# LANE LEVEL OF SERVICE

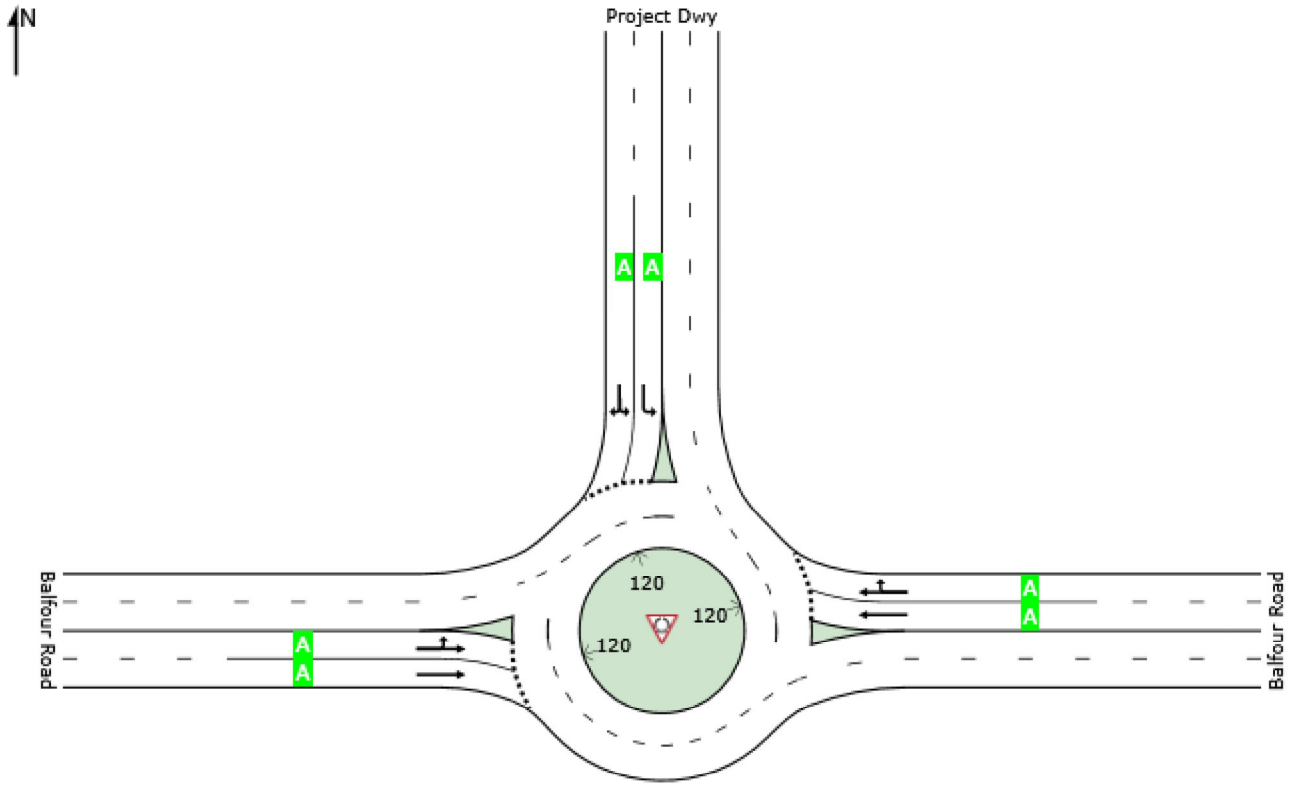
## Lane Level of Service

### Site: 7 [INT 8 - EX_PP_PM]

Vineyards at DeerCreek TIA
Roundabout

**All Movement Classes**

| | East | North | West | Intersection |
|---|---|---|---|---|
| LOS | A | A | A | A |




Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

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# MOVEMENT SUMMARY

## Site: 7 [INT 8 - EX_PP_PM]

Vineyards at DeerCreek TIA
Roundabout

| Movement Performance - Vehicles | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mov ID | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance ft | Prop. Queued | Effective Stop Rate per veh | Average Speed mph |
| East: Balfour Road | | | | | | | | | | | |
| 6 | T1 | 534 | 3.0 | 0.443 | 7.8 | LOS A | 2.5 | 64.9 | 0.38 | 0.23 | 34.3 |
| 16 | R2 | 523 | 3.0 | 0.443 | 7.5 | LOS A | 2.5 | 63.6 | 0.36 | 0.22 | 33.1 |
| Approach | | 1057 | 3.0 | 0.443 | 7.6 | LOS A | 2.5 | 64.9 | 0.37 | 0.23 | 33.7 |
| North: Project Dwy | | | | | | | | | | | |
| 7 | L2 | 43 | 3.0 | 0.055 | 5.1 | LOS A | 0.2 | 4.9 | 0.49 | 0.41 | 32.9 |
| 14 | R2 | 398 | 3.0 | 0.460 | 10.0 | LOS A | 2.7 | 69.1 | 0.63 | 0.71 | 31.9 |
| Approach | | 441 | 3.0 | 0.460 | 9.5 | LOS A | 2.7 | 69.1 | 0.62 | 0.68 | 32.0 |
| West: Balfour Road | | | | | | | | | | | |
| 5 | L2 | 132 | 3.0 | 0.284 | 5.4 | LOS A | 1.4 | 35.4 | 0.17 | 0.06 | 34.6 |
| 2 | T1 | 602 | 3.0 | 0.284 | 5.3 | LOS A | 1.4 | 35.4 | 0.16 | 0.06 | 35.2 |
| Approach | | 734 | 3.0 | 0.284 | 5.3 | LOS A | 1.4 | 35.4 | 0.16 | 0.06 | 35.1 |
| All Vehicles | | 2232 | 3.0 | 0.460 | 7.2 | LOS A | 2.7 | 69.1 | 0.35 | 0.26 | 33.8 |

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 116 | 77 | 0 | 0 | 55 | 126 | 0 | 0 | 0 | 255 | 0 | 31 |
| Future Volume (veh/h) | 116 | 77 | 0 | 0 | 55 | 126 | 0 | 0 | 0 | 255 | 0 | 31 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 126 | 84 | 0 | 0 | 60 | 137 | 0 | 0 | 0 | 277 | 0 | 34 |
| Adj No. of Lanes | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 172 | 988 | 0 | 2 | 229 | 205 | 2 | 1339 | 0 | 329 | 1090 | 975 |
| Arrive On Green | 0.10 | 0.28 | 0.00 | 0.00 | 0.13 | 0.12 | 0.00 | 0.00 | 0.00 | 0.19 | 0.00 | 0.61 |
| Sat Flow, veh/h | 1774 | 3632 | 0 | 1774 | 1770 | 1583 | 1774 | 3632 | 0 | 1774 | 1770 | 1583 |
| Grp Volume(v), veh/h | 126 | 84 | 0 | 0 | 60 | 137 | 0 | 0 | 0 | 277 | 0 | 34 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 0 | 1774 | 1770 | 1583 | 1774 | 1770 | 0 | 1774 | 1770 | 1583 |
| Q Serve(g_s), s | 5.3 | 1.3 | 0.0 | 0.0 | 2.3 | 6.3 | 0.0 | 0.0 | 0.0 | 11.5 | 0.0 | 0.7 |
| Cycle Q Clear(g_c), s | 5.3 | 1.3 | 0.0 | 0.0 | 2.3 | 6.3 | 0.0 | 0.0 | 0.0 | 11.5 | 0.0 | 0.7 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 172 | 988 | 0 | 2 | 229 | 205 | 2 | 1339 | 0 | 329 | 1090 | 975 |
| V/C Ratio(X) | 0.73 | 0.08 | 0.00 | 0.00 | 0.26 | 0.67 | 0.00 | 0.00 | 0.00 | 0.84 | 0.00 | 0.03 |
| Avail Cap(c_a), veh/h | 372 | 2087 | 0 | 372 | 1043 | 934 | 372 | 2180 | 0 | 372 | 1090 | 975 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 33.5 | 20.3 | 0.0 | 0.0 | 29.9 | 31.9 | 0.0 | 0.0 | 0.0 | 30.0 | 0.0 | 5.9 |
| Incr Delay (d2), s/veh | 5.8 | 0.0 | 0.0 | 0.0 | 0.6 | 3.7 | 0.0 | 0.0 | 0.0 | 14.6 | 0.0 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.9 | 0.7 | 0.0 | 0.0 | 1.2 | 3.0 | 0.0 | 0.0 | 0.0 | 7.0 | 0.0 | 0.3 |
| LnGrp Delay(d),s/veh | 39.3 | 20.3 | 0.0 | 0.0 | 30.5 | 35.6 | 0.0 | 0.0 | 0.0 | 44.6 | 0.0 | 5.9 |
| LnGrp LOS | D | C | | | C | D | | | | D | | A |
| Approach Vol, veh/h | | 210 | | | 197 | | | 0 | | | 311 | |
| Approach Delay, s/veh | | 31.7 | | | 34.1 | | | 0.0 | | | 40.4 | |
| Approach LOS | | C | | | C | | | | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 18.1 | 32.9 | 0.0 | 25.3 | 0.0 | 51.0 | 11.4 | 13.9 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 15.5 | 46.5 | 15.5 | 44.5 | 15.5 | 46.5 | 15.5 | 44.5 |
| Max Q Clear Time (g_c+I1), s | 13.5 | 0.0 | 0.0 | 3.3 | 0.0 | 2.7 | 7.3 | 8.3 |
| Green Ext Time (p_c), s | 0.2 | 0.0 | 0.0 | 0.5 | 0.0 | 0.1 | 0.2 | 1.1 |

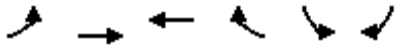
| Intersection Summary | | |
|---|---|---|
| HCM 2010 Ctrl Delay | | 36.1 |
| HCM 2010 LOS | | D |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 11 | 321 | 0 | 0 | 178 | 95 | 0 | 0 | 0 | 115 | 0 | 3 |
| Future Volume (veh/h) | 11 | 321 | 0 | 0 | 178 | 95 | 0 | 0 | 0 | 115 | 0 | 3 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 12 | 349 | 0 | 0 | 193 | 103 | 0 | 0 | 0 | 125 | 0 | 3 |
| Adj No. of Lanes | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 39 | 782 | 0 | 3 | 322 | 165 | 3 | 200 | 0 | 875 | 0 | 1041 |
| Arrive On Green | 0.02 | 0.22 | 0.00 | 0.00 | 0.14 | 0.13 | 0.00 | 0.00 | 0.00 | 0.49 | 0.00 | 0.66 |
| Sat Flow, veh/h | 1774 | 3632 | 0 | 1774 | 2268 | 1160 | 1774 | 1863 | 0 | 1774 | 0 | 1583 |
| Grp Volume(v), veh/h | 12 | 349 | 0 | 0 | 149 | 147 | 0 | 0 | 0 | 125 | 0 | 3 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 0 | 1774 | 1770 | 1658 | 1774 | 1863 | 0 | 1774 | 0 | 1583 |
| Q Serve(g_s), s | 0.5 | 6.0 | 0.0 | 0.0 | 5.5 | 5.9 | 0.0 | 0.0 | 0.0 | 2.7 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.5 | 6.0 | 0.0 | 0.0 | 5.5 | 5.9 | 0.0 | 0.0 | 0.0 | 2.7 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 0.70 | 1.00 | | 0.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 39 | 782 | 0 | 3 | 251 | 235 | 3 | 200 | 0 | 875 | 0 | 1041 |
| V/C Ratio(X) | 0.31 | 0.45 | 0.00 | 0.00 | 0.59 | 0.63 | 0.00 | 0.00 | 0.00 | 0.14 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 545 | 1745 | 0 | 532 | 873 | 818 | 532 | 879 | 0 | 875 | 0 | 1041 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 33.7 | 23.5 | 0.0 | 0.0 | 28.1 | 28.4 | 0.0 | 0.0 | 0.0 | 9.7 | 0.0 | 4.0 |
| Incr Delay (d2), s/veh | 4.4 | 0.4 | 0.0 | 0.0 | 2.2 | 2.7 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.3 | 3.0 | 0.0 | 0.0 | 2.8 | 2.8 | 0.0 | 0.0 | 0.0 | 1.4 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 38.0 | 23.9 | 0.0 | 0.0 | 30.4 | 31.2 | 0.0 | 0.0 | 0.0 | 10.0 | 0.0 | 4.0 |
| LnGrp LOS | D | C | | | C | C | | | | B | | A |
| Approach Vol, veh/h | | 361 | | | 296 | | | 0 | | | 128 | |
| Approach Delay, s/veh | | 24.4 | | | 30.8 | | | 0.0 | | | 9.9 | |
| Approach LOS | | C | | | C | | | | | | A | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 18.5 | 12.0 | 0.0 | 19.5 | 0.0 | 50.5 | 5.5 | 13.9 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 14.0 | 33.0 | 21.0 | 34.0 | 21.0 | 46.0 | 21.0 | 34.0 |
| Max Q Clear Time (g_c+I1), s | 4.7 | 0.0 | 0.0 | 8.0 | 0.0 | 2.0 | 2.5 | 7.9 |
| Green Ext Time (p_c), s | 0.3 | 0.0 | 0.0 | 2.1 | 0.0 | 0.0 | 0.0 | 1.6 |

| Intersection Summary | | |
|---|---|---|
| HCM 2010 Ctrl Delay | | 24.4 |
| HCM 2010 LOS | | C |



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 231 | 277 | 199 | 377 | 832 | 127 |
| Future Volume (veh/h) | 231 | 277 | 199 | 377 | 832 | 127 |
| Number | 5 | 2 | 6 | 16 | 3 | 18 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 296 | 355 | 255 | 483 | 1067 | 163 |
| Adj No. of Lanes | 1 | 3 | 2 | 1 | 2 | 1 |
| Peak Hour Factor | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 322 | 2930 | 1221 | 546 | 1118 | 514 |
| Arrive On Green | 0.18 | 0.58 | 0.34 | 0.34 | 0.32 | 0.32 |
| Sat Flow, veh/h | 1774 | 5253 | 3632 | 1583 | 3442 | 1583 |
| Grp Volume(v), veh/h | 296 | 355 | 255 | 483 | 1067 | 163 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1695 | 1770 | 1583 | 1721 | 1583 |
| Q Serve(g_s), s | 14.9 | 2.9 | 4.6 | 26.1 | 27.6 | 7.0 |
| Cycle Q Clear(g_c), s | 14.9 | 2.9 | 4.6 | 26.1 | 27.6 | 7.0 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 322 | 2930 | 1221 | 546 | 1118 | 514 |
| V/C Ratio(X) | 0.92 | 0.12 | 0.21 | 0.88 | 0.95 | 0.32 |
| Avail Cap(c_a), veh/h | 322 | 3992 | 1960 | 877 | 1118 | 514 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 36.5 | 8.8 | 21.0 | 28.0 | 30.0 | 23.1 |
| Incr Delay (d2), s/veh | 30.1 | 0.0 | 0.1 | 6.6 | 17.1 | 0.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 10.0 | 1.4 | 2.3 | 12.4 | 15.7 | 3.1 |
| LnGrp Delay(d),s/veh | 66.7 | 8.8 | 21.1 | 34.7 | 47.1 | 23.4 |
| LnGrp LOS | E | A | C | C | D | C |
| Approach Vol, veh/h | | 651 | 738 | | 1230 | |
| Approach Delay, s/veh | | 35.1 | 30.0 | | 44.0 | |
| Approach LOS | | D | C | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 56.8 | | | 21.0 | 35.8 | | 34.0 |
| Change Period (Y+Rc), s | | 4.5 | | | 4.5 | 4.5 | | 4.5 |
| Max Green Setting (Gmax), s | | 71.3 | | | 16.5 | 50.3 | | 29.5 |
| Max Q Clear Time (g_c+I1), s | | 4.9 | | | 16.9 | 28.1 | | 29.6 |
| Green Ext Time (p_c), s | | 2.4 | | | 0.0 | 3.2 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 37.8 |
| HCM 2010 LOS | D |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 208 | 938 | 0 | 0 | 375 | 1108 | 147 | 3 | 151 | 0 | 0 | 0 |
| Future Volume (veh/h) | 208 | 938 | 0 | 0 | 375 | 1108 | 147 | 3 | 151 | 0 | 0 | 0 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 7 | 4 | 14 | | | |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | | | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 0 | 0 | 1863 | 1863 | 1863 | 1863 | 1863 | | | |
| Adj Flow Rate, veh/h | 234 | 1054 | 0 | 0 | 421 | 1245 | 167 | 0 | 170 | | | |
| Adj No. of Lanes | 2 | 3 | 0 | 0 | 1 | 2 | 2 | 0 | 1 | | | |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | | | |
| Percent Heavy Veh, % | 2 | 2 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | | | |
| Cap, veh/h | 357 | 3445 | 0 | 0 | 949 | 1614 | 541 | 0 | 242 | | | |
| Arrive On Green | 0.10 | 0.68 | 0.00 | 0.00 | 0.51 | 0.51 | 0.15 | 0.00 | 0.15 | | | |
| Sat Flow, veh/h | 3442 | 5253 | 0 | 0 | 1863 | 3167 | 3548 | 0 | 1583 | | | |
| Grp Volume(v), veh/h | 234 | 1054 | 0 | 0 | 421 | 1245 | 167 | 0 | 170 | | | |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1695 | 0 | 0 | 1863 | 1583 | 1774 | 0 | 1583 | | | |
| Q Serve(g_s), s | 4.1 | 5.3 | 0.0 | 0.0 | 8.9 | 19.8 | 2.6 | 0.0 | 6.4 | | | |
| Cycle Q Clear(g_c), s | 4.1 | 5.3 | 0.0 | 0.0 | 8.9 | 19.8 | 2.6 | 0.0 | 6.4 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 1.00 | 1.00 | | 1.00 | | | |
| Lane Grp Cap(c), veh/h | 357 | 3445 | 0 | 0 | 949 | 1614 | 541 | 0 | 242 | | | |
| V/C Ratio(X) | 0.65 | 0.31 | 0.00 | 0.00 | 0.44 | 0.77 | 0.31 | 0.00 | 0.70 | | | |
| Avail Cap(c_a), veh/h | 883 | 6008 | 0 | 0 | 1604 | 2726 | 2599 | 0 | 1160 | | | |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | | | |
| Uniform Delay (d), s/veh | 26.9 | 4.1 | 0.0 | 0.0 | 9.7 | 12.4 | 23.5 | 0.0 | 25.1 | | | |
| Incr Delay (d2), s/veh | 2.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.8 | 0.3 | 0.0 | 3.7 | | | |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| %ile BackOfQ(50%),veh/ln | 2.1 | 2.5 | 0.0 | 0.0 | 4.6 | 8.7 | 1.3 | 0.0 | 5.7 | | | |
| LnGrp Delay(d),s/veh | 28.9 | 4.1 | 0.0 | 0.0 | 10.0 | 13.2 | 23.8 | 0.0 | 28.8 | | | |
| LnGrp LOS | C | A | | | B | B | C | | C | | | |
| Approach Vol, veh/h | | 1288 | | | 1666 | | | 337 | | | | |
| Approach Delay, s/veh | | 8.6 | | | 12.4 | | | 26.3 | | | | |
| Approach LOS | | A | | | B | | | C | | | | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | |
| Phs Duration (G+Y+Rc), s | | 47.6 | | 14.8 | 10.5 | 37.1 | | |
| Change Period (Y+Rc), s | | 5.3 | | 5.3 | 4.0 | 5.3 | | |
| Max Green Setting (Gmax), s | | 73.7 | | 45.7 | 16.0 | 53.7 | | |
| Max Q Clear Time (g_c+I1), s | | 7.3 | | 8.4 | 6.1 | 21.8 | | |
| Green Ext Time (p_c), s | | 8.6 | | 1.2 | 0.5 | 10.0 | | |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 12.3 |
| HCM 2010 LOS | B |

Notes

| Intersection | |
|---|---|
| Int Delay, s/veh | 20.1 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 94 | 353 | 24 | 47 | 384 | 64 |
| Future Vol, veh/h | 94 | 353 | 24 | 47 | 384 | 64 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 100 | 376 | 26 | 50 | 409 | 68 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 937 | 51 | 0 | 0 | 76 | 0 |
| Stage 1 | 51 | - | - | - | - | - |
| Stage 2 | 886 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 294 | 1017 | - | - | 1523 | - |
| Stage 1 | 971 | - | - | - | - | - |
| Stage 2 | 403 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 212 | 1017 | - | - | 1523 | - |
| Mov Cap-2 Maneuver | 212 | - | - | - | - | - |
| Stage 1 | 700 | - | - | - | - | - |
| Stage 2 | 403 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 36.4 | 0 | 7.1 |
| HCM LOS | E | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 565 | 1523 | - |
| HCM Lane V/C Ratio | - | - | 0.842 | 0.268 | - |
| HCM Control Delay (s) | - | - | 36.4 | 8.2 | 0 |
| HCM Lane LOS | - | - | E | A | A |
| HCM 95th %tile Q(veh) | - | - | 8.9 | 1.1 | - |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 14 | 230 | 338 | 903 | 450 | 93 | 134 | 257 | 719 | 72 | 491 | 7 |
| Future Volume (veh/h) | 14 | 230 | 338 | 903 | 450 | 93 | 134 | 257 | 719 | 72 | 491 | 7 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.94 | 1.00 | | 0.96 | 1.00 | | 0.50 | 1.00 | | 0.56 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 15 | 247 | 312 | 971 | 484 | 92 | 144 | 276 | 517 | 77 | 528 | 7 |
| Adj No. of Lanes | 1 | 2 | 0 | 2 | 2 | 0 | 1 | 1 | 2 | 1 | 1 | 0 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 28 | 366 | 309 | 989 | 1411 | 266 | 170 | 604 | 1253 | 98 | 521 | 7 |
| Arrive On Green | 0.02 | 0.21 | 0.21 | 0.29 | 0.48 | 0.48 | 0.10 | 0.32 | 0.32 | 0.06 | 0.29 | 0.29 |
| Sat Flow, veh/h | 1774 | 1770 | 1494 | 3442 | 2949 | 557 | 1774 | 1863 | 1392 | 1774 | 1812 | 24 |
| Grp Volume(v), veh/h | 15 | 247 | 312 | 971 | 289 | 287 | 144 | 276 | 517 | 77 | 0 | 535 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1494 | 1721 | 1770 | 1737 | 1774 | 1863 | 696 | 1774 | 0 | 1836 |
| Q Serve(g_s), s | 1.2 | 18.4 | 29.5 | 39.9 | 14.5 | 14.7 | 11.4 | 16.8 | 32.7 | 6.1 | 0.0 | 41.0 |
| Cycle Q Clear(g_c), s | 1.2 | 18.4 | 29.5 | 39.9 | 14.5 | 14.7 | 11.4 | 16.8 | 32.7 | 6.1 | 0.0 | 41.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.32 | 1.00 | | 1.00 | 1.00 | | 0.01 |
| Lane Grp Cap(c), veh/h | 28 | 366 | 309 | 989 | 847 | 831 | 170 | 604 | 1253 | 98 | 0 | 528 |
| V/C Ratio(X) | 0.54 | 0.67 | 1.01 | 0.98 | 0.34 | 0.35 | 0.85 | 0.46 | 0.41 | 0.79 | 0.00 | 1.01 |
| Avail Cap(c_a), veh/h | 137 | 366 | 309 | 989 | 847 | 831 | 323 | 604 | 1253 | 317 | 0 | 528 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 69.7 | 52.1 | 56.6 | 50.4 | 23.2 | 23.2 | 63.5 | 38.2 | 17.1 | 66.6 | 0.0 | 50.8 |
| Incr Delay (d2), s/veh | 15.2 | 5.1 | 53.7 | 24.1 | 0.3 | 0.3 | 11.1 | 0.5 | 0.2 | 12.9 | 0.0 | 42.7 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.7 | 9.5 | 16.7 | 22.3 | 7.1 | 7.1 | 6.1 | 8.7 | 6.3 | 3.3 | 0.0 | 26.9 |
| LnGrp Delay(d),s/veh | 84.9 | 57.3 | 110.4 | 74.5 | 23.5 | 23.5 | 74.6 | 38.8 | 17.3 | 79.5 | 0.0 | 93.5 |
| LnGrp LOS | F | E | F | E | C | C | E | D | B | E | | F |
| Approach Vol, veh/h | | 574 | | | 1547 | | | 937 | | | 612 | |
| Approach Delay, s/veh | | 86.8 | | | 55.5 | | | 32.4 | | | 91.7 | |
| Approach LOS | | F | | | E | | | C | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 15.0 | 35.0 | 17.6 | 45.0 | 6.2 | 73.8 | 12.4 | 50.3 |
| Change Period (Y+Rc), s | 4.0 | 5.5 | 4.0 | 4.0 | 4.0 | 5.5 | 4.5 | 4.0 |
| Max Green Setting (Gmax), s | 11.0 | 29.5 | 26.0 | 41.0 | 11.0 | 54.5 | 25.5 | 36.0 |
| Max Q Clear Time (g_c+I1), s | 11.9 | 31.5 | 13.4 | 43.0 | 3.2 | 16.7 | 8.1 | 34.7 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 4.3 | 0.1 | 0.8 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 60.6 |
| HCM 2010 LOS | E |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.8 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 983 | 35 | 13 | 1446 | 23 | 75 |
| Future Vol, veh/h | 983 | 35 | 13 | 1446 | 23 | 75 |
| Conflicting Peds, #/hr | 0 | 1 | 1 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 150 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 93 | 93 | 93 | 93 | 93 | 93 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1057 | 38 | 14 | 1555 | 25 | 81 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 1096 | 0 | 1883 | 549 |
| Stage 1 | - | - | - | - | 1077 | - |
| Stage 2 | - | - | - | - | 806 | - |
| Critical Hdwy | - | - | 4.14 | - | 6.84 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 | - |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 | 3.32 |
| Pot Cap-1 Maneuver | - | - | 633 | - | 63 | 480 |
| Stage 1 | - | - | - | - | 288 | - |
| Stage 2 | - | - | - | - | 400 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 632 | - | 62 | 480 |
| Mov Cap-2 Maneuver | - | - | - | - | 62 | - |
| Stage 1 | - | - | - | - | 281 | - |
| Stage 2 | - | - | - | - | 400 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.1 | 47 |
| HCM LOS | | | E |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 186 | - | - | 632 | - |
| HCM Lane V/C Ratio | 0.567 | - | - | 0.022 | - |
| HCM Control Delay (s) | 47 | - | - | 10.8 | - |
| HCM Lane LOS | E | - | - | B | - |
| HCM 95th %tile Q(veh) | 3 | - | - | 0.1 | - |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 72 | 896 | 110 | 38 | 1044 | 53 | 214 | 104 | 71 | 164 | 126 | 229 |
| Future Volume (veh/h) | 72 | 896 | 110 | 38 | 1044 | 53 | 214 | 104 | 71 | 164 | 126 | 229 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.98 | 1.00 | | 1.00 | 1.00 | | 0.99 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 81 | 1007 | 118 | 43 | 1173 | 60 | 240 | 117 | -1 | 184 | 142 | 193 |
| Adj No. of Lanes | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 102 | 1196 | 140 | 215 | 1533 | 78 | 259 | 453 | 385 | 209 | 153 | 208 |
| Arrive On Green | 0.06 | 0.37 | 0.37 | 0.12 | 0.45 | 0.45 | 0.15 | 0.24 | 0.00 | 0.12 | 0.22 | 0.22 |
| Sat Flow, veh/h | 1774 | 3191 | 374 | 1774 | 3421 | 175 | 1774 | 1863 | 1583 | 1774 | 712 | 968 |
| Grp Volume(v), veh/h | 81 | 558 | 567 | 43 | 606 | 627 | 240 | 117 | -1 | 184 | 0 | 335 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1796 | 1774 | 1770 | 1827 | 1774 | 1863 | 1583 | 1774 | 0 | 1681 |
| Q Serve(g_s), s | 5.9 | 37.5 | 37.5 | 2.8 | 37.4 | 37.5 | 17.4 | 6.6 | 0.0 | 13.3 | 0.0 | 25.4 |
| Cycle Q Clear(g_c), s | 5.9 | 37.5 | 37.5 | 2.8 | 37.4 | 37.5 | 17.4 | 6.6 | 0.0 | 13.3 | 0.0 | 25.4 |
| Prop In Lane | 1.00 | | 0.21 | 1.00 | | 0.10 | 1.00 | | 1.00 | 1.00 | | 0.58 |
| Lane Grp Cap(c), veh/h | 102 | 663 | 673 | 215 | 793 | 819 | 259 | 453 | 385 | 209 | 0 | 362 |
| V/C Ratio(X) | 0.80 | 0.84 | 0.84 | 0.20 | 0.76 | 0.77 | 0.93 | 0.26 | 0.00 | 0.88 | 0.00 | 0.93 |
| Avail Cap(c_a), veh/h | 150 | 663 | 673 | 218 | 793 | 819 | 259 | 453 | 385 | 259 | 0 | 375 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.87 | 0.87 | 0.87 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 60.5 | 37.1 | 37.1 | 51.5 | 30.1 | 30.1 | 54.8 | 39.7 | 0.0 | 56.4 | 0.0 | 50.0 |
| Incr Delay (d2), s/veh | 9.6 | 12.3 | 12.2 | 0.1 | 6.0 | 5.9 | 36.0 | 0.4 | 0.0 | 21.0 | 0.0 | 28.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.2 | 20.6 | 20.9 | 1.4 | 19.5 | 20.1 | 11.1 | 3.4 | 0.0 | 7.7 | 0.0 | 14.7 |
| LnGrp Delay(d),s/veh | 70.1 | 49.5 | 49.4 | 51.6 | 36.2 | 36.0 | 90.8 | 40.1 | 0.0 | 77.4 | 0.0 | 78.6 |
| LnGrp LOS | E | D | D | D | D | D | F | D | | E | | E |
| Approach Vol, veh/h | | 1206 | | | 1276 | | | 356 | | | 519 | |
| Approach Delay, s/veh | | 50.8 | | | 36.6 | | | 74.4 | | | 78.2 | |
| Approach LOS | | D | | | D | | | E | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 21.0 | 54.0 | 23.0 | 32.0 | 11.5 | 63.6 | 19.3 | 35.6 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 4.0 | 4.0 | 4.0 | 5.3 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 16.0 | * 49 | 19.0 | 29.0 | 11.0 | 53.7 | 19.0 | 29.0 |
| Max Q Clear Time (g_c+I1), s | 4.8 | 39.5 | 19.4 | 27.4 | 7.9 | 39.5 | 15.3 | 8.6 |
| Green Ext Time (p_c), s | 0.0 | 8.2 | 0.0 | 0.4 | 0.0 | 12.8 | 0.1 | 0.8 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 52.1 |
| HCM 2010 LOS | D |

Notes



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 37 | 1000 | 96 | 127 | 1063 | 68 | 53 | 11 | 77 | 25 | 7 | 20 |
| Future Volume (veh/h) | 37 | 1000 | 96 | 127 | 1063 | 68 | 53 | 11 | 77 | 25 | 7 | 20 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 41 | 1111 | 73 | 141 | 1181 | 62 | 59 | 12 | 47 | 28 | 8 | 5 |
| Adj No. of Lanes | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 605 | 2475 | 1107 | 194 | 1435 | 642 | 138 | 139 | 118 | 61 | 34 | 21 |
| Arrive On Green | 0.68 | 1.00 | 1.00 | 0.06 | 0.41 | 0.41 | 0.08 | 0.07 | 0.07 | 0.03 | 0.03 | 0.03 |
| Sat Flow, veh/h | 1774 | 3539 | 1583 | 3442 | 3539 | 1583 | 1774 | 1863 | 1583 | 1774 | 1073 | 671 |
| Grp Volume(v), veh/h | 41 | 1111 | 73 | 141 | 1181 | 62 | 59 | 12 | 47 | 28 | 0 | 13 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1583 | 1721 | 1770 | 1583 | 1774 | 1863 | 1583 | 1774 | 0 | 1744 |
| Q Serve(g_s), s | 1.0 | 0.0 | 0.0 | 5.2 | 38.7 | 2.6 | 4.1 | 0.8 | 3.7 | 2.0 | 0.0 | 0.9 |
| Cycle Q Clear(g_c), s | 1.0 | 0.0 | 0.0 | 5.2 | 38.7 | 2.6 | 4.1 | 0.8 | 3.7 | 2.0 | 0.0 | 0.9 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.38 |
| Lane Grp Cap(c), veh/h | 605 | 2475 | 1107 | 194 | 1435 | 642 | 138 | 139 | 118 | 61 | 0 | 55 |
| V/C Ratio(X) | 0.07 | 0.45 | 0.07 | 0.73 | 0.82 | 0.10 | 0.43 | 0.09 | 0.40 | 0.46 | 0.00 | 0.24 |
| Avail Cap(c_a), veh/h | 605 | 2475 | 1107 | 421 | 1435 | 642 | 176 | 587 | 499 | 108 | 0 | 483 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.57 | 0.57 | 0.57 | 0.78 | 0.78 | 0.78 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 13.8 | 0.0 | 0.0 | 60.4 | 34.5 | 16.1 | 57.2 | 56.0 | 57.4 | 61.6 | 0.0 | 61.4 |
| Incr Delay (d2), s/veh | 0.0 | 0.3 | 0.1 | 1.5 | 4.3 | 0.2 | 0.8 | 0.1 | 0.8 | 2.0 | 0.0 | 0.8 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.5 | 0.1 | 0.0 | 2.5 | 19.7 | 1.2 | 2.0 | 0.4 | 1.6 | 1.0 | 0.0 | 0.5 |
| LnGrp Delay(d),s/veh | 13.8 | 0.3 | 0.1 | 61.9 | 38.8 | 16.3 | 57.9 | 56.1 | 58.2 | 63.6 | 0.0 | 62.2 |
| LnGrp LOS | B | A | A | E | D | B | E | E | E | E | | E |
| Approach Vol, veh/h | | 1225 | | | 1384 | | | 118 | | | 41 | |
| Approach Delay, s/veh | | 0.8 | | | 40.1 | | | 57.9 | | | 63.2 | |
| Approach LOS | | A | | | D | | | E | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 11.4 | 96.2 | 14.2 | 8.1 | 49.7 | 58.0 | 8.6 | 13.8 |
| Change Period (Y+Rc), s | 4.1 | 5.3 | 4.1 | 4.0 | 5.3 | * 5.3 | 4.1 | * 4.1 |
| Max Green Setting (Gmax), s | 15.3 | 47.7 | 12.9 | 36.0 | 10.9 | * 53 | 7.9 | * 41 |
| Max Q Clear Time (g_c+I1), s | 7.2 | 2.0 | 6.1 | 2.9 | 3.0 | 40.7 | 4.0 | 5.7 |
| Green Ext Time (p_c), s | 0.1 | 34.3 | 0.0 | 0.0 | 0.0 | 10.9 | 0.0 | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 23.8 |
| HCM 2010 LOS | C |

Notes

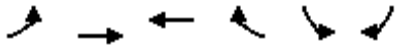


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 45 | 1040 | 16 | 361 | 1169 | 32 | 4 | 32 | 337 | 103 | 29 | 39 |
| Future Volume (veh/h) | 45 | 1040 | 16 | 361 | 1169 | 32 | 4 | 32 | 337 | 103 | 29 | 39 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 51 | 1169 | 9 | 406 | 1313 | 35 | 4 | 36 | 98 | 116 | 33 | 2 |
| Adj No. of Lanes | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 481 | 2049 | 916 | 424 | 1489 | 665 | 157 | 192 | 163 | 109 | 133 | 8 |
| Arrive On Green | 0.54 | 1.00 | 1.00 | 0.12 | 0.42 | 0.42 | 0.09 | 0.10 | 0.10 | 0.06 | 0.08 | 0.08 |
| Sat Flow, veh/h | 1774 | 3539 | 1583 | 3442 | 3539 | 1581 | 1774 | 1863 | 1579 | 1774 | 1738 | 105 |
| Grp Volume(v), veh/h | 51 | 1169 | 9 | 406 | 1313 | 35 | 4 | 36 | 98 | 116 | 0 | 35 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1583 | 1721 | 1770 | 1581 | 1774 | 1863 | 1579 | 1774 | 0 | 1844 |
| Q Serve(g_s), s | 1.8 | 0.0 | 0.0 | 15.2 | 44.4 | 1.3 | 0.3 | 2.3 | 7.7 | 8.0 | 0.0 | 2.3 |
| Cycle Q Clear(g_c), s | 1.8 | 0.0 | 0.0 | 15.2 | 44.4 | 1.3 | 0.3 | 2.3 | 7.7 | 8.0 | 0.0 | 2.3 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.06 |
| Lane Grp Cap(c), veh/h | 481 | 2049 | 916 | 424 | 1489 | 665 | 157 | 192 | 163 | 109 | 0 | 141 |
| V/C Ratio(X) | 0.11 | 0.57 | 0.01 | 0.96 | 0.88 | 0.05 | 0.03 | 0.19 | 0.60 | 1.06 | 0.00 | 0.25 |
| Avail Cap(c_a), veh/h | 481 | 2049 | 916 | 424 | 1489 | 665 | 157 | 602 | 510 | 109 | 0 | 596 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.89 | 0.89 | 0.89 | 0.82 | 0.82 | 0.82 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 22.1 | 0.0 | 0.0 | 56.7 | 34.7 | 13.2 | 54.1 | 53.3 | 55.7 | 61.0 | 0.0 | 56.5 |
| Incr Delay (d2), s/veh | 0.0 | 1.0 | 0.0 | 29.2 | 6.6 | 0.1 | 0.0 | 0.2 | 1.3 | 104.0 | 0.0 | 0.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.9 | 0.3 | 0.0 | 9.0 | 23.1 | 0.6 | 0.1 | 1.2 | 3.4 | 7.1 | 0.0 | 1.2 |
| LnGrp Delay(d),s/veh | 22.1 | 1.0 | 0.0 | 85.8 | 41.3 | 13.4 | 54.2 | 53.5 | 57.0 | 165.3 | 0.0 | 56.9 |
| LnGrp LOS | C | A | A | F | D | B | D | D | E | F | | E |
| Approach Vol, veh/h | | 1229 | | | 1754 | | | 138 | | | 151 | |
| Approach Delay, s/veh | | 1.9 | | | 51.0 | | | 56.0 | | | 140.2 | |
| Approach LOS | | A | | | D | | | E | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 20.0 | 80.6 | 15.5 | 13.9 | 40.6 | 60.0 | 12.0 | 17.4 |
| Change Period (Y+Rc), s | 4.0 | 5.3 | 4.0 | 4.0 | 5.3 | * 5.3 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 16.0 | 46.7 | 8.0 | 42.0 | 8.0 | * 55 | 8.0 | 42.0 |
| Max Q Clear Time (g_c+I1), s | 17.2 | 2.0 | 2.3 | 4.3 | 3.8 | 46.4 | 10.0 | 9.7 |
| Green Ext Time (p_c), s | 0.0 | 5.9 | 0.0 | 0.1 | 0.0 | 3.9 | 0.0 | 0.3 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 36.9 |
| HCM 2010 LOS | D |

Notes



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 203 | 1278 | 756 | 84 | 403 | 807 |
| Future Volume (veh/h) | 203 | 1278 | 756 | 84 | 403 | 807 |
| Number | 7 | 4 | 8 | 18 | 1 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 228 | 1436 | 849 | 0 | 453 | 609 |
| Adj No. of Lanes | 2 | 2 | 3 | 1 | 1 | 2 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 289 | 1647 | 1747 | 544 | 816 | 1281 |
| Arrive On Green | 0.08 | 0.47 | 0.34 | 0.00 | 0.46 | 0.46 |
| Sat Flow, veh/h | 3442 | 3632 | 5253 | 1583 | 1774 | 2787 |
| Grp Volume(v), veh/h | 228 | 1436 | 849 | 0 | 453 | 609 |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1770 | 1695 | 1583 | 1774 | 1393 |
| Q Serve(g_s), s | 7.8 | 43.8 | 15.8 | 0.0 | 22.2 | 18.1 |
| Cycle Q Clear(g_c), s | 7.8 | 43.8 | 15.8 | 0.0 | 22.2 | 18.1 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 289 | 1647 | 1747 | 544 | 816 | 1281 |
| V/C Ratio(X) | 0.79 | 0.87 | 0.49 | 0.00 | 0.56 | 0.48 |
| Avail Cap(c_a), veh/h | 416 | 1932 | 1971 | 614 | 816 | 1281 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.62 | 0.62 | 1.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 53.9 | 28.9 | 31.0 | 0.0 | 23.5 | 22.4 |
| Incr Delay (d2), s/veh | 4.0 | 2.6 | 0.2 | 0.0 | 0.8 | 0.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.9 | 21.9 | 7.4 | 0.0 | 11.0 | 15.6 |
| LnGrp Delay(d),s/veh | 57.9 | 31.5 | 31.2 | 0.0 | 24.3 | 22.7 |
| LnGrp LOS | E | C | C | | C | C |
| Approach Vol, veh/h | | 1664 | 849 | | 1062 | |
| Approach Delay, s/veh | | 35.1 | 31.2 | | 23.4 | |
| Approach LOS | | D | C | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | | | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | | | 60.3 | | 59.7 | 14.6 | 45.7 |
| Change Period (Y+Rc), s | | | | 4.5 | | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | | | | 65.5 | | 45.5 | 14.5 | 46.5 |
| Max Q Clear Time (g_c+I1), s | | | | 45.8 | | 24.2 | 9.8 | 17.8 |
| Green Ext Time (p_c), s | | | | 10.0 | | 3.8 | 0.3 | 5.9 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 30.7 |
| HCM 2010 LOS | C |



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 1050 | 631 | 0 | 1460 | 102 | 35 |
| Future Volume (veh/h) | 1050 | 631 | 0 | 1460 | 102 | 35 |
| Number | 4 | 14 | 3 | 8 | 5 | 12 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 0 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 1082 | 651 | 0 | 1505 | 105 | 36 |
| Adj No. of Lanes | 2 | 1 | 0 | 2 | 2 | 1 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 2 | 2 | 0 | 2 | 2 | 2 |
| Cap, veh/h | 1793 | 800 | 0 | 1793 | 1440 | 663 |
| Arrive On Green | 0.51 | 0.51 | 0.00 | 0.51 | 0.42 | 0.42 |
| Sat Flow, veh/h | 3632 | 1580 | 0 | 3725 | 3442 | 1583 |
| Grp Volume(v), veh/h | 1082 | 651 | 0 | 1505 | 105 | 36 |
| Grp Sat Flow(s),veh/h/ln | 1770 | 1580 | 0 | 1770 | 1721 | 1583 |
| Q Serve(g_s), s | 26.1 | 41.5 | 0.0 | 43.8 | 2.2 | 1.6 |
| Cycle Q Clear(g_c), s | 26.1 | 41.5 | 0.0 | 43.8 | 2.2 | 1.6 |
| Prop In Lane | | 1.00 | 0.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 1793 | 800 | 0 | 1793 | 1440 | 663 |
| V/C Ratio(X) | 0.60 | 0.81 | 0.00 | 0.84 | 0.07 | 0.05 |
| Avail Cap(c_a), veh/h | 2610 | 1165 | 0 | 2610 | 1440 | 663 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.86 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 21.0 | 24.8 | 0.0 | 25.4 | 20.9 | 20.8 |
| Incr Delay (d2), s/veh | 0.3 | 2.9 | 0.0 | 1.5 | 0.1 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 12.7 | 18.7 | 0.0 | 21.7 | 1.1 | 0.7 |
| LnGrp Delay(d),s/veh | 21.4 | 27.8 | 0.0 | 26.9 | 21.0 | 20.9 |
| LnGrp LOS | C | C | | C | C | C |
| Approach Vol, veh/h | 1733 | | | 1505 | 141 | |
| Approach Delay, s/veh | 23.8 | | | 26.9 | 21.0 | |
| Approach LOS | C | | | C | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | | | 8 |
| Phs Duration (G+Y+Rc), s | | 54.7 | | 65.3 | | | | 65.3 |
| Change Period (Y+Rc), s | | 4.5 | | 4.5 | | | | 4.5 |
| Max Green Setting (Gmax), s | | 22.5 | | 88.5 | | | | 88.5 |
| Max Q Clear Time (g_c+I1), s | | 4.2 | | 43.5 | | | | 45.8 |
| Green Ext Time (p_c), s | | 0.4 | | 13.6 | | | | 15.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 25.0 |
| HCM 2010 LOS | C |



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 1055 | 30 | 22 | 1420 | 40 | 18 |
| Future Volume (veh/h) | 1055 | 30 | 22 | 1420 | 40 | 18 |
| Number | 2 | 12 | 1 | 6 | 7 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 1172 | 26 | 24 | 1578 | 44 | 10 |
| Adj No. of Lanes | 2 | 1 | 1 | 2 | 1 | 1 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 2865 | 1281 | 40 | 3053 | 117 | 104 |
| Arrive On Green | 0.81 | 0.81 | 0.02 | 0.86 | 0.07 | 0.07 |
| Sat Flow, veh/h | 3632 | 1582 | 1774 | 3632 | 1774 | 1583 |
| Grp Volume(v), veh/h | 1172 | 26 | 24 | 1578 | 44 | 10 |
| Grp Sat Flow(s),veh/h/ln | 1770 | 1582 | 1774 | 1770 | 1774 | 1583 |
| Q Serve(g_s), s | 12.3 | 0.4 | 1.7 | 14.4 | 3.1 | 0.8 |
| Cycle Q Clear(g_c), s | 12.3 | 0.4 | 1.7 | 14.4 | 3.1 | 0.8 |
| Prop In Lane | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 2865 | 1281 | 40 | 3053 | 117 | 104 |
| V/C Ratio(X) | 0.41 | 0.02 | 0.61 | 0.52 | 0.38 | 0.10 |
| Avail Cap(c_a), veh/h | 2865 | 1281 | 150 | 3053 | 368 | 329 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.88 | 0.88 | 0.63 | 0.63 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 3.5 | 2.4 | 63.0 | 2.2 | 58.1 | 57.1 |
| Incr Delay (d2), s/veh | 0.4 | 0.0 | 3.5 | 0.4 | 0.7 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 6.0 | 0.2 | 0.9 | 7.0 | 1.5 | 0.3 |
| LnGrp Delay(d),s/veh | 3.9 | 2.4 | 66.5 | 2.6 | 58.9 | 57.2 |
| LnGrp LOS | A | A | E | A | E | E |
| Approach Vol, veh/h | 1198 | | | 1602 | 54 | |
| Approach Delay, s/veh | 3.9 | | | 3.6 | 58.6 | |
| Approach LOS | A | | | A | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | | 6 | | |
| Phs Duration (G+Y+Rc), s | 16.9 | 110.5 | | 12.6 | | 117.4 | | |
| Change Period (Y+Rc), s | 4.0 | 5.3 | | 4.0 | | 5.3 | | |
| Max Green Setting (Gmax), s | 13.0 | 78.7 | | 27.0 | | 93.7 | | |
| Max Q Clear Time (g_c+I1), s | 3.7 | 14.3 | | 5.1 | | 16.4 | | |
| Green Ext Time (p_c), s | 0.0 | 6.0 | | 0.1 | | 9.9 | | |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 4.7 |
| HCM 2010 LOS | A |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 252 | 719 | 102 | 49 | 861 | 145 | 190 | 140 | 40 | 128 | 186 | 391 |
| Future Volume (veh/h) | 252 | 719 | 102 | 49 | 861 | 145 | 190 | 140 | 40 | 128 | 186 | 391 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 7 | 4 | 14 | 3 | 8 | 18 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 0.99 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 277 | 790 | 103 | 54 | 946 | 66 | 209 | 154 | 7 | 141 | 204 | 0 |
| Adj No. of Lanes | 2 | 2 | 0 | 1 | 2 | 1 | 1 | 2 | 1 | 2 | 2 | 1 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 329 | 1301 | 170 | 400 | 1956 | 863 | 218 | 295 | 131 | 434 | 322 | 144 |
| Arrive On Green | 0.19 | 0.83 | 0.83 | 0.23 | 0.55 | 0.55 | 0.12 | 0.08 | 0.08 | 0.13 | 0.09 | 0.00 |
| Sat Flow, veh/h | 3442 | 3149 | 411 | 1774 | 3539 | 1562 | 1774 | 3539 | 1572 | 3442 | 3539 | 1583 |
| Grp Volume(v), veh/h | 277 | 444 | 449 | 54 | 946 | 66 | 209 | 154 | 7 | 141 | 204 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1770 | 1790 | 1774 | 1770 | 1562 | 1774 | 1770 | 1572 | 1721 | 1770 | 1583 |
| Q Serve(g_s), s | 10.1 | 11.4 | 11.4 | 3.2 | 21.2 | 2.6 | 15.2 | 5.4 | 0.4 | 4.9 | 7.2 | 0.0 |
| Cycle Q Clear(g_c), s | 10.1 | 11.4 | 11.4 | 3.2 | 21.2 | 2.6 | 15.2 | 5.4 | 0.4 | 4.9 | 7.2 | 0.0 |
| Prop In Lane | 1.00 | | 0.23 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 329 | 731 | 739 | 400 | 1956 | 863 | 218 | 295 | 131 | 434 | 322 | 144 |
| V/C Ratio(X) | 0.84 | 0.61 | 0.61 | 0.14 | 0.48 | 0.08 | 0.96 | 0.52 | 0.05 | 0.33 | 0.63 | 0.00 |
| Avail Cap(c_a), veh/h | 424 | 731 | 739 | 400 | 1956 | 863 | 218 | 937 | 416 | 434 | 937 | 419 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.92 | 0.92 | 0.92 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 51.6 | 7.6 | 7.6 | 40.2 | 17.7 | 13.6 | 56.7 | 57.1 | 37.2 | 51.8 | 57.0 | 0.0 |
| Incr Delay (d2), s/veh | 10.7 | 3.5 | 3.4 | 0.2 | 0.9 | 0.2 | 48.7 | 1.4 | 0.2 | 0.4 | 2.1 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 5.3 | 5.9 | 5.9 | 1.6 | 10.6 | 1.1 | 10.4 | 2.7 | 0.2 | 2.3 | 3.6 | 0.0 |
| LnGrp Delay(d),s/veh | 62.4 | 11.1 | 11.0 | 40.4 | 18.6 | 13.8 | 105.4 | 58.5 | 37.4 | 52.2 | 59.1 | 0.0 |
| LnGrp LOS | E | B | B | D | B | B | F | E | D | D | E | |
| Approach Vol, veh/h | | 1170 | | | 1066 | | | 370 | | | 345 | |
| Approach Delay, s/veh | | 23.2 | | | 19.4 | | | 84.6 | | | 56.3 | |
| Approach LOS | | C | | | B | | | F | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 14.6 | 59.0 | 21.0 | 15.4 | 16.4 | 77.2 | 20.0 | 16.4 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 4.6 | * 4.6 | 4.0 | 5.3 | 4.0 | 4.6 |
| Max Green Setting (Gmax), s | 8.0 | * 54 | 16.0 | * 34 | 16.0 | 45.7 | 16.0 | 34.4 |
| Max Q Clear Time (g_c+I1), s | 5.2 | 13.4 | 6.9 | 7.4 | 12.1 | 23.2 | 17.2 | 9.2 |
| Green Ext Time (p_c), s | 0.0 | 7.5 | 0.3 | 0.9 | 0.3 | 7.9 | 0.0 | 1.2 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 33.4 |
| HCM 2010 LOS | C |

Notes



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 43 | 49 | 37 | 0 | 155 | 522 | 20 | 544 | 0 | 341 | 1080 | 57 |
| Future Volume (veh/h) | 43 | 49 | 37 | 0 | 155 | 522 | 20 | 544 | 0 | 341 | 1080 | 57 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1759 | 1759 | 1900 | 1759 | 1759 | 1759 | 1759 | 1759 | 1900 | 1759 | 1759 | 1900 |
| Adj Flow Rate, veh/h | 44 | 51 | 22 | 0 | 160 | 0 | 21 | 561 | 0 | 352 | 1113 | 0 |
| Adj No. of Lanes | 1 | 2 | 0 | 1 | 1 | 1 | 1 | 2 | 0 | 2 | 2 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Cap, veh/h | 69 | 614 | 249 | 2 | 215 | 183 | 40 | 949 | 0 | 484 | 1463 | 0 |
| Arrive On Green | 0.04 | 0.26 | 0.26 | 0.00 | 0.12 | 0.00 | 0.02 | 0.28 | 0.00 | 0.15 | 0.44 | 0.00 |
| Sat Flow, veh/h | 1675 | 2321 | 943 | 1675 | 1759 | 1495 | 1675 | 3431 | 0 | 3250 | 3431 | 0 |
| Grp Volume(v), veh/h | 44 | 36 | 37 | 0 | 160 | 0 | 21 | 561 | 0 | 352 | 1113 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1675 | 1671 | 1593 | 1675 | 1759 | 1495 | 1675 | 1671 | 0 | 1625 | 1671 | 0 |
| Q Serve(g_s), s | 1.8 | 1.1 | 1.2 | 0.0 | 6.1 | 0.0 | 0.9 | 10.0 | 0.0 | 7.2 | 19.5 | 0.0 |
| Cycle Q Clear(g_c), s | 1.8 | 1.1 | 1.2 | 0.0 | 6.1 | 0.0 | 0.9 | 10.0 | 0.0 | 7.2 | 19.5 | 0.0 |
| Prop In Lane | 1.00 | | 0.59 | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 69 | 442 | 421 | 2 | 215 | 183 | 40 | 949 | 0 | 484 | 1463 | 0 |
| V/C Ratio(X) | 0.64 | 0.08 | 0.09 | 0.00 | 0.74 | 0.00 | 0.52 | 0.59 | 0.00 | 0.73 | 0.76 | 0.00 |
| Avail Cap(c_a), veh/h | 290 | 1325 | 1262 | 217 | 1318 | 1120 | 241 | 2745 | 0 | 1920 | 4335 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 32.8 | 19.2 | 19.2 | 0.0 | 29.4 | 0.0 | 33.5 | 21.4 | 0.0 | 28.2 | 16.4 | 0.0 |
| Incr Delay (d2), s/veh | 9.4 | 0.1 | 0.1 | 0.0 | 5.0 | 0.0 | 10.1 | 0.6 | 0.0 | 2.1 | 0.8 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.0 | 0.5 | 0.5 | 0.0 | 3.3 | 0.0 | 0.5 | 4.7 | 0.0 | 3.4 | 9.1 | 0.0 |
| LnGrp Delay(d),s/veh | 42.1 | 19.3 | 19.3 | 0.0 | 34.4 | 0.0 | 43.6 | 22.0 | 0.0 | 30.3 | 17.3 | 0.0 |
| LnGrp LOS | D | B | B | | C | | D | C | | C | B | |
| Approach Vol, veh/h | | 117 | | | 160 | | | 582 | | | 1465 | |
| Approach Delay, s/veh | | 27.9 | | | 34.4 | | | 22.8 | | | 20.4 | |
| Approach LOS | | C | | | C | | | C | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 17.3 | 26.7 | 0.0 | 25.4 | 6.7 | 37.4 | 9.9 | 15.5 |
| Change Period (Y+Rc), s | 7.0 | 7.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 | 7.0 |
| Max Green Setting (Gmax), s | 10.3 | 57.0 | 9.0 | 55.0 | 10.0 | 90.0 | 12.0 | 52.0 |
| Max Q Clear Time (g_c+I1), s | 3.8 | 12.0 | 0.0 | 3.2 | 2.9 | 21.5 | 3.8 | 8.1 |
| Green Ext Time (p_c), s | 1.2 | 3.5 | 0.0 | 0.4 | 0.0 | 8.9 | 0.0 | 0.8 |

| Intersection Summary | | |
|---|---|---|
| HCM 2010 Ctrl Delay | | 22.3 |
| HCM 2010 LOS | | C |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 3 | 4 | 0 | 494 | 3 | 1 | 4 | 515 | 156 | 2 | 1097 | 4 |
| Future Volume (veh/h) | 3 | 4 | 0 | 494 | 3 | 1 | 4 | 515 | 156 | 2 | 1097 | 4 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 1 | 6 | 16 | 5 | 2 | 12 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1845 | 1845 | 1900 | 1845 | 1845 | 1900 | 1845 | 1845 | 1845 | 1845 | 1845 | 1900 |
| Adj Flow Rate, veh/h | 3 | 4 | 0 | 504 | 3 | 0 | 4 | 526 | 126 | 2 | 1119 | 3 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Cap, veh/h | 9 | 16 | 0 | 564 | 599 | 0 | 11 | 743 | 1135 | 6 | 1434 | 4 |
| Arrive On Green | 0.00 | 0.01 | 0.00 | 0.32 | 0.32 | 0.00 | 0.01 | 0.40 | 0.40 | 0.00 | 0.40 | 0.40 |
| Sat Flow, veh/h | 1757 | 1845 | 0 | 1757 | 1845 | 0 | 1757 | 1845 | 1568 | 1757 | 3586 | 10 |
| Grp Volume(v), veh/h | 3 | 4 | 0 | 504 | 3 | 0 | 4 | 526 | 126 | 2 | 547 | 575 |
| Grp Sat Flow(s),veh/h/ln | 1757 | 1845 | 0 | 1757 | 1845 | 0 | 1757 | 1845 | 1568 | 1757 | 1752 | 1843 |
| Q Serve(g_s), s | 0.1 | 0.2 | 0.0 | 20.7 | 0.1 | 0.0 | 0.2 | 18.0 | 1.8 | 0.1 | 20.6 | 20.6 |
| Cycle Q Clear(g_c), s | 0.1 | 0.2 | 0.0 | 20.7 | 0.1 | 0.0 | 0.2 | 18.0 | 1.8 | 0.1 | 20.6 | 20.6 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 0.00 | 1.00 | | 1.00 | 1.00 | | 0.01 |
| Lane Grp Cap(c), veh/h | 9 | 16 | 0 | 564 | 599 | 0 | 11 | 743 | 1135 | 6 | 701 | 737 |
| V/C Ratio(X) | 0.35 | 0.25 | 0.00 | 0.89 | 0.01 | 0.00 | 0.36 | 0.71 | 0.11 | 0.35 | 0.78 | 0.78 |
| Avail Cap(c_a), veh/h | 186 | 244 | 0 | 2136 | 2291 | 0 | 186 | 2364 | 2513 | 139 | 2200 | 2314 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 37.5 | 37.3 | 0.0 | 24.5 | 17.3 | 0.0 | 37.4 | 18.9 | 3.1 | 37.6 | 19.8 | 19.8 |
| Incr Delay (d2), s/veh | 23.0 | 8.2 | 0.0 | 5.2 | 0.0 | 0.0 | 18.0 | 1.3 | 0.0 | 32.7 | 1.9 | 1.8 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.1 | 0.1 | 0.0 | 10.8 | 0.0 | 0.0 | 0.1 | 9.3 | 0.8 | 0.1 | 10.3 | 10.8 |
| LnGrp Delay(d),s/veh | 60.6 | 45.5 | 0.0 | 29.7 | 17.3 | 0.0 | 55.5 | 20.1 | 3.2 | 70.3 | 21.7 | 21.6 |
| LnGrp LOS | E | D | | C | B | | E | C | A | E | C | C |
| Approach Vol, veh/h | | 7 | | | 507 | | | 656 | | | 1124 | |
| Approach Delay, s/veh | | 52.0 | | | 29.6 | | | 17.1 | | | 21.8 | |
| Approach LOS | | D | | | C | | | B | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 5.5 | 35.3 | 29.3 | 5.6 | 5.2 | 35.5 | 5.4 | 29.6 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 8.0 | 95.0 | 92.0 | 10.0 | 6.0 | 97.0 | 8.0 | 94.0 |
| Max Q Clear Time (g_c+I1), s | 2.2 | 22.6 | 22.7 | 2.2 | 2.1 | 20.0 | 2.1 | 2.1 |
| Green Ext Time (p_c), s | 0.0 | 7.7 | 1.6 | 0.0 | 0.0 | 3.5 | 0.0 | 0.0 |

| Intersection Summary | | |
|---|---|---|
| HCM 2010 Ctrl Delay | | 22.3 |
| HCM 2010 LOS | | C |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 2 | 20 | 22 | 202 | 88 | 280 | 16 | 399 | 185 | 240 | 1309 | 5 |
| Future Volume (veh/h) | 2 | 20 | 22 | 202 | 88 | 280 | 16 | 399 | 185 | 240 | 1309 | 5 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1827 | 1827 | 1900 | 1827 | 1827 | 1827 | 1827 | 1827 | 1827 | 1827 | 1827 | 1900 |
| Adj Flow Rate, veh/h | 2 | 21 | 23 | 150 | 173 | 289 | 16 | 411 | 0 | 247 | 1349 | 0 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Cap, veh/h | 4 | 92 | 101 | 188 | 404 | 343 | 25 | 1155 | 685 | 291 | 1685 | 0 |
| Arrive On Green | 0.00 | 0.12 | 0.12 | 0.11 | 0.22 | 0.22 | 0.01 | 0.33 | 0.00 | 0.17 | 0.49 | 0.00 |
| Sat Flow, veh/h | 1740 | 798 | 874 | 1740 | 1827 | 1553 | 1740 | 3471 | 1553 | 1740 | 3563 | 0 |
| Grp Volume(v), veh/h | 2 | 0 | 44 | 150 | 173 | 289 | 16 | 411 | 0 | 247 | 1349 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1740 | 0 | 1673 | 1740 | 1827 | 1553 | 1740 | 1736 | 1553 | 1740 | 1736 | 0 |
| Q Serve(g_s), s | 0.1 | 0.0 | 2.2 | 7.6 | 7.4 | 16.1 | 0.8 | 8.1 | 0.0 | 12.4 | 29.5 | 0.0 |
| Cycle Q Clear(g_c), s | 0.1 | 0.0 | 2.2 | 7.6 | 7.4 | 16.1 | 0.8 | 8.1 | 0.0 | 12.4 | 29.5 | 0.0 |
| Prop In Lane | 1.00 | | 0.52 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 4 | 0 | 193 | 188 | 404 | 343 | 25 | 1155 | 685 | 291 | 1685 | 0 |
| V/C Ratio(X) | 0.53 | 0.00 | 0.23 | 0.80 | 0.43 | 0.84 | 0.63 | 0.36 | 0.00 | 0.85 | 0.80 | 0.00 |
| Avail Cap(c_a), veh/h | 173 | 0 | 852 | 809 | 1598 | 1359 | 154 | 1768 | 959 | 1272 | 3998 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 45.0 | 0.0 | 36.3 | 39.3 | 30.3 | 33.7 | 44.2 | 22.8 | 0.0 | 36.5 | 19.6 | 0.0 |
| Incr Delay (d2), s/veh | 83.5 | 0.0 | 0.6 | 7.6 | 0.7 | 5.6 | 22.7 | 0.2 | 0.0 | 6.8 | 0.9 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.1 | 0.0 | 1.0 | 4.1 | 3.8 | 7.4 | 0.6 | 3.9 | 0.0 | 6.5 | 14.3 | 0.0 |
| LnGrp Delay(d),s/veh | 128.5 | 0.0 | 36.9 | 46.9 | 31.0 | 39.3 | 66.9 | 23.0 | 0.0 | 43.3 | 20.5 | 0.0 |
| LnGrp LOS | F | | D | D | C | D | E | C | | D | C | |
| Approach Vol, veh/h | | 46 | | | 612 | | | 427 | | | 1596 | |
| Approach Delay, s/veh | | 40.9 | | | 38.8 | | | 24.6 | | | 24.0 | |
| Approach LOS | | D | | | D | | | C | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 21.1 | 37.1 | 15.8 | 16.4 | 7.3 | 50.8 | 6.2 | 26.0 |
| Change Period (Y+Rc), s | 6.0 | 7.0 | 6.0 | 6.0 | 6.0 | 7.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 66.0 | 46.0 | 42.0 | 46.0 | 8.0 | 104.0 | 9.0 | 79.0 |
| Max Q Clear Time (g_c+I1), s | 14.4 | 10.1 | 9.6 | 4.2 | 2.8 | 31.5 | 2.1 | 18.1 |
| Green Ext Time (p_c), s | 0.7 | 2.4 | 0.4 | 0.2 | 0.0 | 12.3 | 0.0 | 1.9 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 27.8 |
| HCM 2010 LOS | C |

Notes

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 76 | 51 | 0 | 0 | 182 | 199 | 0 | 0 | 0 | 201 | 0 | 102 |
| Future Volume (veh/h) | 76 | 51 | 0 | 0 | 182 | 199 | 0 | 0 | 0 | 201 | 0 | 102 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 83 | 55 | 0 | 0 | 198 | 216 | 0 | 0 | 0 | 218 | 0 | 111 |
| Adj No. of Lanes | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 119 | 1111 | 0 | 2 | 342 | 306 | 2 | 1320 | 0 | 272 | 1025 | 918 |
| Arrive On Green | 0.07 | 0.31 | 0.00 | 0.00 | 0.19 | 0.19 | 0.00 | 0.00 | 0.00 | 0.15 | 0.00 | 0.57 |
| Sat Flow, veh/h | 1774 | 3632 | 0 | 1774 | 1770 | 1583 | 1774 | 3632 | 0 | 1774 | 1770 | 1583 |
| Grp Volume(v), veh/h | 83 | 55 | 0 | 0 | 198 | 216 | 0 | 0 | 0 | 218 | 0 | 111 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 0 | 1774 | 1770 | 1583 | 1774 | 1770 | 0 | 1774 | 1770 | 1583 |
| Q Serve(g_s), s | 3.4 | 0.8 | 0.0 | 0.0 | 7.6 | 9.6 | 0.0 | 0.0 | 0.0 | 8.9 | 0.0 | 2.4 |
| Cycle Q Clear(g_c), s | 3.4 | 0.8 | 0.0 | 0.0 | 7.6 | 9.6 | 0.0 | 0.0 | 0.0 | 8.9 | 0.0 | 2.4 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 119 | 1111 | 0 | 2 | 342 | 306 | 2 | 1320 | 0 | 272 | 1025 | 918 |
| V/C Ratio(X) | 0.69 | 0.05 | 0.00 | 0.00 | 0.58 | 0.71 | 0.00 | 0.00 | 0.00 | 0.80 | 0.00 | 0.12 |
| Avail Cap(c_a), veh/h | 366 | 2098 | 0 | 366 | 1049 | 939 | 366 | 2051 | 0 | 366 | 1025 | 918 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 34.2 | 17.9 | 0.0 | 0.0 | 27.5 | 28.5 | 0.0 | 0.0 | 0.0 | 30.7 | 0.0 | 7.3 |
| Incr Delay (d2), s/veh | 7.0 | 0.0 | 0.0 | 0.0 | 1.5 | 3.0 | 0.0 | 0.0 | 0.0 | 8.9 | 0.0 | 0.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.9 | 0.4 | 0.0 | 0.0 | 3.9 | 4.5 | 0.0 | 0.0 | 0.0 | 5.0 | 0.0 | 1.1 |
| LnGrp Delay(d),s/veh | 41.3 | 18.0 | 0.0 | 0.0 | 29.1 | 31.5 | 0.0 | 0.0 | 0.0 | 39.6 | 0.0 | 7.5 |
| LnGrp LOS | D | B | | | C | C | | | | D | | A |
| Approach Vol, veh/h | | 138 | | | 414 | | | 0 | | | 329 | |
| Approach Delay, s/veh | | 32.0 | | | 30.3 | | | 0.0 | | | 28.8 | |
| Approach LOS | | C | | | C | | | | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 15.5 | 32.0 | 0.0 | 27.6 | 0.0 | 47.5 | 9.1 | 18.5 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 15.0 | 43.0 | 15.0 | 44.0 | 15.0 | 43.0 | 15.0 | 44.0 |
| Max Q Clear Time (g_c+I1), s | 10.9 | 0.0 | 0.0 | 2.8 | 0.0 | 4.4 | 5.4 | 11.6 |
| Green Ext Time (p_c), s | 0.2 | 0.0 | 0.0 | 0.3 | 0.0 | 0.6 | 0.1 | 2.4 |

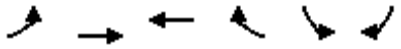
| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 30.0 |
| HCM 2010 LOS | C |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 7 | 245 | 0 | 0 | 372 | 106 | 0 | 0 | 0 | 75 | 0 | 9 |
| Future Volume (veh/h) | 7 | 245 | 0 | 0 | 372 | 106 | 0 | 0 | 0 | 75 | 0 | 9 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 8 | 266 | 0 | 0 | 404 | 115 | 0 | 0 | 0 | 82 | 0 | 10 |
| Adj No. of Lanes | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 33 | 1042 | 0 | 3 | 571 | 161 | 3 | 356 | 0 | 545 | 0 | 894 |
| Arrive On Green | 0.02 | 0.29 | 0.00 | 0.00 | 0.21 | 0.20 | 0.00 | 0.00 | 0.00 | 0.31 | 0.00 | 0.57 |
| Sat Flow, veh/h | 1774 | 3632 | 0 | 1774 | 2728 | 769 | 1774 | 1863 | 0 | 1774 | 0 | 1583 |
| Grp Volume(v), veh/h | 8 | 266 | 0 | 0 | 261 | 258 | 0 | 0 | 0 | 82 | 0 | 10 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 0 | 1774 | 1770 | 1727 | 1774 | 1863 | 0 | 1774 | 0 | 1583 |
| Q Serve(g_s), s | 0.3 | 3.5 | 0.0 | 0.0 | 8.2 | 8.4 | 0.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.2 |
| Cycle Q Clear(g_c), s | 0.3 | 3.5 | 0.0 | 0.0 | 8.2 | 8.4 | 0.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.2 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 0.45 | 1.00 | | 0.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 33 | 1042 | 0 | 3 | 370 | 361 | 3 | 356 | 0 | 545 | 0 | 894 |
| V/C Ratio(X) | 0.24 | 0.26 | 0.00 | 0.00 | 0.70 | 0.72 | 0.00 | 0.00 | 0.00 | 0.15 | 0.00 | 0.01 |
| Avail Cap(c_a), veh/h | 162 | 1087 | 0 | 147 | 544 | 531 | 147 | 649 | 0 | 545 | 0 | 894 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 29.1 | 16.2 | 0.0 | 0.0 | 22.1 | 22.3 | 0.0 | 0.0 | 0.0 | 15.2 | 0.0 | 5.6 |
| Incr Delay (d2), s/veh | 3.7 | 0.1 | 0.0 | 0.0 | 2.5 | 2.6 | 0.0 | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.2 | 1.7 | 0.0 | 0.0 | 4.2 | 4.2 | 0.0 | 0.0 | 0.0 | 1.1 | 0.0 | 0.1 |
| LnGrp Delay(d),s/veh | 32.8 | 16.3 | 0.0 | 0.0 | 24.5 | 24.9 | 0.0 | 0.0 | 0.0 | 15.7 | 0.0 | 5.7 |
| LnGrp LOS | C | B | | | C | C | | | | B | | A |
| Approach Vol, veh/h | | 274 | | | 519 | | | 0 | | | 92 | |
| Approach Delay, s/veh | | 16.8 | | | 24.7 | | | 0.0 | | | 14.6 | |
| Approach LOS | | B | | | C | | | | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 22.5 | 16.0 | 0.0 | 21.7 | 0.0 | 38.5 | 5.1 | 16.6 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 18.0 | 21.0 | 5.0 | 18.0 | 5.0 | 34.0 | 5.0 | 18.0 |
| Max Q Clear Time (g_c+I1), s | 14.0 | 0.0 | 0.0 | 5.5 | 0.0 | 2.2 | 2.3 | 10.4 |
| Green Ext Time (p_c), s | 0.1 | 0.0 | 0.0 | 1.1 | 0.0 | 0.0 | 0.0 | 1.7 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 21.2 |
| HCM 2010 LOS | C |



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 136 | 158 | 330 | 198 | 1491 | 146 |
| Future Volume (veh/h) | 136 | 158 | 330 | 198 | 1491 | 146 |
| Number | 5 | 2 | 6 | 16 | 3 | 18 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 139 | 161 | 337 | 202 | 1521 | 149 |
| Adj No. of Lanes | 1 | 3 | 2 | 1 | 2 | 1 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 175 | 1734 | 647 | 289 | 1785 | 821 |
| Arrive On Green | 0.10 | 0.34 | 0.18 | 0.18 | 0.52 | 0.52 |
| Sat Flow, veh/h | 1774 | 5253 | 3632 | 1583 | 3442 | 1583 |
| Grp Volume(v), veh/h | 139 | 161 | 337 | 202 | 1521 | 149 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1695 | 1770 | 1583 | 1721 | 1583 |
| Q Serve(g_s), s | 5.8 | 1.6 | 6.5 | 9.0 | 28.8 | 3.8 |
| Cycle Q Clear(g_c), s | 5.8 | 1.6 | 6.5 | 9.0 | 28.8 | 3.8 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 175 | 1734 | 647 | 289 | 1785 | 821 |
| V/C Ratio(X) | 0.80 | 0.09 | 0.52 | 0.70 | 0.85 | 0.18 |
| Avail Cap(c_a), veh/h | 247 | 4294 | 2285 | 1022 | 2541 | 1169 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 33.3 | 16.9 | 27.8 | 28.9 | 15.7 | 9.7 |
| Incr Delay (d2), s/veh | 11.2 | 0.0 | 0.7 | 3.0 | 2.1 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.4 | 0.8 | 3.2 | 4.2 | 14.0 | 1.7 |
| LnGrp Delay(d),s/veh | 44.5 | 16.9 | 28.5 | 31.9 | 17.8 | 9.8 |
| LnGrp LOS | D | B | C | C | B | A |
| Approach Vol, veh/h | | 300 | 539 | | 1670 | |
| Approach Delay, s/veh | | 29.7 | 29.8 | | 17.0 | |
| Approach LOS | | C | C | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 31.0 | | | 11.9 | 19.1 | | 44.4 |
| Change Period (Y+Rc), s | | 5.3 | | | 4.5 | 5.3 | | 5.3 |
| Max Green Setting (Gmax), s | | 63.7 | | | 10.5 | 48.7 | | 55.7 |
| Max Q Clear Time (g_c+I1), s | | 3.6 | | | 7.8 | 11.0 | | 30.8 |
| Green Ext Time (p_c), s | | 1.0 | | | 0.1 | 2.8 | | 8.4 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 21.3 |
| HCM 2010 LOS | C |

Notes



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 105 | 1544 | 0 | 0 | 276 | 1066 | 252 | 5 | 232 | 0 | 0 | 0 |
| Future Volume (veh/h) | 105 | 1544 | 0 | 0 | 276 | 1066 | 252 | 5 | 232 | 0 | 0 | 0 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 7 | 4 | 14 | | | |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | | | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 0 | 0 | 1863 | 1863 | 1863 | 1863 | 1863 | | | |
| Adj Flow Rate, veh/h | 111 | 1625 | 0 | 0 | 291 | 1122 | 269 | 0 | 244 | | | |
| Adj No. of Lanes | 2 | 3 | 0 | 0 | 1 | 2 | 2 | 0 | 1 | | | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | | | |
| Percent Heavy Veh, % | 2 | 2 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | | | |
| Cap, veh/h | 202 | 3042 | 0 | 0 | 872 | 1482 | 754 | 0 | 336 | | | |
| Arrive On Green | 0.06 | 0.60 | 0.00 | 0.00 | 0.47 | 0.47 | 0.21 | 0.00 | 0.21 | | | |
| Sat Flow, veh/h | 3442 | 5253 | 0 | 0 | 1863 | 3167 | 3548 | 0 | 1583 | | | |
| Grp Volume(v), veh/h | 111 | 1625 | 0 | 0 | 291 | 1122 | 269 | 0 | 244 | | | |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1695 | 0 | 0 | 1863 | 1583 | 1774 | 0 | 1583 | | | |
| Q Serve(g_s), s | 1.8 | 10.6 | 0.0 | 0.0 | 5.5 | 16.3 | 3.6 | 0.0 | 8.0 | | | |
| Cycle Q Clear(g_c), s | 1.8 | 10.6 | 0.0 | 0.0 | 5.5 | 16.3 | 3.6 | 0.0 | 8.0 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 1.00 | 1.00 | | 1.00 | | | |
| Lane Grp Cap(c), veh/h | 202 | 3042 | 0 | 0 | 872 | 1482 | 754 | 0 | 336 | | | |
| V/C Ratio(X) | 0.55 | 0.53 | 0.00 | 0.00 | 0.33 | 0.76 | 0.36 | 0.00 | 0.73 | | | |
| Avail Cap(c_a), veh/h | 984 | 6694 | 0 | 0 | 1787 | 3037 | 2896 | 0 | 1292 | | | |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | | | |
| Uniform Delay (d), s/veh | 25.6 | 6.6 | 0.0 | 0.0 | 9.4 | 12.3 | 18.8 | 0.0 | 20.5 | | | |
| Incr Delay (d2), s/veh | 2.3 | 0.1 | 0.0 | 0.0 | 0.2 | 0.8 | 0.3 | 0.0 | 3.0 | | | |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| %ile BackOfQ(50%),veh/ln | 0.9 | 4.9 | 0.0 | 0.0 | 2.9 | 7.2 | 1.8 | 0.0 | 3.7 | | | |
| LnGrp Delay(d),s/veh | 27.9 | 6.8 | 0.0 | 0.0 | 9.6 | 13.1 | 19.1 | 0.0 | 23.5 | | | |
| LnGrp LOS | C | A | | | A | B | B | | C | | | |
| Approach Vol, veh/h | | 1736 | | | 1413 | | | 513 | | | | |
| Approach Delay, s/veh | | 8.1 | | | 12.4 | | | 21.2 | | | | |
| Approach LOS | | A | | | B | | | C | | | | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | |
| Phs Duration (G+Y+Rc), s | | 38.8 | | 17.2 | 7.3 | 31.5 | | |
| Change Period (Y+Rc), s | | 5.3 | | 5.3 | 4.0 | 5.3 | | |
| Max Green Setting (Gmax), s | | 73.7 | | 45.7 | 16.0 | 53.7 | | |
| Max Q Clear Time (g_c+I1), s | | 12.6 | | 10.0 | 3.8 | 18.3 | | |
| Green Ext Time (p_c), s | | 17.3 | | 1.9 | 0.2 | 7.9 | | |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 11.6 |
| HCM 2010 LOS | B |

Notes

| Intersection | |
|---|---|
| Int Delay, s/veh | 11 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 45 | 381 | 39 | 77 | 333 | 47 |
| Future Vol, veh/h | 45 | 381 | 39 | 77 | 333 | 47 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 93 | 93 | 93 | 93 | 93 | 93 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 48 | 410 | 42 | 83 | 358 | 51 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 851 | 84 | 0 | 0 | 125 | 0 |
| Stage 1 | 84 | - | - | - | - | - |
| Stage 2 | 767 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 330 | 975 | - | - | 1462 | - |
| Stage 1 | 939 | - | - | - | - | - |
| Stage 2 | 458 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 247 | 975 | - | - | 1462 | - |
| Mov Cap-2 Maneuver | 247 | - | - | - | - | - |
| Stage 1 | 702 | - | - | - | - | - |
| Stage 2 | 458 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 17.3 | 0 | 7.2 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 744 | 1462 | - |
| HCM Lane V/C Ratio | - | - | 0.616 | 0.245 | - |
| HCM Control Delay (s) | - | - | 17.3 | 8.3 | 0 |
| HCM Lane LOS | - | - | C | A | A |
| HCM 95th %tile Q(veh) | - | - | 4.3 | 1 | - |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 47 | 369 | 36 | 295 | 309 | 222 | 74 | 245 | 564 | 174 | 99 | 27 |
| Future Volume (veh/h) | 47 | 369 | 36 | 295 | 309 | 222 | 74 | 245 | 564 | 174 | 99 | 27 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.94 | 1.00 | | 0.42 | 1.00 | | 0.69 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 55 | 429 | -13 | 343 | 359 | 250 | 86 | 285 | 379 | 202 | 115 | 30 |
| Adj No. of Lanes | 1 | 2 | 0 | 2 | 2 | 0 | 1 | 1 | 2 | 1 | 1 | 0 |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 71 | 951 | 0 | 432 | 694 | 472 | 111 | 575 | 710 | 236 | 495 | 129 |
| Arrive On Green | 0.04 | 0.27 | 0.00 | 0.13 | 0.35 | 0.35 | 0.06 | 0.31 | 0.31 | 0.13 | 0.38 | 0.38 |
| Sat Flow, veh/h | 1774 | 3632 | 0 | 3442 | 1960 | 1333 | 1774 | 1863 | 1166 | 1774 | 1290 | 336 |
| Grp Volume(v), veh/h | 55 | 416 | 0 | 343 | 323 | 286 | 86 | 285 | 379 | 202 | 0 | 145 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 0 | 1721 | 1770 | 1524 | 1774 | 1863 | 583 | 1774 | 0 | 1626 |
| Q Serve(g_s), s | 3.4 | 10.7 | 0.0 | 10.6 | 15.9 | 16.4 | 5.2 | 13.7 | 29.9 | 12.2 | 0.0 | 6.6 |
| Cycle Q Clear(g_c), s | 3.4 | 10.7 | 0.0 | 10.6 | 15.9 | 16.4 | 5.2 | 13.7 | 29.9 | 12.2 | 0.0 | 6.6 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 0.88 | 1.00 | | 1.00 | 1.00 | | 0.21 |
| Lane Grp Cap(c), veh/h | 71 | 951 | 0 | 432 | 627 | 540 | 111 | 575 | 710 | 236 | 0 | 624 |
| V/C Ratio(X) | 0.77 | 0.44 | 0.00 | 0.79 | 0.52 | 0.53 | 0.77 | 0.50 | 0.53 | 0.86 | 0.00 | 0.23 |
| Avail Cap(c_a), veh/h | 178 | 951 | 0 | 1285 | 627 | 540 | 420 | 611 | 732 | 412 | 0 | 624 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 52.2 | 33.3 | 0.0 | 46.6 | 28.0 | 28.2 | 50.7 | 31.0 | 26.0 | 46.6 | 0.0 | 22.9 |
| Incr Delay (d2), s/veh | 16.2 | 1.5 | 0.0 | 3.3 | 3.0 | 3.7 | 10.8 | 0.7 | 0.7 | 8.6 | 0.0 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.0 | 5.4 | 0.0 | 5.3 | 8.2 | 7.5 | 2.9 | 7.2 | 4.9 | 6.6 | 0.0 | 3.0 |
| LnGrp Delay(d),s/veh | 68.4 | 34.7 | 0.0 | 50.0 | 31.0 | 31.9 | 61.5 | 31.6 | 26.7 | 55.1 | 0.0 | 23.1 |
| LnGrp LOS | E | C | | D | C | C | E | C | C | E | | C |
| Approach Vol, veh/h | | 471 | | | 952 | | | 750 | | | 347 | |
| Approach Delay, s/veh | | 38.7 | | | 38.1 | | | 32.6 | | | 41.7 | |
| Approach LOS | | D | | | D | | | C | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 17.8 | 35.0 | 10.9 | 46.1 | 8.4 | 44.4 | 19.1 | 37.9 |
| Change Period (Y+Rc), s | 4.0 | 5.5 | 4.0 | 4.0 | 4.0 | 5.5 | 4.5 | 4.0 |
| Max Green Setting (Gmax), s | 13.8 | 29.5 | 26.0 | 41.0 | 11.0 | 29.5 | 25.5 | 36.0 |
| Max Q Clear Time (g_c+I1), s | 12.6 | 12.7 | 7.2 | 8.6 | 5.4 | 18.4 | 14.2 | 31.9 |
| Green Ext Time (p_c), s | 1.2 | 2.6 | 0.2 | 1.0 | 0.0 | 3.1 | 0.4 | 2.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 37.1 |
| HCM 2010 LOS | D |

| Intersection | |
|---|---|
| Int Delay, s/veh | 7.3 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 1006 | 87 | 64 | 798 | 22 | 43 |
| Future Vol, veh/h | 1006 | 87 | 64 | 798 | 22 | 43 |
| Conflicting Peds, #/hr | 0 | 12 | 12 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 150 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 74 | 74 | 74 | 74 | 74 | 74 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1359 | 118 | 86 | 1078 | 30 | 58 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 1489 | 0 | 2141 | 751 |
| Stage 1 | - | - | - | - | 1430 | - |
| Stage 2 | - | - | - | - | 711 | - |
| Critical Hdwy | - | - | 4.14 | - | 6.84 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 | - |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 | 3.32 |
| Pot Cap-1 Maneuver | - | - | 447 | - | 42 | 353 |
| Stage 1 | - | - | - | - | 187 | - |
| Stage 2 | - | - | - | - | 448 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 442 | - | 33 | 349 |
| Mov Cap-2 Maneuver | - | - | - | - | 33 | - |
| Stage 1 | - | - | - | - | 149 | - |
| Stage 2 | - | - | - | - | 448 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 1.1 | 211.3 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 82 | - | - | 442 | - |
| HCM Lane V/C Ratio | 1.071 | - | - | 0.196 | - |
| HCM Control Delay (s) | 211.3 | - | - | 15.1 | - |
| HCM Lane LOS | F | - | - | C | - |
| HCM 95th %tile Q(veh) | 6.1 | - | - | 0.7 | - |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 109 | 843 | 132 | 77 | 742 | 148 | 84 | 60 | 51 | 85 | 43 | 33 |
| Future Volume (veh/h) | 109 | 843 | 132 | 77 | 742 | 148 | 84 | 60 | 51 | 85 | 43 | 33 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.96 | 1.00 | | 0.97 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 138 | 1067 | 161 | 97 | 939 | 187 | 106 | 76 | -26 | 108 | 54 | -30 |
| Adj No. of Lanes | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 150 | 1385 | 209 | 454 | 1851 | 368 | 129 | 141 | 120 | 131 | 143 | 0 |
| Arrive On Green | 0.08 | 0.45 | 0.45 | 0.26 | 0.63 | 0.63 | 0.07 | 0.08 | 0.00 | 0.07 | 0.08 | 0.00 |
| Sat Flow, veh/h | 1774 | 3068 | 462 | 1774 | 2925 | 582 | 1774 | 1863 | 1583 | 1774 | 1863 | 0 |
| Grp Volume(v), veh/h | 138 | 614 | 614 | 97 | 568 | 558 | 106 | 76 | -26 | 108 | 24 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1760 | 1774 | 1770 | 1737 | 1774 | 1863 | 1583 | 1774 | 1863 | 0 |
| Q Serve(g_s), s | 10.0 | 37.9 | 38.1 | 5.6 | 22.6 | 22.6 | 7.7 | 5.1 | 0.0 | 7.8 | 1.6 | 0.0 |
| Cycle Q Clear(g_c), s | 10.0 | 37.9 | 38.1 | 5.6 | 22.6 | 22.6 | 7.7 | 5.1 | 0.0 | 7.8 | 1.6 | 0.0 |
| Prop In Lane | 1.00 | | 0.26 | 1.00 | | 0.33 | 1.00 | | 1.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 150 | 799 | 795 | 454 | 1120 | 1099 | 129 | 141 | 120 | 131 | 143 | 0 |
| V/C Ratio(X) | 0.92 | 0.77 | 0.77 | 0.21 | 0.51 | 0.51 | 0.82 | 0.54 | -0.22 | 0.82 | 0.17 | 0.00 |
| Avail Cap(c_a), veh/h | 150 | 799 | 795 | 454 | 1120 | 1099 | 177 | 430 | 365 | 164 | 416 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.90 | 0.90 | 0.90 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 59.1 | 30.0 | 30.0 | 38.1 | 12.9 | 12.9 | 59.4 | 57.9 | 0.0 | 59.3 | 56.1 | 0.0 |
| Incr Delay (d2), s/veh | 49.3 | 7.0 | 7.2 | 0.1 | 1.5 | 1.5 | 14.0 | 4.5 | 0.0 | 19.1 | 0.8 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 7.0 | 20.0 | 20.0 | 2.8 | 11.3 | 11.2 | 4.3 | 2.8 | 0.0 | 4.5 | 0.8 | 0.0 |
| LnGrp Delay(d),s/veh | 108.4 | 37.0 | 37.2 | 38.2 | 14.4 | 14.4 | 73.4 | 62.4 | 0.0 | 78.4 | 56.9 | 0.0 |
| LnGrp LOS | F | D | D | D | B | B | E | E | | E | E | |
| Approach Vol, veh/h | | 1366 | | | 1223 | | | 156 | | | 132 | |
| Approach Delay, s/veh | | 44.3 | | | 16.3 | | | 80.3 | | | 74.5 | |
| Approach LOS | | D | | | B | | | F | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 38.5 | 64.0 | 13.5 | 14.0 | 15.0 | 87.5 | 13.6 | 13.8 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 4.0 | 4.0 | 4.0 | 5.3 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 12.0 | * 59 | 13.0 | 29.0 | 11.0 | 59.7 | 12.0 | 30.0 |
| Max Q Clear Time (g_c+I1), s | 7.6 | 40.1 | 9.7 | 3.6 | 12.0 | 24.6 | 9.8 | 7.1 |
| Green Ext Time (p_c), s | 0.0 | 16.4 | 0.0 | 0.1 | 0.0 | 27.1 | 0.0 | 0.5 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 35.7 |
| HCM 2010 LOS | D |

Notes



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 77 | 866 | 49 | 96 | 908 | 47 | 53 | 19 | 92 | 42 | 14 | 39 |
| Future Volume (veh/h) | 77 | 866 | 49 | 96 | 908 | 47 | 53 | 19 | 92 | 42 | 14 | 39 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.98 | 1.00 | | 0.97 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 87 | 973 | 20 | 108 | 1020 | 38 | 60 | 21 | 64 | 47 | 16 | 27 |
| Adj No. of Lanes | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 462 | 2444 | 1075 | 158 | 1653 | 717 | 104 | 157 | 133 | 78 | 44 | 74 |
| Arrive On Green | 0.52 | 1.00 | 1.00 | 0.05 | 0.47 | 0.47 | 0.06 | 0.08 | 0.08 | 0.04 | 0.07 | 0.07 |
| Sat Flow, veh/h | 1774 | 3539 | 1557 | 3442 | 3539 | 1535 | 1774 | 1863 | 1578 | 1774 | 623 | 1050 |
| Grp Volume(v), veh/h | 87 | 973 | 20 | 108 | 1020 | 38 | 60 | 21 | 64 | 47 | 0 | 43 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1557 | 1721 | 1770 | 1535 | 1774 | 1863 | 1578 | 1774 | 0 | 1673 |
| Q Serve(g_s), s | 3.4 | 0.0 | 0.0 | 4.0 | 28.1 | 1.4 | 4.3 | 1.4 | 5.0 | 3.4 | 0.0 | 3.2 |
| Cycle Q Clear(g_c), s | 3.4 | 0.0 | 0.0 | 4.0 | 28.1 | 1.4 | 4.3 | 1.4 | 5.0 | 3.4 | 0.0 | 3.2 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.63 |
| Lane Grp Cap(c), veh/h | 462 | 2444 | 1075 | 158 | 1653 | 717 | 104 | 157 | 133 | 78 | 0 | 118 |
| V/C Ratio(X) | 0.19 | 0.40 | 0.02 | 0.69 | 0.62 | 0.05 | 0.58 | 0.13 | 0.48 | 0.60 | 0.00 | 0.36 |
| Avail Cap(c_a), veh/h | 462 | 2444 | 1075 | 289 | 1653 | 717 | 108 | 516 | 437 | 108 | 0 | 463 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.77 | 0.77 | 0.77 | 0.86 | 0.86 | 0.86 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 23.9 | 0.0 | 0.0 | 61.1 | 25.9 | 11.6 | 59.6 | 55.1 | 56.8 | 61.0 | 0.0 | 57.6 |
| Incr Delay (d2), s/veh | 0.1 | 0.4 | 0.0 | 1.7 | 1.5 | 0.1 | 4.3 | 0.1 | 1.0 | 2.8 | 0.0 | 0.7 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.6 | 0.1 | 0.0 | 2.0 | 13.9 | 0.6 | 2.2 | 0.7 | 2.2 | 1.7 | 0.0 | 1.5 |
| LnGrp Delay(d),s/veh | 23.9 | 0.4 | 0.0 | 62.8 | 27.5 | 11.7 | 63.9 | 55.3 | 57.8 | 63.8 | 0.0 | 58.3 |
| LnGrp LOS | C | A | A | E | C | B | E | E | E | E | | E |
| Approach Vol, veh/h | | 1080 | | | 1166 | | | 145 | | | 90 | |
| Approach Delay, s/veh | | 2.3 | | | 30.2 | | | 60.0 | | | 61.2 | |
| Approach LOS | | A | | | C | | | E | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 10.1 | 95.1 | 11.7 | 13.2 | 39.1 | 66.0 | 9.8 | 15.1 |
| Change Period (Y+Rc), s | 4.1 | 5.3 | 4.1 | 4.0 | 5.3 | * 5.3 | 4.1 | * 4.1 |
| Max Green Setting (Gmax), s | 10.9 | 57.7 | 7.9 | 36.0 | 7.9 | * 61 | 7.9 | * 36 |
| Max Q Clear Time (g_c+I1), s | 6.0 | 2.0 | 6.3 | 5.2 | 5.4 | 30.1 | 5.4 | 7.0 |
| Green Ext Time (p_c), s | 0.1 | 33.5 | 0.0 | 0.1 | 0.0 | 23.1 | 0.0 | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 20.9 |
| HCM 2010 LOS | C |

Notes

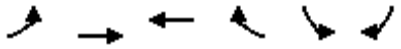


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 53 | 940 | 8 | 359 | 987 | 79 | 15 | 34 | 317 | 186 | 40 | 48 |
| Future Volume (veh/h) | 53 | 940 | 8 | 359 | 987 | 79 | 15 | 34 | 317 | 186 | 40 | 48 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 0.99 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 58 | 1033 | 0 | 395 | 1085 | 86 | 16 | 37 | 73 | 204 | 44 | 12 |
| Adj No. of Lanes | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 510 | 2106 | 942 | 371 | 1435 | 639 | 42 | 205 | 173 | 96 | 198 | 54 |
| Arrive On Green | 0.57 | 1.00 | 0.00 | 0.11 | 0.41 | 0.41 | 0.02 | 0.11 | 0.11 | 0.05 | 0.14 | 0.14 |
| Sat Flow, veh/h | 1774 | 3539 | 1583 | 3442 | 3539 | 1576 | 1774 | 1863 | 1570 | 1774 | 1408 | 384 |
| Grp Volume(v), veh/h | 58 | 1033 | 0 | 395 | 1085 | 86 | 16 | 37 | 73 | 204 | 0 | 56 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1583 | 1721 | 1770 | 1576 | 1774 | 1863 | 1570 | 1774 | 0 | 1792 |
| Q Serve(g_s), s | 1.9 | 0.0 | 0.0 | 14.0 | 34.2 | 3.5 | 1.2 | 2.3 | 5.6 | 7.0 | 0.0 | 3.6 |
| Cycle Q Clear(g_c), s | 1.9 | 0.0 | 0.0 | 14.0 | 34.2 | 3.5 | 1.2 | 2.3 | 5.6 | 7.0 | 0.0 | 3.6 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.21 |
| Lane Grp Cap(c), veh/h | 510 | 2106 | 942 | 371 | 1435 | 639 | 42 | 205 | 173 | 96 | 0 | 252 |
| V/C Ratio(X) | 0.11 | 0.49 | 0.00 | 1.07 | 0.76 | 0.13 | 0.38 | 0.18 | 0.42 | 2.14 | 0.00 | 0.22 |
| Avail Cap(c_a), veh/h | 510 | 2106 | 942 | 371 | 1435 | 639 | 96 | 602 | 507 | 96 | 0 | 579 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.91 | 0.91 | 0.00 | 0.88 | 0.88 | 0.88 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 20.1 | 0.0 | 0.0 | 58.0 | 33.1 | 15.1 | 62.5 | 52.5 | 54.0 | 61.5 | 0.0 | 49.6 |
| Incr Delay (d2), s/veh | 0.0 | 0.7 | 0.0 | 62.4 | 3.3 | 0.4 | 2.1 | 0.2 | 0.6 | 544.3 | 0.0 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.9 | 0.2 | 0.0 | 9.9 | 17.4 | 1.6 | 0.6 | 1.2 | 2.5 | 17.9 | 0.0 | 1.8 |
| LnGrp Delay(d),s/veh | 20.1 | 0.7 | 0.0 | 120.4 | 36.5 | 15.5 | 64.6 | 52.7 | 54.6 | 605.8 | 0.0 | 49.7 |
| LnGrp LOS | C | A | | F | D | B | E | D | D | F | | D |
| Approach Vol, veh/h | | 1091 | | | 1566 | | | 126 | | | 260 | |
| Approach Delay, s/veh | | 1.8 | | | 56.5 | | | 55.3 | | | 486.0 | |
| Approach LOS | | A | | | E | | | E | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 18.0 | 82.7 | 7.1 | 22.3 | 42.7 | 58.0 | 11.0 | 18.3 |
| Change Period (Y+Rc), s | 4.0 | 5.3 | 4.0 | 4.0 | 5.3 | * 5.3 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 14.0 | 49.7 | 7.0 | 42.0 | 11.0 | * 53 | 7.0 | 42.0 |
| Max Q Clear Time (g_c+I1), s | 16.0 | 2.0 | 3.2 | 5.6 | 3.9 | 36.2 | 9.0 | 7.6 |
| Green Ext Time (p_c), s | 0.0 | 4.9 | 0.0 | 0.2 | 0.0 | 4.6 | 0.0 | 0.2 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 73.5 |
| HCM 2010 LOS | E |

Notes



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 81 | 1362 | 809 | 39 | 642 | 617 |
| Future Volume (veh/h) | 81 | 1362 | 809 | 39 | 642 | 617 |
| Number | 7 | 4 | 8 | 18 | 1 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 88 | 1480 | 879 | 0 | 698 | 383 |
| Adj No. of Lanes | 2 | 2 | 3 | 1 | 1 | 2 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 137 | 1573 | 1866 | 581 | 853 | 1339 |
| Arrive On Green | 0.04 | 0.44 | 0.37 | 0.00 | 0.48 | 0.48 |
| Sat Flow, veh/h | 3442 | 3632 | 5253 | 1583 | 1774 | 2787 |
| Grp Volume(v), veh/h | 88 | 1480 | 879 | 0 | 698 | 383 |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1770 | 1695 | 1583 | 1774 | 1393 |
| Q Serve(g_s), s | 3.0 | 47.9 | 15.9 | 0.0 | 40.4 | 9.9 |
| Cycle Q Clear(g_c), s | 3.0 | 47.9 | 15.9 | 0.0 | 40.4 | 9.9 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 137 | 1573 | 1866 | 581 | 853 | 1339 |
| V/C Ratio(X) | 0.64 | 0.94 | 0.47 | 0.00 | 0.82 | 0.29 |
| Avail Cap(c_a), veh/h | 186 | 1607 | 1866 | 581 | 853 | 1339 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.44 | 0.44 | 1.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 56.8 | 31.8 | 29.1 | 0.0 | 26.7 | 18.8 |
| Incr Delay (d2), s/veh | 2.2 | 5.8 | 0.2 | 0.0 | 6.3 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.5 | 24.5 | 7.4 | 0.0 | 21.3 | 9.7 |
| LnGrp Delay(d),s/veh | 59.0 | 37.7 | 29.3 | 0.0 | 33.0 | 18.9 |
| LnGrp LOS | E | D | C | | C | B |
| Approach Vol, veh/h | | 1568 | 879 | | 1081 | |
| Approach Delay, s/veh | | 38.9 | 29.3 | | 28.0 | |
| Approach LOS | | D | C | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | | | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | | | 57.8 | | 62.2 | 9.3 | 48.5 |
| Change Period (Y+Rc), s | | | | 4.5 | | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | | | | 54.5 | | 56.5 | 6.5 | 43.5 |
| Max Q Clear Time (g_c+I1), s | | | | 49.9 | | 42.4 | 5.0 | 17.9 |
| Green Ext Time (p_c), s | | | | 3.4 | | 3.7 | 0.0 | 6.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 33.1 |
| HCM 2010 LOS | C |



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 1442 | 562 | 0 | 1326 | 146 | 82 |
| Future Volume (veh/h) | 1442 | 562 | 0 | 1326 | 146 | 82 |
| Number | 4 | 14 | 3 | 8 | 5 | 12 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 0 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 1567 | 611 | 0 | 1441 | 159 | 89 |
| Adj No. of Lanes | 2 | 1 | 0 | 2 | 2 | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 0 | 2 | 2 | 2 |
| Cap, veh/h | 1946 | 871 | 0 | 1946 | 1291 | 594 |
| Arrive On Green | 0.55 | 0.55 | 0.00 | 0.55 | 0.38 | 0.38 |
| Sat Flow, veh/h | 3632 | 1583 | 0 | 3725 | 3442 | 1583 |
| Grp Volume(v), veh/h | 1567 | 611 | 0 | 1441 | 159 | 89 |
| Grp Sat Flow(s),veh/h/ln | 1770 | 1583 | 0 | 1770 | 1721 | 1583 |
| Q Serve(g_s), s | 42.9 | 33.9 | 0.0 | 37.1 | 3.6 | 4.5 |
| Cycle Q Clear(g_c), s | 42.9 | 33.9 | 0.0 | 37.1 | 3.6 | 4.5 |
| Prop In Lane | | 1.00 | 0.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 1946 | 871 | 0 | 1946 | 1291 | 594 |
| V/C Ratio(X) | 0.81 | 0.70 | 0.00 | 0.74 | 0.12 | 0.15 |
| Avail Cap(c_a), veh/h | 2581 | 1155 | 0 | 2581 | 1291 | 594 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.90 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 21.8 | 19.8 | 0.0 | 20.5 | 24.6 | 24.8 |
| Incr Delay (d2), s/veh | 1.4 | 1.3 | 0.0 | 0.7 | 0.2 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 21.3 | 15.1 | 0.0 | 18.2 | 1.8 | 2.0 |
| LnGrp Delay(d),s/veh | 23.3 | 21.1 | 0.0 | 21.2 | 24.8 | 25.4 |
| LnGrp LOS | C | C | | C | C | C |
| Approach Vol, veh/h | 2178 | | | 1441 | 248 | |
| Approach Delay, s/veh | 22.6 | | | 21.2 | 25.0 | |
| Approach LOS | C | | | C | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | | | 8 |
| Phs Duration (G+Y+Rc), s | | 49.5 | | 70.5 | | | | 70.5 |
| Change Period (Y+Rc), s | | 4.5 | | 4.5 | | | | 4.5 |
| Max Green Setting (Gmax), s | | 23.5 | | 87.5 | | | | 87.5 |
| Max Q Clear Time (g_c+I1), s | | 6.5 | | 44.9 | | | | 39.1 |
| Green Ext Time (p_c), s | | 0.7 | | 21.1 | | | | 14.4 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 22.3 |
| HCM 2010 LOS | C |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 1490 | 34 | 46 | 1291 | 35 | 51 |
| Future Volume (veh/h) | 1490 | 34 | 46 | 1291 | 35 | 51 |
| Number | 2 | 12 | 1 | 6 | 7 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 0.98 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 1568 | 30 | 48 | 1359 | 37 | 45 |
| Adj No. of Lanes | 2 | 1 | 1 | 2 | 1 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 2796 | 1224 | 62 | 3028 | 129 | 115 |
| Arrive On Green | 0.79 | 0.79 | 0.03 | 0.86 | 0.07 | 0.07 |
| Sat Flow, veh/h | 3632 | 1550 | 1774 | 3632 | 1774 | 1583 |
| Grp Volume(v), veh/h | 1568 | 30 | 48 | 1359 | 37 | 45 |
| Grp Sat Flow(s),veh/h/ln | 1770 | 1550 | 1774 | 1770 | 1774 | 1583 |
| Q Serve(g_s), s | 21.7 | 0.5 | 3.5 | 11.7 | 2.6 | 3.5 |
| Cycle Q Clear(g_c), s | 21.7 | 0.5 | 3.5 | 11.7 | 2.6 | 3.5 |
| Prop In Lane | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 2796 | 1224 | 62 | 3028 | 129 | 115 |
| V/C Ratio(X) | 0.56 | 0.02 | 0.78 | 0.45 | 0.29 | 0.39 |
| Avail Cap(c_a), veh/h | 2796 | 1224 | 150 | 3028 | 368 | 329 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.71 | 0.71 | 0.57 | 0.57 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 5.2 | 2.9 | 62.2 | 2.2 | 57.1 | 57.5 |
| Incr Delay (d2), s/veh | 0.6 | 0.0 | 4.4 | 0.3 | 0.4 | 0.8 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 10.7 | 0.2 | 1.8 | 5.6 | 1.3 | 1.6 |
| LnGrp Delay(d),s/veh | 5.7 | 3.0 | 66.6 | 2.5 | 57.5 | 58.3 |
| LnGrp LOS | A | A | E | A | E | E |
| Approach Vol, veh/h | 1598 | | | 1407 | 82 | |
| Approach Delay, s/veh | 5.7 | | | 4.7 | 57.9 | |
| Approach LOS | A | | | A | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | | 6 | | |
| Phs Duration (G+Y+Rc), s | 8.5 | 108.0 | | 13.5 | | 116.5 | | |
| Change Period (Y+Rc), s | 4.0 | 5.3 | | 4.0 | | 5.3 | | |
| Max Green Setting (Gmax), s | 4.5 | 78.7 | | 27.0 | | 93.7 | | |
| Max Q Clear Time (g_c+I1), s | 5.5 | 23.7 | | 5.5 | | 13.7 | | |
| Green Ext Time (p_c), s | 0.0 | 9.7 | | 0.1 | | 7.6 | | |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 6.6 |
| HCM 2010 LOS | A |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 379 | 951 | 186 | 84 | 812 | 211 | 252 | 252 | 116 | 224 | 213 | 273 |
| Future Volume (veh/h) | 379 | 951 | 186 | 84 | 812 | 211 | 252 | 252 | 116 | 224 | 213 | 273 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 7 | 4 | 14 | 3 | 8 | 18 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 0.98 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 408 | 1023 | 191 | 90 | 873 | 136 | 271 | 271 | 88 | 241 | 229 | 0 |
| Adj No. of Lanes | 2 | 2 | 0 | 1 | 2 | 1 | 1 | 2 | 1 | 2 | 2 | 1 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 460 | 1250 | 233 | 412 | 1873 | 837 | 164 | 388 | 170 | 292 | 379 | 169 |
| Arrive On Green | 0.27 | 0.84 | 0.84 | 0.23 | 0.53 | 0.53 | 0.09 | 0.11 | 0.11 | 0.08 | 0.11 | 0.00 |
| Sat Flow, veh/h | 3442 | 2971 | 554 | 1774 | 3539 | 1581 | 1774 | 3539 | 1553 | 3442 | 3539 | 1583 |
| Grp Volume(v), veh/h | 408 | 608 | 606 | 90 | 873 | 136 | 271 | 271 | 88 | 241 | 229 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1770 | 1755 | 1774 | 1770 | 1581 | 1774 | 1770 | 1553 | 1721 | 1770 | 1583 |
| Q Serve(g_s), s | 14.8 | 22.7 | 22.9 | 5.3 | 20.0 | 5.8 | 12.0 | 9.6 | 5.4 | 9.0 | 8.0 | 0.0 |
| Cycle Q Clear(g_c), s | 14.8 | 22.7 | 22.9 | 5.3 | 20.0 | 5.8 | 12.0 | 9.6 | 5.4 | 9.0 | 8.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.32 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 460 | 745 | 739 | 412 | 1873 | 837 | 164 | 388 | 170 | 292 | 379 | 169 |
| V/C Ratio(X) | 0.89 | 0.82 | 0.82 | 0.22 | 0.47 | 0.16 | 1.65 | 0.70 | 0.52 | 0.82 | 0.60 | 0.00 |
| Avail Cap(c_a), veh/h | 556 | 745 | 739 | 412 | 1873 | 837 | 164 | 937 | 411 | 318 | 937 | 419 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.82 | 0.82 | 0.82 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 46.7 | 7.8 | 7.8 | 40.4 | 19.1 | 15.8 | 59.0 | 55.8 | 32.8 | 58.5 | 55.4 | 0.0 |
| Incr Delay (d2), s/veh | 11.8 | 8.1 | 8.3 | 0.3 | 0.8 | 0.4 | 320.3 | 2.3 | 2.4 | 15.1 | 1.6 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 7.8 | 11.8 | 12.1 | 2.7 | 9.9 | 2.6 | 20.4 | 4.8 | 2.4 | 4.9 | 4.0 | 0.0 |
| LnGrp Delay(d),s/veh | 58.5 | 15.8 | 16.1 | 40.6 | 20.0 | 16.2 | 379.3 | 58.1 | 35.3 | 73.6 | 57.0 | 0.0 |
| LnGrp LOS | E | B | B | D | B | B | F | E | D | E | E | |
| Approach Vol, veh/h | | 1622 | | | 1099 | | | 630 | | | 470 | |
| Approach Delay, s/veh | | 26.7 | | | 21.2 | | | 193.0 | | | 65.5 | |
| Approach LOS | | C | | | C | | | F | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 15.5 | 60.0 | 15.6 | 18.9 | 21.4 | 74.1 | 16.0 | 18.5 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 4.6 | * 4.6 | 4.0 | 5.3 | 4.0 | 4.6 |
| Max Green Setting (Gmax), s | 10.2 | * 55 | 12.0 | * 34 | 21.0 | 44.7 | 12.0 | 34.4 |
| Max Q Clear Time (g_c+I1), s | 7.3 | 24.9 | 11.0 | 11.6 | 16.8 | 22.0 | 14.0 | 10.0 |
| Green Ext Time (p_c), s | 0.1 | 10.9 | 0.1 | 1.9 | 0.6 | 7.6 | 0.0 | 1.4 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 57.3 |
| HCM 2010 LOS | E |

Notes



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 69 | 204 | 21 | 0 | 55 | 461 | 37 | 1175 | 0 | 581 | 591 | 39 |
| Future Volume (veh/h) | 69 | 204 | 21 | 0 | 55 | 461 | 37 | 1175 | 0 | 581 | 591 | 39 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1827 | 1827 | 1900 | 1827 | 1827 | 1827 | 1827 | 1827 | 1900 | 1827 | 1827 | 1900 |
| Adj Flow Rate, veh/h | 72 | 212 | 5 | 0 | 57 | 0 | 39 | 1224 | 0 | 605 | 616 | 0 |
| Adj No. of Lanes | 1 | 2 | 0 | 1 | 1 | 1 | 1 | 2 | 0 | 2 | 2 | 0 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Cap, veh/h | 92 | 559 | 13 | 2 | 76 | 65 | 56 | 1483 | 0 | 713 | 2170 | 0 |
| Arrive On Green | 0.05 | 0.16 | 0.16 | 0.00 | 0.04 | 0.00 | 0.03 | 0.43 | 0.00 | 0.21 | 0.63 | 0.00 |
| Sat Flow, veh/h | 1740 | 3467 | 82 | 1740 | 1827 | 1553 | 1740 | 3563 | 0 | 3375 | 3563 | 0 |
| Grp Volume(v), veh/h | 72 | 106 | 111 | 0 | 57 | 0 | 39 | 1224 | 0 | 605 | 616 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1740 | 1736 | 1813 | 1740 | 1827 | 1553 | 1740 | 1736 | 0 | 1688 | 1736 | 0 |
| Q Serve(g_s), s | 4.3 | 5.7 | 5.7 | 0.0 | 3.2 | 0.0 | 2.3 | 32.7 | 0.0 | 18.1 | 8.5 | 0.0 |
| Cycle Q Clear(g_c), s | 4.3 | 5.7 | 5.7 | 0.0 | 3.2 | 0.0 | 2.3 | 32.7 | 0.0 | 18.1 | 8.5 | 0.0 |
| Prop In Lane | 1.00 | | 0.04 | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 92 | 280 | 292 | 2 | 76 | 65 | 56 | 1483 | 0 | 713 | 2170 | 0 |
| V/C Ratio(X) | 0.78 | 0.38 | 0.38 | 0.00 | 0.75 | 0.00 | 0.69 | 0.83 | 0.00 | 0.85 | 0.28 | 0.00 |
| Avail Cap(c_a), veh/h | 216 | 480 | 501 | 83 | 366 | 311 | 216 | 2779 | 0 | 1416 | 3871 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 49.1 | 39.3 | 39.3 | 0.0 | 49.7 | 0.0 | 50.2 | 26.6 | 0.0 | 39.8 | 9.0 | 0.0 |
| Incr Delay (d2), s/veh | 13.1 | 0.8 | 0.8 | 0.0 | 13.8 | 0.0 | 14.1 | 1.2 | 0.0 | 2.9 | 0.1 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.4 | 2.8 | 2.9 | 0.0 | 1.9 | 0.0 | 1.3 | 15.9 | 0.0 | 8.7 | 4.0 | 0.0 |
| LnGrp Delay(d),s/veh | 62.2 | 40.1 | 40.1 | 0.0 | 63.5 | 0.0 | 64.4 | 27.8 | 0.0 | 42.7 | 9.0 | 0.0 |
| LnGrp LOS | E | D | D | | E | | E | C | | D | A | |
| Approach Vol, veh/h | | 289 | | | 57 | | | 1263 | | | 1221 | |
| Approach Delay, s/veh | | 45.6 | | | 63.5 | | | 28.9 | | | 25.7 | |
| Approach LOS | | D | | | E | | | C | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 9.2 | 51.8 | 0.0 | 23.9 | 8.4 | 72.6 | 12.6 | 11.4 |
| Change Period (Y+Rc), s | 7.0 | 7.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 | 7.0 |
| Max Green Setting (Gmax), s | 4.0 | 84.0 | 5.0 | 29.0 | 13.0 | 117.0 | 13.0 | 21.0 |
| Max Q Clear Time (g_c+I1), s | 0.1 | 34.7 | 0.0 | 7.7 | 4.3 | 10.5 | 6.3 | 5.2 |
| Green Ext Time (p_c), s | 2.1 | 10.1 | 0.0 | 0.9 | 0.0 | 4.0 | 0.1 | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 29.9 |
| HCM 2010 LOS | C |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 8 | 14 | 2 | 201 | 6 | 2 | 0 | 1219 | 576 | 3 | 632 | 4 |
| Future Volume (veh/h) | 8 | 14 | 2 | 201 | 6 | 2 | 0 | 1219 | 576 | 3 | 632 | 4 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 1 | 6 | 16 | 5 | 2 | 12 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 8 | 15 | 2 | 212 | 6 | 1 | 0 | 1283 | 572 | 3 | 665 | 3 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 20 | 41 | 5 | 233 | 227 | 38 | 1 | 1354 | 1359 | 8 | 2744 | 12 |
| Arrive On Green | 0.01 | 0.03 | 0.03 | 0.13 | 0.15 | 0.15 | 0.00 | 0.73 | 0.73 | 0.00 | 0.76 | 0.76 |
| Sat Flow, veh/h | 1774 | 1610 | 215 | 1774 | 1554 | 259 | 1774 | 1863 | 1583 | 1774 | 3613 | 16 |
| Grp Volume(v), veh/h | 8 | 0 | 17 | 212 | 0 | 7 | 0 | 1283 | 572 | 3 | 326 | 342 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 0 | 1825 | 1774 | 0 | 1813 | 1774 | 1863 | 1583 | 1774 | 1770 | 1860 |
| Q Serve(g_s), s | 0.8 | 0.0 | 1.6 | 21.1 | 0.0 | 0.6 | 0.0 | 108.4 | 14.4 | 0.3 | 9.7 | 9.7 |
| Cycle Q Clear(g_c), s | 0.8 | 0.0 | 1.6 | 21.1 | 0.0 | 0.6 | 0.0 | 108.4 | 14.4 | 0.3 | 9.7 | 9.7 |
| Prop In Lane | 1.00 | | 0.12 | 1.00 | | 0.14 | 1.00 | | 1.00 | 1.00 | | 0.01 |
| Lane Grp Cap(c), veh/h | 20 | 0 | 47 | 233 | 0 | 265 | 1 | 1354 | 1359 | 8 | 1344 | 1412 |
| V/C Ratio(X) | 0.41 | 0.00 | 0.37 | 0.91 | 0.00 | 0.03 | 0.00 | 0.95 | 0.42 | 0.36 | 0.24 | 0.24 |
| Avail Cap(c_a), veh/h | 59 | 0 | 81 | 356 | 0 | 384 | 59 | 1611 | 1577 | 59 | 1530 | 1608 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 88.1 | 0.0 | 85.9 | 76.8 | 0.0 | 65.6 | 0.0 | 21.5 | 2.8 | 88.9 | 6.4 | 6.4 |
| Incr Delay (d2), s/veh | 13.2 | 0.0 | 4.7 | 19.1 | 0.0 | 0.0 | 0.0 | 11.1 | 0.2 | 24.9 | 0.1 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.5 | 0.0 | 0.9 | 11.6 | 0.0 | 0.3 | 0.0 | 59.4 | 6.2 | 0.2 | 4.7 | 5.0 |
| LnGrp Delay(d),s/veh | 101.3 | 0.0 | 90.6 | 95.9 | 0.0 | 65.7 | 0.0 | 32.6 | 3.0 | 113.8 | 6.5 | 6.5 |
| LnGrp LOS | F | | F | F | | E | | C | A | F | A | A |
| Approach Vol, veh/h | | 25 | | | 219 | | | 1855 | | | 671 | |
| Approach Delay, s/veh | | 94.0 | | | 94.9 | | | 23.5 | | | 6.9 | |
| Approach LOS | | F | | | F | | | C | | | A | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 10.0 | 141.1 | 28.6 | 9.6 | 5.8 | 135.3 | 7.0 | 31.2 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 6.0 | 155.0 | 36.0 | 8.0 | 6.0 | 155.0 | 6.0 | 38.0 |
| Max Q Clear Time (g_c+I1), s | 10.0 | 11.7 | 23.1 | 3.6 | 2.3 | 110.4 | 2.8 | 2.6 |
| Green Ext Time (p_c), s | 0.0 | 3.7 | 0.4 | 0.0 | 0.0 | 19.9 | 0.0 | 0.0 |

| Intersection Summary | | |
|---|---|---|
| HCM 2010 Ctrl Delay | | 25.8 |
| HCM 2010 LOS | | C |

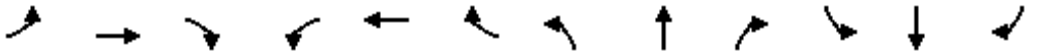


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 194 | 12 | 61 | 39 | 330 | 30 | 1473 | 240 | 216 | 505 | 85 |
| Future Volume (veh/h) | 0 | 194 | 12 | 61 | 39 | 330 | 30 | 1473 | 240 | 216 | 505 | 85 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 0 | 204 | 13 | 52 | 57 | 347 | 32 | 1551 | 0 | 227 | 532 | 0 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 1 | 276 | 18 | 67 | 441 | 374 | 41 | 1752 | 844 | 253 | 2176 | 0 |
| Arrive On Green | 0.00 | 0.16 | 0.16 | 0.04 | 0.24 | 0.24 | 0.02 | 0.49 | 0.00 | 0.14 | 0.61 | 0.00 |
| Sat Flow, veh/h | 1774 | 1733 | 110 | 1774 | 1863 | 1583 | 1774 | 3539 | 1583 | 1774 | 3632 | 0 |
| Grp Volume(v), veh/h | 0 | 0 | 217 | 52 | 57 | 347 | 32 | 1551 | 0 | 227 | 532 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 0 | 1843 | 1774 | 1863 | 1583 | 1774 | 1770 | 1583 | 1774 | 1770 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 17.0 | 4.4 | 3.6 | 32.4 | 2.7 | 59.6 | 0.0 | 19.0 | 10.3 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 0.0 | 17.0 | 4.4 | 3.6 | 32.4 | 2.7 | 59.6 | 0.0 | 19.0 | 10.3 | 0.0 |
| Prop In Lane | 1.00 | | 0.06 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 1 | 0 | 293 | 67 | 441 | 374 | 41 | 1752 | 844 | 253 | 2176 | 0 |
| V/C Ratio(X) | 0.00 | 0.00 | 0.74 | 0.78 | 0.13 | 0.93 | 0.78 | 0.89 | 0.00 | 0.90 | 0.24 | 0.00 |
| Avail Cap(c_a), veh/h | 47 | 0 | 548 | 164 | 677 | 576 | 82 | 2200 | 1044 | 551 | 3136 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 0.0 | 0.0 | 60.6 | 72.1 | 45.5 | 56.5 | 73.5 | 34.3 | 0.0 | 63.7 | 13.2 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 0.0 | 3.7 | 17.2 | 0.1 | 15.6 | 26.7 | 4.0 | 0.0 | 10.7 | 0.1 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 0.0 | 9.0 | 2.5 | 1.9 | 15.8 | 1.6 | 30.0 | 0.0 | 10.1 | 5.0 | 0.0 |
| LnGrp Delay(d),s/veh | 0.0 | 0.0 | 64.3 | 89.3 | 45.6 | 72.0 | 100.2 | 38.3 | 0.0 | 74.4 | 13.3 | 0.0 |
| LnGrp LOS | | | E | F | D | E | F | D | | E | B | |
| Approach Vol, veh/h | | 217 | | | 456 | | | 1583 | | | 759 | |
| Approach Delay, s/veh | | 64.3 | | | 70.7 | | | 39.5 | | | 31.6 | |
| Approach LOS | | E | | | E | | | D | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 27.6 | 81.9 | 11.7 | 30.1 | 9.5 | 100.0 | 0.0 | 41.8 |
| Change Period (Y+Rc), s | 6.0 | 7.0 | 6.0 | 6.0 | 6.0 | 7.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 47.6 | 94.0 | 14.0 | 45.0 | 7.0 | 134.0 | 4.0 | 55.0 |
| Max Q Clear Time (g_c+I1), s | 21.0 | 61.6 | 6.4 | 19.0 | 4.7 | 12.3 | 0.0 | 34.4 |
| Green Ext Time (p_c), s | 0.6 | 13.3 | 0.0 | 1.0 | 0.0 | 3.3 | 0.0 | 1.4 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 44.0 |
| HCM 2010 LOS | D |

Notes



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 116 | 77 | 0 | 0 | 55 | 126 | 0 | 0 | 0 | 255 | 0 | 31 |
| Future Volume (veh/h) | 116 | 77 | 0 | 0 | 55 | 126 | 0 | 0 | 0 | 255 | 0 | 31 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 126 | 84 | 0 | 0 | 60 | 137 | 0 | 0 | 0 | 277 | 0 | 34 |
| Adj No. of Lanes | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 172 | 988 | 0 | 2 | 229 | 205 | 2 | 1339 | 0 | 329 | 1090 | 975 |
| Arrive On Green | 0.10 | 0.28 | 0.00 | 0.00 | 0.13 | 0.12 | 0.00 | 0.00 | 0.00 | 0.19 | 0.00 | 0.61 |
| Sat Flow, veh/h | 1774 | 3632 | 0 | 1774 | 1770 | 1583 | 1774 | 3632 | 0 | 1774 | 1770 | 1583 |
| Grp Volume(v), veh/h | 126 | 84 | 0 | 0 | 60 | 137 | 0 | 0 | 0 | 277 | 0 | 34 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 0 | 1774 | 1770 | 1583 | 1774 | 1770 | 0 | 1774 | 1770 | 1583 |
| Q Serve(g_s), s | 5.3 | 1.3 | 0.0 | 0.0 | 2.3 | 6.3 | 0.0 | 0.0 | 0.0 | 11.5 | 0.0 | 0.7 |
| Cycle Q Clear(g_c), s | 5.3 | 1.3 | 0.0 | 0.0 | 2.3 | 6.3 | 0.0 | 0.0 | 0.0 | 11.5 | 0.0 | 0.7 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 172 | 988 | 0 | 2 | 229 | 205 | 2 | 1339 | 0 | 329 | 1090 | 975 |
| V/C Ratio(X) | 0.73 | 0.08 | 0.00 | 0.00 | 0.26 | 0.67 | 0.00 | 0.00 | 0.00 | 0.84 | 0.00 | 0.03 |
| Avail Cap(c_a), veh/h | 372 | 2087 | 0 | 372 | 1043 | 934 | 372 | 2180 | 0 | 372 | 1090 | 975 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 33.5 | 20.3 | 0.0 | 0.0 | 29.9 | 31.9 | 0.0 | 0.0 | 0.0 | 30.0 | 0.0 | 5.9 |
| Incr Delay (d2), s/veh | 5.8 | 0.0 | 0.0 | 0.0 | 0.6 | 3.7 | 0.0 | 0.0 | 0.0 | 14.6 | 0.0 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.9 | 0.7 | 0.0 | 0.0 | 1.2 | 3.0 | 0.0 | 0.0 | 0.0 | 7.0 | 0.0 | 0.3 |
| LnGrp Delay(d),s/veh | 39.3 | 20.3 | 0.0 | 0.0 | 30.5 | 35.6 | 0.0 | 0.0 | 0.0 | 44.6 | 0.0 | 5.9 |
| LnGrp LOS | D | C | | | C | D | | | | D | | A |
| Approach Vol, veh/h | | 210 | | | 197 | | | 0 | | | 311 | |
| Approach Delay, s/veh | | 31.7 | | | 34.1 | | | 0.0 | | | 40.4 | |
| Approach LOS | | C | | | C | | | | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 18.1 | 32.9 | 0.0 | 25.3 | 0.0 | 51.0 | 11.4 | 13.9 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 15.5 | 46.5 | 15.5 | 44.5 | 15.5 | 46.5 | 15.5 | 44.5 |
| Max Q Clear Time (g_c+I1), s | 13.5 | 0.0 | 0.0 | 3.3 | 0.0 | 2.7 | 7.3 | 8.3 |
| Green Ext Time (p_c), s | 0.2 | 0.0 | 0.0 | 0.5 | 0.0 | 0.1 | 0.2 | 1.1 |

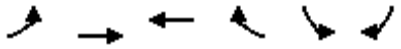
| Intersection Summary | | |
|---|---|---|
| HCM 2010 Ctrl Delay | | 36.1 |
| HCM 2010 LOS | | D |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 11 | 321 | 0 | 0 | 178 | 95 | 0 | 0 | 0 | 115 | 0 | 3 |
| Future Volume (veh/h) | 11 | 321 | 0 | 0 | 178 | 95 | 0 | 0 | 0 | 115 | 0 | 3 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 12 | 349 | 0 | 0 | 193 | 103 | 0 | 0 | 0 | 125 | 0 | 3 |
| Adj No. of Lanes | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 39 | 782 | 0 | 3 | 322 | 165 | 3 | 200 | 0 | 875 | 0 | 1041 |
| Arrive On Green | 0.02 | 0.22 | 0.00 | 0.00 | 0.14 | 0.13 | 0.00 | 0.00 | 0.00 | 0.49 | 0.00 | 0.66 |
| Sat Flow, veh/h | 1774 | 3632 | 0 | 1774 | 2268 | 1160 | 1774 | 1863 | 0 | 1774 | 0 | 1583 |
| Grp Volume(v), veh/h | 12 | 349 | 0 | 0 | 149 | 147 | 0 | 0 | 0 | 125 | 0 | 3 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 0 | 1774 | 1770 | 1658 | 1774 | 1863 | 0 | 1774 | 0 | 1583 |
| Q Serve(g_s), s | 0.5 | 6.0 | 0.0 | 0.0 | 5.5 | 5.9 | 0.0 | 0.0 | 0.0 | 2.7 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.5 | 6.0 | 0.0 | 0.0 | 5.5 | 5.9 | 0.0 | 0.0 | 0.0 | 2.7 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 0.70 | 1.00 | | 0.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 39 | 782 | 0 | 3 | 251 | 235 | 3 | 200 | 0 | 875 | 0 | 1041 |
| V/C Ratio(X) | 0.31 | 0.45 | 0.00 | 0.00 | 0.59 | 0.63 | 0.00 | 0.00 | 0.00 | 0.14 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 545 | 1745 | 0 | 532 | 873 | 818 | 532 | 879 | 0 | 875 | 0 | 1041 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 33.7 | 23.5 | 0.0 | 0.0 | 28.1 | 28.4 | 0.0 | 0.0 | 0.0 | 9.7 | 0.0 | 4.0 |
| Incr Delay (d2), s/veh | 4.4 | 0.4 | 0.0 | 0.0 | 2.2 | 2.7 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.3 | 3.0 | 0.0 | 0.0 | 2.8 | 2.8 | 0.0 | 0.0 | 0.0 | 1.4 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 38.0 | 23.9 | 0.0 | 0.0 | 30.4 | 31.2 | 0.0 | 0.0 | 0.0 | 10.0 | 0.0 | 4.0 |
| LnGrp LOS | D | C | | | C | C | | | | B | | A |
| Approach Vol, veh/h | | 361 | | | 296 | | | 0 | | | 128 | |
| Approach Delay, s/veh | | 24.4 | | | 30.8 | | | 0.0 | | | 9.9 | |
| Approach LOS | | C | | | C | | | | | | A | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 18.5 | 12.0 | 0.0 | 19.5 | 0.0 | 50.5 | 5.5 | 13.9 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 14.0 | 33.0 | 21.0 | 34.0 | 21.0 | 46.0 | 21.0 | 34.0 |
| Max Q Clear Time (g_c+I1), s | 4.7 | 0.0 | 0.0 | 8.0 | 0.0 | 2.0 | 2.5 | 7.9 |
| Green Ext Time (p_c), s | 0.3 | 0.0 | 0.0 | 2.1 | 0.0 | 0.0 | 0.0 | 1.6 |

| Intersection Summary | | |
|---|---|---|
| HCM 2010 Ctrl Delay | | 24.4 |
| HCM 2010 LOS | | C |



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 231 | 277 | 199 | 385 | 832 | 127 |
| Future Volume (veh/h) | 231 | 277 | 199 | 385 | 832 | 127 |
| Number | 5 | 2 | 6 | 16 | 3 | 18 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 296 | 355 | 255 | 494 | 1067 | 163 |
| Adj No. of Lanes | 1 | 3 | 2 | 1 | 2 | 1 |
| Peak Hour Factor | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 327 | 2920 | 1224 | 548 | 1163 | 535 |
| Arrive On Green | 0.18 | 0.57 | 0.35 | 0.35 | 0.34 | 0.34 |
| Sat Flow, veh/h | 1774 | 5253 | 3632 | 1583 | 3442 | 1583 |
| Grp Volume(v), veh/h | 296 | 355 | 255 | 494 | 1067 | 163 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1695 | 1770 | 1583 | 1721 | 1583 |
| Q Serve(g_s), s | 16.7 | 3.3 | 5.2 | 30.4 | 30.5 | 7.8 |
| Cycle Q Clear(g_c), s | 16.7 | 3.3 | 5.2 | 30.4 | 30.5 | 7.8 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 327 | 2920 | 1224 | 548 | 1163 | 535 |
| V/C Ratio(X) | 0.90 | 0.12 | 0.21 | 0.90 | 0.92 | 0.30 |
| Avail Cap(c_a), veh/h | 355 | 3684 | 1700 | 761 | 1236 | 569 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 40.9 | 10.0 | 23.6 | 31.9 | 32.5 | 25.0 |
| Incr Delay (d2), s/veh | 24.6 | 0.0 | 0.1 | 10.9 | 10.5 | 0.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 10.5 | 1.5 | 2.6 | 15.0 | 16.1 | 3.4 |
| LnGrp Delay(d),s/veh | 65.4 | 10.0 | 23.7 | 42.8 | 43.1 | 25.3 |
| LnGrp LOS | E | A | C | D | D | C |
| Approach Vol, veh/h | | 651 | 749 | | 1230 | |
| Approach Delay, s/veh | | 35.2 | 36.3 | | 40.7 | |
| Approach LOS | | D | D | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 63.3 | | | 23.4 | 39.9 | | 39.1 |
| Change Period (Y+Rc), s | | 4.5 | | | 4.5 | 4.5 | | 4.5 |
| Max Green Setting (Gmax), s | | 74.2 | | | 20.5 | 49.2 | | 36.8 |
| Max Q Clear Time (g_c+I1), s | | 5.3 | | | 18.7 | 32.4 | | 32.5 |
| Green Ext Time (p_c), s | | 2.4 | | | 0.2 | 3.0 | | 2.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 38.1 |
| HCM 2010 LOS | D |

Notes



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 208 | 938 | 0 | 0 | 383 | 1108 | 147 | 3 | 170 | 0 | 0 | 0 |
| Future Volume (veh/h) | 208 | 938 | 0 | 0 | 383 | 1108 | 147 | 3 | 170 | 0 | 0 | 0 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 7 | 4 | 14 | | | |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | | | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 0 | 0 | 1863 | 1863 | 1863 | 1863 | 1863 | | | |
| Adj Flow Rate, veh/h | 234 | 1054 | 0 | 0 | 430 | 1245 | 167 | 0 | 191 | | | |
| Adj No. of Lanes | 2 | 3 | 0 | 0 | 1 | 2 | 2 | 0 | 1 | | | |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | | | |
| Percent Heavy Veh, % | 2 | 2 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | | | |
| Cap, veh/h | 354 | 3411 | 0 | 0 | 942 | 1602 | 585 | 0 | 261 | | | |
| Arrive On Green | 0.10 | 0.67 | 0.00 | 0.00 | 0.51 | 0.51 | 0.16 | 0.00 | 0.16 | | | |
| Sat Flow, veh/h | 3442 | 5253 | 0 | 0 | 1863 | 3167 | 3548 | 0 | 1583 | | | |
| Grp Volume(v), veh/h | 234 | 1054 | 0 | 0 | 430 | 1245 | 167 | 0 | 191 | | | |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1695 | 0 | 0 | 1863 | 1583 | 1774 | 0 | 1583 | | | |
| Q Serve(g_s), s | 4.2 | 5.6 | 0.0 | 0.0 | 9.6 | 20.6 | 2.7 | 0.0 | 7.4 | | | |
| Cycle Q Clear(g_c), s | 4.2 | 5.6 | 0.0 | 0.0 | 9.6 | 20.6 | 2.7 | 0.0 | 7.4 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 1.00 | 1.00 | | 1.00 | | | |
| Lane Grp Cap(c), veh/h | 354 | 3411 | 0 | 0 | 942 | 1602 | 585 | 0 | 261 | | | |
| V/C Ratio(X) | 0.66 | 0.31 | 0.00 | 0.00 | 0.46 | 0.78 | 0.29 | 0.00 | 0.73 | | | |
| Avail Cap(c_a), veh/h | 854 | 5811 | 0 | 0 | 1551 | 2637 | 2514 | 0 | 1122 | | | |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | | | |
| Uniform Delay (d), s/veh | 27.9 | 4.4 | 0.0 | 0.0 | 10.2 | 13.0 | 23.6 | 0.0 | 25.6 | | | |
| Incr Delay (d2), s/veh | 2.1 | 0.1 | 0.0 | 0.0 | 0.3 | 0.8 | 0.3 | 0.0 | 3.9 | | | |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| %ile BackOfQ(50%),veh/ln | 2.1 | 2.6 | 0.0 | 0.0 | 5.0 | 9.0 | 1.3 | 0.0 | 6.5 | | | |
| LnGrp Delay(d),s/veh | 30.0 | 4.5 | 0.0 | 0.0 | 10.6 | 13.8 | 23.9 | 0.0 | 29.5 | | | |
| LnGrp LOS | C | A | | | B | B | C | | C | | | |
| Approach Vol, veh/h | | 1288 | | | 1675 | | | 358 | | | | |
| Approach Delay, s/veh | | 9.1 | | | 13.0 | | | 26.9 | | | | |
| Approach LOS | | A | | | B | | | C | | | | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | |
| Phs Duration (G+Y+Rc), s | | 48.6 | | 15.9 | 10.6 | 37.9 | | |
| Change Period (Y+Rc), s | | 5.3 | | 5.3 | 4.0 | 5.3 | | |
| Max Green Setting (Gmax), s | | 73.7 | | 45.7 | 16.0 | 53.7 | | |
| Max Q Clear Time (g_c+I1), s | | 7.6 | | 9.4 | 6.2 | 22.6 | | |
| Green Ext Time (p_c), s | | 8.6 | | 1.3 | 0.5 | 10.0 | | |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 13.0 |
| HCM 2010 LOS | B |

Notes

| Intersection | |
|---|---|
| Int Delay, s/veh | 40.3 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 99 | 398 | 24 | 50 | 440 | 64 |
| Future Vol, veh/h | 99 | 398 | 24 | 50 | 440 | 64 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 105 | 423 | 26 | 53 | 468 | 68 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1057 | 53 | 0 | 0 | 79 | 0 |
| Stage 1 | 53 | - | - | - | - | - |
| Stage 2 | 1004 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 249 | 1014 | - | - | 1519 | - |
| Stage 1 | 970 | - | - | - | - | - |
| Stage 2 | 354 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 169 | 1014 | - | - | 1519 | - |
| Mov Cap-2 Maneuver | 169 | - | - | - | - | - |
| Stage 1 | 660 | - | - | - | - | - |
| Stage 2 | 354 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 79.6 | 0 | 7.4 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 508 | 1519 | - |
| HCM Lane V/C Ratio | - | - | 1.041 | 0.308 | - |
| HCM Control Delay (s) | - | - | 79.6 | 8.4 | 0 |
| HCM Lane LOS | - | - | F | A | A |
| HCM 95th %tile Q(veh) | - | - | 15.4 | 1.3 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 19 | 622 | 639 | 39 | 30 | 3 |
| Future Vol, veh/h | 19 | 622 | 639 | 39 | 30 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 21 | 676 | 695 | 42 | 33 | 3 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 737 | 0 | - | 0 | 1434 | 716 |
| Stage 1 | - | - | - | - | 716 | - |
| Stage 2 | - | - | - | - | 718 | - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | 869 | - | - | - | 147 | 430 |
| Stage 1 | - | - | - | - | 484 | - |
| Stage 2 | - | - | - | - | 483 | - |
| Platoon blocked, % | | | - | - | - | |
| Mov Cap-1 Maneuver | 869 | - | - | - | 143 | 430 |
| Mov Cap-2 Maneuver | - | - | - | - | 143 | - |
| Stage 1 | - | - | - | - | 472 | - |
| Stage 2 | - | - | - | - | 483 | - |

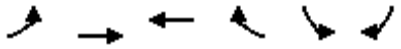
| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.3 | 0 | 35.9 |
| HCM LOS | | | E |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 869 | - | - | - | 152 |
| HCM Lane V/C Ratio | 0.024 | - | - | - | 0.236 |
| HCM Control Delay (s) | 9.2 | - | - | - | 35.9 |
| HCM Lane LOS | A | - | - | - | E |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 0.9 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 452 | 200 | 300 | 618 | 60 | 300 |
| Future Volume (veh/h) | 452 | 200 | 300 | 618 | 60 | 300 |
| Number | 4 | 14 | 3 | 8 | 5 | 12 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 491 | 217 | 326 | 672 | 65 | 326 |
| Adj No. of Lanes | 2 | 0 | 1 | 2 | 1 | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 679 | 298 | 397 | 2084 | 441 | 393 |
| Arrive On Green | 0.28 | 0.28 | 0.22 | 0.59 | 0.25 | 0.25 |
| Sat Flow, veh/h | 2487 | 1052 | 1774 | 3632 | 1774 | 1583 |
| Grp Volume(v), veh/h | 362 | 346 | 326 | 672 | 65 | 326 |
| Grp Sat Flow(s),veh/h/ln | 1770 | 1677 | 1774 | 1770 | 1774 | 1583 |
| Q Serve(g_s), s | 10.2 | 10.3 | 9.7 | 5.3 | 1.6 | 10.8 |
| Cycle Q Clear(g_c), s | 10.2 | 10.3 | 9.7 | 5.3 | 1.6 | 10.8 |
| Prop In Lane | | 0.63 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 502 | 476 | 397 | 2084 | 441 | 393 |
| V/C Ratio(X) | 0.72 | 0.73 | 0.82 | 0.32 | 0.15 | 0.83 |
| Avail Cap(c_a), veh/h | 822 | 779 | 882 | 3692 | 747 | 667 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 17.8 | 17.9 | 20.4 | 5.8 | 16.2 | 19.7 |
| Incr Delay (d2), s/veh | 2.0 | 2.1 | 4.2 | 0.1 | 0.2 | 4.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 5.2 | 5.0 | 5.2 | 2.5 | 0.8 | 5.2 |
| LnGrp Delay(d),s/veh | 19.8 | 20.0 | 24.6 | 5.9 | 16.4 | 24.2 |
| LnGrp LOS | B | C | C | A | B | C |
| Approach Vol, veh/h | 708 | | | 998 | 391 | |
| Approach Delay, s/veh | 19.9 | | | 12.0 | 22.9 | |
| Approach LOS | B | | | B | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | 3 | 4 | | | | 8 |
| Phs Duration (G+Y+Rc), s | | 18.2 | 16.9 | 20.2 | | | | 37.1 |
| Change Period (Y+Rc), s | | 4.5 | 4.5 | 4.5 | | | | 4.5 |
| Max Green Setting (Gmax), s | | 23.3 | 27.5 | 25.7 | | | | 57.7 |
| Max Q Clear Time (g_c+I1), s | | 12.8 | 11.7 | 12.3 | | | | 7.3 |
| Green Ext Time (p_c), s | | 1.0 | 0.8 | 3.4 | | | | 4.5 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 16.7 |
| HCM 2010 LOS | B |



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 40 | 612 | 631 | 161 | 411 | 47 |
| Future Volume (veh/h) | 40 | 612 | 631 | 161 | 411 | 47 |
| Number | 7 | 4 | 8 | 18 | 1 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 43 | 665 | 686 | 47 | 447 | 36 |
| Adj No. of Lanes | 1 | 2 | 2 | 1 | 1 | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 187 | 1758 | 1051 | 470 | 546 | 487 |
| Arrive On Green | 0.11 | 0.50 | 0.30 | 0.30 | 0.31 | 0.31 |
| Sat Flow, veh/h | 1774 | 3632 | 3632 | 1583 | 1774 | 1583 |
| Grp Volume(v), veh/h | 43 | 665 | 686 | 47 | 447 | 36 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1770 | 1583 | 1774 | 1583 |
| Q Serve(g_s), s | 1.1 | 5.5 | 8.0 | 1.0 | 11.1 | 0.8 |
| Cycle Q Clear(g_c), s | 1.1 | 5.5 | 8.0 | 1.0 | 11.1 | 0.8 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 187 | 1758 | 1051 | 470 | 546 | 487 |
| V/C Ratio(X) | 0.23 | 0.38 | 0.65 | 0.10 | 0.82 | 0.07 |
| Avail Cap(c_a), veh/h | 355 | 3179 | 2137 | 956 | 1418 | 1266 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 19.5 | 7.4 | 14.6 | 12.1 | 15.2 | 11.7 |
| Incr Delay (d2), s/veh | 0.6 | 0.1 | 0.7 | 0.1 | 3.1 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.5 | 2.7 | 4.0 | 0.5 | 5.8 | 0.8 |
| LnGrp Delay(d),s/veh | 20.1 | 7.5 | 15.3 | 12.2 | 18.3 | 11.7 |
| LnGrp LOS | C | A | B | B | B | B |
| Approach Vol, veh/h | | 708 | 733 | | 483 | |
| Approach Delay, s/veh | | 8.3 | 15.1 | | 17.9 | |
| Approach LOS | | A | B | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | | | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | | | 28.9 | | 18.6 | 9.5 | 19.4 |
| Change Period (Y+Rc), s | | | | 5.3 | | 4.0 | 4.5 | 5.3 |
| Max Green Setting (Gmax), s | | | | 42.7 | | 38.0 | 9.5 | 28.7 |
| Max Q Clear Time (g_c+I1), s | | | | 7.5 | | 13.1 | 3.1 | 10.0 |
| Green Ext Time (p_c), s | | | | 4.5 | | 1.6 | 0.0 | 4.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 13.3 |
| HCM 2010 LOS | B |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 77 | 909 | 138 | 603 | 944 | 93 | 74 | 207 | 469 | 72 | 491 | 13 |
| Future Volume (veh/h) | 77 | 909 | 138 | 603 | 944 | 93 | 74 | 207 | 469 | 72 | 491 | 13 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.96 | 1.00 | | 0.95 | 1.00 | | 0.49 | 1.00 | | 0.69 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 83 | 977 | 97 | 648 | 1015 | 92 | 80 | 223 | 248 | 77 | 528 | 13 |
| Adj No. of Lanes | 1 | 2 | 0 | 2 | 2 | 0 | 1 | 1 | 2 | 1 | 1 | 0 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 105 | 972 | 96 | 623 | 1377 | 125 | 84 | 544 | 901 | 99 | 545 | 13 |
| Arrive On Green | 0.06 | 0.30 | 0.30 | 0.18 | 0.42 | 0.42 | 0.05 | 0.29 | 0.29 | 0.06 | 0.30 | 0.30 |
| Sat Flow, veh/h | 1774 | 3239 | 321 | 3442 | 3267 | 296 | 1774 | 1863 | 1361 | 1774 | 1787 | 44 |
| Grp Volume(v), veh/h | 83 | 534 | 540 | 648 | 550 | 557 | 80 | 223 | 248 | 77 | 0 | 541 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1791 | 1721 | 1770 | 1794 | 1774 | 1863 | 680 | 1774 | 0 | 1831 |
| Q Serve(g_s), s | 4.8 | 31.5 | 31.5 | 19.0 | 27.4 | 27.4 | 4.7 | 10.1 | 12.3 | 4.5 | 0.0 | 30.6 |
| Cycle Q Clear(g_c), s | 4.8 | 31.5 | 31.5 | 19.0 | 27.4 | 27.4 | 4.7 | 10.1 | 12.3 | 4.5 | 0.0 | 30.6 |
| Prop In Lane | 1.00 | | 0.18 | 1.00 | | 0.17 | 1.00 | | 1.00 | 1.00 | | 0.02 |
| Lane Grp Cap(c), veh/h | 105 | 531 | 537 | 623 | 746 | 756 | 84 | 544 | 901 | 99 | 0 | 558 |
| V/C Ratio(X) | 0.79 | 1.01 | 1.01 | 1.04 | 0.74 | 0.74 | 0.95 | 0.41 | 0.28 | 0.78 | 0.00 | 0.97 |
| Avail Cap(c_a), veh/h | 118 | 531 | 537 | 623 | 746 | 756 | 84 | 544 | 901 | 169 | 0 | 558 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 48.7 | 36.8 | 36.8 | 43.0 | 25.5 | 25.5 | 49.9 | 29.9 | 17.8 | 48.9 | 0.0 | 36.0 |
| Incr Delay (d2), s/veh | 26.4 | 40.4 | 40.3 | 47.0 | 4.0 | 4.0 | 80.1 | 0.5 | 0.2 | 12.4 | 0.0 | 30.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.1 | 21.3 | 21.5 | 13.1 | 14.1 | 14.3 | 4.2 | 5.3 | 2.3 | 2.5 | 0.0 | 20.2 |
| LnGrp Delay(d),s/veh | 75.1 | 77.1 | 77.0 | 90.0 | 29.5 | 29.4 | 130.0 | 30.4 | 18.0 | 61.3 | 0.0 | 66.3 |
| LnGrp LOS | E | F | F | F | C | C | F | C | B | E | | E |
| Approach Vol, veh/h | | 1157 | | | 1755 | | | 551 | | | 618 | |
| Approach Delay, s/veh | | 76.9 | | | 51.8 | | | 39.3 | | | 65.7 | |
| Approach LOS | | E | | | D | | | D | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 13.0 | 37.0 | 9.0 | 36.0 | 10.2 | 49.8 | 10.3 | 34.7 |
| Change Period (Y+Rc), s | 4.0 | 5.5 | 4.0 | 4.0 | 4.0 | 5.5 | 4.5 | 4.0 |
| Max Green Setting (Gmax), s | 9.0 | 31.5 | 5.0 | 32.0 | 7.0 | 43.5 | 10.0 | 26.5 |
| Max Q Clear Time (g_c+I1), s | 21.0 | 33.5 | 6.7 | 32.6 | 6.8 | 29.4 | 6.5 | 14.3 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 6.7 | 0.0 | 2.8 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 59.4 |
| HCM 2010 LOS | E |

| Intersection | |
|---|---|
| Int Delay, s/veh | 7.9 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 1412 | 35 | 13 | 1640 | 23 | 75 |
| Future Vol, veh/h | 1412 | 35 | 13 | 1640 | 23 | 75 |
| Conflicting Peds, #/hr | 0 | 1 | 1 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 150 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 93 | 93 | 93 | 93 | 93 | 93 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1518 | 38 | 14 | 1763 | 25 | 81 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 1557 | 0 | 2448 | 779 |
| Stage 1 | - | - | - | - | 1538 | - |
| Stage 2 | - | - | - | - | 910 | - |
| Critical Hdwy | - | - | 4.14 | - | 6.84 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 | - |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 | 3.32 |
| Pot Cap-1 Maneuver | - | - | 421 | - | 26 | 339 |
| Stage 1 | - | - | - | - | 163 | - |
| Stage 2 | - | - | - | - | 353 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 421 | - | 25 | 339 |
| Mov Cap-2 Maneuver | - | - | - | - | 25 | - |
| Stage 1 | - | - | - | - | 157 | - |
| Stage 2 | - | - | - | - | 353 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.1 | 257.7 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 86 | - | - | 421 | - |
| HCM Lane V/C Ratio | 1.225 | - | - | 0.033 | - |
| HCM Control Delay (s) | 257.7 | - | - | 13.8 | - |
| HCM Lane LOS | F | - | - | B | - |
| HCM 95th %tile Q(veh) | 7.6 | - | - | 0.1 | - |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 72 | 1321 | 114 | 38 | 1237 | 53 | 215 | 104 | 71 | 164 | 126 | 229 |
| Future Volume (veh/h) | 72 | 1321 | 114 | 38 | 1237 | 53 | 215 | 104 | 71 | 164 | 126 | 229 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.98 | 1.00 | | 1.00 | 1.00 | | 0.99 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 81 | 1484 | 122 | 43 | 1390 | 60 | 242 | 117 | -1 | 184 | 142 | 193 |
| Adj No. of Lanes | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 102 | 1241 | 101 | 215 | 1548 | 67 | 259 | 453 | 385 | 209 | 153 | 208 |
| Arrive On Green | 0.06 | 0.37 | 0.37 | 0.12 | 0.45 | 0.45 | 0.15 | 0.24 | 0.00 | 0.12 | 0.22 | 0.22 |
| Sat Flow, veh/h | 1774 | 3313 | 271 | 1774 | 3453 | 149 | 1774 | 1863 | 1583 | 1774 | 712 | 968 |
| Grp Volume(v), veh/h | 81 | 789 | 817 | 43 | 711 | 739 | 242 | 117 | -1 | 184 | 0 | 335 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1814 | 1774 | 1770 | 1832 | 1774 | 1863 | 1583 | 1774 | 0 | 1681 |
| Q Serve(g_s), s | 5.9 | 48.7 | 48.7 | 2.8 | 48.2 | 48.5 | 17.5 | 6.6 | 0.0 | 13.3 | 0.0 | 25.4 |
| Cycle Q Clear(g_c), s | 5.9 | 48.7 | 48.7 | 2.8 | 48.2 | 48.5 | 17.5 | 6.6 | 0.0 | 13.3 | 0.0 | 25.4 |
| Prop In Lane | 1.00 | | 0.15 | 1.00 | | 0.08 | 1.00 | | 1.00 | 1.00 | | 0.58 |
| Lane Grp Cap(c), veh/h | 102 | 663 | 680 | 215 | 793 | 821 | 259 | 453 | 385 | 209 | 0 | 362 |
| V/C Ratio(X) | 0.80 | 1.19 | 1.20 | 0.20 | 0.90 | 0.90 | 0.93 | 0.26 | 0.00 | 0.88 | 0.00 | 0.93 |
| Avail Cap(c_a), veh/h | 150 | 663 | 680 | 218 | 793 | 821 | 259 | 453 | 385 | 259 | 0 | 375 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.80 | 0.80 | 0.80 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 60.5 | 40.6 | 40.7 | 51.5 | 33.1 | 33.2 | 54.9 | 39.7 | 0.0 | 56.4 | 0.0 | 50.0 |
| Incr Delay (d2), s/veh | 9.6 | 99.8 | 104.9 | 0.1 | 12.4 | 12.3 | 37.8 | 0.4 | 0.0 | 21.0 | 0.0 | 28.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.2 | 42.1 | 44.2 | 1.4 | 26.2 | 27.2 | 11.3 | 3.4 | 0.0 | 7.7 | 0.0 | 14.7 |
| LnGrp Delay(d),s/veh | 70.1 | 140.5 | 145.6 | 51.6 | 45.5 | 45.5 | 92.6 | 40.1 | 0.0 | 77.4 | 0.0 | 78.6 |
| LnGrp LOS | E | F | F | D | D | D | F | D | | E | | E |
| Approach Vol, veh/h | | 1687 | | | 1493 | | | 358 | | | 519 | |
| Approach Delay, s/veh | | 139.6 | | | 45.7 | | | 75.7 | | | 78.2 | |
| Approach LOS | | F | | | D | | | E | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 21.0 | 54.0 | 23.0 | 32.0 | 11.5 | 63.6 | 19.3 | 35.6 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 4.0 | 4.0 | 4.0 | 5.3 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 16.0 | * 49 | 19.0 | 29.0 | 11.0 | 53.7 | 19.0 | 29.0 |
| Max Q Clear Time (g_c+I1), s | 4.8 | 50.7 | 19.5 | 27.4 | 7.9 | 50.5 | 15.3 | 8.6 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | 0.0 | 0.4 | 0.0 | 3.1 | 0.1 | 0.8 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 91.5 |
| HCM 2010 LOS | F |

Notes



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 40 | 1420 | 99 | 127 | 1253 | 68 | 54 | 11 | 77 | 25 | 7 | 21 |
| Future Volume (veh/h) | 40 | 1420 | 99 | 127 | 1253 | 68 | 54 | 11 | 77 | 25 | 7 | 21 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 44 | 1578 | 76 | 141 | 1392 | 62 | 60 | 12 | 47 | 28 | 8 | 6 |
| Adj No. of Lanes | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 605 | 2475 | 1107 | 194 | 1435 | 642 | 135 | 139 | 118 | 61 | 33 | 25 |
| Arrive On Green | 0.68 | 1.00 | 1.00 | 0.06 | 0.41 | 0.41 | 0.08 | 0.07 | 0.07 | 0.03 | 0.03 | 0.03 |
| Sat Flow, veh/h | 1774 | 3539 | 1583 | 3442 | 3539 | 1583 | 1774 | 1863 | 1583 | 1774 | 990 | 742 |
| Grp Volume(v), veh/h | 44 | 1578 | 76 | 141 | 1392 | 62 | 60 | 12 | 47 | 28 | 0 | 14 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1583 | 1721 | 1770 | 1583 | 1774 | 1863 | 1583 | 1774 | 0 | 1732 |
| Q Serve(g_s), s | 1.1 | 0.0 | 0.0 | 5.2 | 50.1 | 2.6 | 4.2 | 0.8 | 3.7 | 2.0 | 0.0 | 1.0 |
| Cycle Q Clear(g_c), s | 1.1 | 0.0 | 0.0 | 5.2 | 50.1 | 2.6 | 4.2 | 0.8 | 3.7 | 2.0 | 0.0 | 1.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.43 |
| Lane Grp Cap(c), veh/h | 605 | 2475 | 1107 | 194 | 1435 | 642 | 135 | 139 | 118 | 61 | 0 | 58 |
| V/C Ratio(X) | 0.07 | 0.64 | 0.07 | 0.73 | 0.97 | 0.10 | 0.44 | 0.09 | 0.40 | 0.46 | 0.00 | 0.24 |
| Avail Cap(c_a), veh/h | 605 | 2475 | 1107 | 421 | 1435 | 642 | 176 | 587 | 499 | 108 | 0 | 480 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.09 | 0.09 | 0.09 | 0.68 | 0.68 | 0.68 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 13.8 | 0.0 | 0.0 | 60.4 | 37.9 | 16.1 | 57.4 | 56.0 | 57.4 | 61.6 | 0.0 | 61.2 |
| Incr Delay (d2), s/veh | 0.0 | 0.1 | 0.0 | 1.3 | 13.7 | 0.2 | 0.9 | 0.1 | 0.8 | 2.0 | 0.0 | 0.8 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.5 | 0.0 | 0.0 | 2.5 | 27.1 | 1.2 | 2.1 | 0.4 | 1.6 | 1.0 | 0.0 | 0.5 |
| LnGrp Delay(d),s/veh | 13.8 | 0.1 | 0.0 | 61.7 | 51.6 | 16.3 | 58.3 | 56.1 | 58.2 | 63.6 | 0.0 | 62.0 |
| LnGrp LOS | B | A | A | E | D | B | E | E | E | E | | E |
| Approach Vol, veh/h | | 1698 | | | 1595 | | | 119 | | | 42 | |
| Approach Delay, s/veh | | 0.5 | | | 51.1 | | | 58.0 | | | 63.1 | |
| Approach LOS | | A | | | D | | | E | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 11.4 | 96.2 | 14.0 | 8.4 | 49.7 | 58.0 | 8.6 | 13.8 |
| Change Period (Y+Rc), s | 4.1 | 5.3 | 4.1 | 4.0 | 5.3 | * 5.3 | 4.1 | * 4.1 |
| Max Green Setting (Gmax), s | 15.3 | 47.7 | 12.9 | 36.0 | 10.9 | * 53 | 7.9 | * 41 |
| Max Q Clear Time (g_c+I1), s | 7.2 | 2.0 | 6.2 | 3.0 | 3.1 | 52.1 | 4.0 | 5.7 |
| Green Ext Time (p_c), s | 0.1 | 42.2 | 0.0 | 0.0 | 0.0 | 0.6 | 0.0 | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 26.6 |
| HCM 2010 LOS | C |

Notes

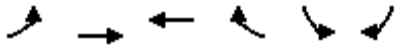


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 55 | 1431 | 35 | 361 | 1343 | 32 | 14 | 32 | 337 | 103 | 29 | 45 |
| Future Volume (veh/h) | 55 | 1431 | 35 | 361 | 1343 | 32 | 14 | 32 | 337 | 103 | 29 | 45 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 62 | 1608 | 30 | 406 | 1509 | 35 | 16 | 36 | 98 | 116 | 33 | 9 |
| Adj No. of Lanes | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 481 | 2049 | 916 | 424 | 1489 | 665 | 146 | 192 | 163 | 109 | 116 | 32 |
| Arrive On Green | 0.54 | 1.00 | 1.00 | 0.12 | 0.42 | 0.42 | 0.08 | 0.10 | 0.10 | 0.06 | 0.08 | 0.08 |
| Sat Flow, veh/h | 1774 | 3539 | 1583 | 3442 | 3539 | 1581 | 1774 | 1863 | 1579 | 1774 | 1409 | 384 |
| Grp Volume(v), veh/h | 62 | 1608 | 30 | 406 | 1509 | 35 | 16 | 36 | 98 | 116 | 0 | 42 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1583 | 1721 | 1770 | 1581 | 1774 | 1863 | 1579 | 1774 | 0 | 1794 |
| Q Serve(g_s), s | 2.2 | 0.0 | 0.0 | 15.2 | 54.7 | 1.3 | 1.1 | 2.3 | 7.7 | 8.0 | 0.0 | 2.9 |
| Cycle Q Clear(g_c), s | 2.2 | 0.0 | 0.0 | 15.2 | 54.7 | 1.3 | 1.1 | 2.3 | 7.7 | 8.0 | 0.0 | 2.9 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.21 |
| Lane Grp Cap(c), veh/h | 481 | 2049 | 916 | 424 | 1489 | 665 | 146 | 192 | 163 | 109 | 0 | 148 |
| V/C Ratio(X) | 0.13 | 0.78 | 0.03 | 0.96 | 1.01 | 0.05 | 0.11 | 0.19 | 0.60 | 1.06 | 0.00 | 0.28 |
| Avail Cap(c_a), veh/h | 481 | 2049 | 916 | 424 | 1489 | 665 | 146 | 602 | 510 | 109 | 0 | 579 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.72 | 0.72 | 0.72 | 0.77 | 0.77 | 0.77 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 22.2 | 0.0 | 0.0 | 56.7 | 37.7 | 13.2 | 55.2 | 53.3 | 55.7 | 61.0 | 0.0 | 56.0 |
| Incr Delay (d2), s/veh | 0.0 | 2.3 | 0.0 | 27.8 | 23.7 | 0.1 | 0.1 | 0.2 | 1.3 | 104.0 | 0.0 | 0.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.1 | 0.6 | 0.0 | 8.9 | 31.6 | 0.6 | 0.5 | 1.2 | 3.4 | 7.1 | 0.0 | 1.4 |
| LnGrp Delay(d),s/veh | 22.2 | 2.3 | 0.0 | 84.5 | 61.4 | 13.3 | 55.4 | 53.5 | 57.0 | 165.3 | 0.0 | 56.4 |
| LnGrp LOS | C | A | A | F | F | B | E | D | E | F | | E |
| Approach Vol, veh/h | | 1700 | | | 1950 | | | 150 | | | 158 | |
| Approach Delay, s/veh | | 3.0 | | | 65.4 | | | 56.0 | | | 136.4 | |
| Approach LOS | | A | | | E | | | E | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 20.0 | 80.6 | 14.7 | 14.7 | 40.6 | 60.0 | 12.0 | 17.4 |
| Change Period (Y+Rc), s | 4.0 | 5.3 | 4.0 | 4.0 | 5.3 | * 5.3 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 16.0 | 46.7 | 8.0 | 42.0 | 8.0 | * 55 | 8.0 | 42.0 |
| Max Q Clear Time (g_c+I1), s | 17.2 | 2.0 | 3.1 | 4.9 | 4.2 | 56.7 | 10.0 | 9.7 |
| Green Ext Time (p_c), s | 0.0 | 10.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.3 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 41.0 |
| HCM 2010 LOS | D |

Notes



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 253 | 1619 | 852 | 84 | 403 | 885 |
| Future Volume (veh/h) | 253 | 1619 | 852 | 84 | 403 | 885 |
| Number | 7 | 4 | 8 | 18 | 1 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 284 | 1819 | 957 | 0 | 453 | 696 |
| Adj No. of Lanes | 2 | 2 | 3 | 1 | 1 | 2 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 344 | 1907 | 2042 | 636 | 685 | 1076 |
| Arrive On Green | 0.10 | 0.54 | 0.40 | 0.00 | 0.39 | 0.39 |
| Sat Flow, veh/h | 3442 | 3632 | 5253 | 1583 | 1774 | 2787 |
| Grp Volume(v), veh/h | 284 | 1819 | 957 | 0 | 453 | 696 |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1770 | 1695 | 1583 | 1774 | 1393 |
| Q Serve(g_s), s | 9.7 | 58.5 | 16.6 | 0.0 | 25.3 | 24.5 |
| Cycle Q Clear(g_c), s | 9.7 | 58.5 | 16.6 | 0.0 | 25.3 | 24.5 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 344 | 1907 | 2042 | 636 | 685 | 1076 |
| V/C Ratio(X) | 0.83 | 0.95 | 0.47 | 0.00 | 0.66 | 0.65 |
| Avail Cap(c_a), veh/h | 416 | 1932 | 2042 | 636 | 685 | 1076 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.32 | 0.32 | 1.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 53.0 | 26.2 | 26.5 | 0.0 | 30.4 | 30.1 |
| Incr Delay (d2), s/veh | 3.8 | 4.6 | 0.2 | 0.0 | 2.4 | 1.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 4.8 | 29.5 | 7.8 | 0.0 | 12.8 | 18.8 |
| LnGrp Delay(d),s/veh | 56.8 | 30.8 | 26.6 | 0.0 | 32.7 | 31.5 |
| LnGrp LOS | E | C | C | | C | C |
| Approach Vol, veh/h | | 2103 | 957 | | 1149 | |
| Approach Delay, s/veh | | 34.3 | 26.6 | | 32.0 | |
| Approach LOS | | C | C | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | | | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | | | 69.2 | | 50.8 | 16.5 | 52.7 |
| Change Period (Y+Rc), s | | | | 4.5 | | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | | | | 65.5 | | 45.5 | 14.5 | 46.5 |
| Max Q Clear Time (g_c+I1), s | | | | 60.5 | | 27.3 | 11.7 | 18.6 |
| Green Ext Time (p_c), s | | | | 4.2 | | 4.1 | 0.3 | 6.8 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 31.9 |
| HCM 2010 LOS | C |



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 1191 | 831 | 0 | 1530 | 128 | 35 |
| Future Volume (veh/h) | 1191 | 831 | 0 | 1530 | 128 | 35 |
| Number | 4 | 14 | 3 | 8 | 5 | 12 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 0 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 1228 | 857 | 0 | 1577 | 132 | 36 |
| Adj No. of Lanes | 2 | 1 | 0 | 2 | 2 | 1 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 2 | 2 | 0 | 2 | 2 | 2 |
| Cap, veh/h | 2161 | 965 | 0 | 2161 | 1082 | 498 |
| Arrive On Green | 0.61 | 0.61 | 0.00 | 0.61 | 0.31 | 0.31 |
| Sat Flow, veh/h | 3632 | 1581 | 0 | 3725 | 3442 | 1583 |
| Grp Volume(v), veh/h | 1228 | 857 | 0 | 1577 | 132 | 36 |
| Grp Sat Flow(s),veh/h/ln | 1770 | 1581 | 0 | 1770 | 1721 | 1583 |
| Q Serve(g_s), s | 24.8 | 55.3 | 0.0 | 37.6 | 3.3 | 1.9 |
| Cycle Q Clear(g_c), s | 24.8 | 55.3 | 0.0 | 37.6 | 3.3 | 1.9 |
| Prop In Lane | | 1.00 | 0.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 2161 | 965 | 0 | 2161 | 1082 | 498 |
| V/C Ratio(X) | 0.57 | 0.89 | 0.00 | 0.73 | 0.12 | 0.07 |
| Avail Cap(c_a), veh/h | 2610 | 1166 | 0 | 2610 | 1082 | 498 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.84 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 13.9 | 19.9 | 0.0 | 16.4 | 29.3 | 28.8 |
| Incr Delay (d2), s/veh | 0.2 | 7.5 | 0.0 | 0.7 | 0.2 | 0.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 12.2 | 26.1 | 0.0 | 18.4 | 1.6 | 0.9 |
| LnGrp Delay(d),s/veh | 14.2 | 27.4 | 0.0 | 17.1 | 29.5 | 29.1 |
| LnGrp LOS | B | C | | B | C | C |
| Approach Vol, veh/h | 2085 | | | 1577 | 168 | |
| Approach Delay, s/veh | 19.6 | | | 17.1 | 29.5 | |
| Approach LOS | B | | | B | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | | | 8 |
| Phs Duration (G+Y+Rc), s | | 42.2 | | 77.8 | | | | 77.8 |
| Change Period (Y+Rc), s | | 4.5 | | 4.5 | | | | 4.5 |
| Max Green Setting (Gmax), s | | 22.5 | | 88.5 | | | | 88.5 |
| Max Q Clear Time (g_c+I1), s | | 5.3 | | 57.3 | | | | 39.6 |
| Green Ext Time (p_c), s | | 0.5 | | 15.9 | | | | 16.9 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 19.0 |
| HCM 2010 LOS | B |



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 1196 | 30 | 22 | 1490 | 40 | 18 |
| Future Volume (veh/h) | 1196 | 30 | 22 | 1490 | 40 | 18 |
| Number | 2 | 12 | 1 | 6 | 7 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 1329 | 26 | 24 | 1656 | 44 | 10 |
| Adj No. of Lanes | 2 | 1 | 1 | 2 | 1 | 1 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 2865 | 1281 | 40 | 3053 | 117 | 104 |
| Arrive On Green | 0.81 | 0.81 | 0.02 | 0.86 | 0.07 | 0.07 |
| Sat Flow, veh/h | 3632 | 1582 | 1774 | 3632 | 1774 | 1583 |
| Grp Volume(v), veh/h | 1329 | 26 | 24 | 1656 | 44 | 10 |
| Grp Sat Flow(s),veh/h/ln | 1770 | 1582 | 1774 | 1770 | 1774 | 1583 |
| Q Serve(g_s), s | 14.9 | 0.4 | 1.7 | 15.7 | 3.1 | 0.8 |
| Cycle Q Clear(g_c), s | 14.9 | 0.4 | 1.7 | 15.7 | 3.1 | 0.8 |
| Prop In Lane | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 2865 | 1281 | 40 | 3053 | 117 | 104 |
| V/C Ratio(X) | 0.46 | 0.02 | 0.61 | 0.54 | 0.38 | 0.10 |
| Avail Cap(c_a), veh/h | 2865 | 1281 | 150 | 3053 | 368 | 329 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.83 | 0.83 | 0.55 | 0.55 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 3.8 | 2.4 | 63.0 | 2.3 | 58.1 | 57.1 |
| Incr Delay (d2), s/veh | 0.5 | 0.0 | 3.1 | 0.4 | 0.7 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 7.4 | 0.2 | 0.9 | 7.5 | 1.5 | 0.3 |
| LnGrp Delay(d),s/veh | 4.2 | 2.4 | 66.1 | 2.7 | 58.9 | 57.2 |
| LnGrp LOS | A | A | E | A | E | E |
| Approach Vol, veh/h | 1355 | | | 1680 | 54 | |
| Approach Delay, s/veh | 4.2 | | | 3.6 | 58.6 | |
| Approach LOS | A | | | A | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | | 6 | | |
| Phs Duration (G+Y+Rc), s | 6.9 | 110.5 | | 12.6 | | 117.4 | | |
| Change Period (Y+Rc), s | 4.0 | 5.3 | | 4.0 | | 5.3 | | |
| Max Green Setting (Gmax), s | 10.0 | 78.7 | | 27.0 | | 93.7 | | |
| Max Q Clear Time (g_c+I1), s | 3.7 | 16.9 | | 5.1 | | 17.7 | | |
| Green Ext Time (p_c), s | 0.0 | 7.3 | | 0.1 | | 10.9 | | |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 4.8 |
| HCM 2010 LOS | A |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 303 | 784 | 127 | 49 | 895 | 145 | 203 | 140 | 40 | 128 | 186 | 414 |
| Future Volume (veh/h) | 303 | 784 | 127 | 49 | 895 | 145 | 203 | 140 | 40 | 128 | 186 | 414 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 7 | 4 | 14 | 3 | 8 | 18 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 0.99 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 333 | 862 | 131 | 54 | 984 | 66 | 223 | 154 | 7 | 141 | 204 | 0 |
| Adj No. of Lanes | 2 | 2 | 0 | 1 | 2 | 1 | 1 | 2 | 1 | 2 | 2 | 1 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 381 | 1273 | 193 | 400 | 1903 | 840 | 218 | 295 | 131 | 434 | 322 | 144 |
| Arrive On Green | 0.22 | 0.83 | 0.83 | 0.23 | 0.54 | 0.54 | 0.12 | 0.08 | 0.08 | 0.13 | 0.09 | 0.00 |
| Sat Flow, veh/h | 3442 | 3081 | 468 | 1774 | 3539 | 1562 | 1774 | 3539 | 1572 | 3442 | 3539 | 1583 |
| Grp Volume(v), veh/h | 333 | 495 | 498 | 54 | 984 | 66 | 223 | 154 | 7 | 141 | 204 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1770 | 1780 | 1774 | 1770 | 1562 | 1774 | 1770 | 1572 | 1721 | 1770 | 1583 |
| Q Serve(g_s), s | 12.1 | 14.4 | 14.4 | 3.2 | 23.1 | 2.7 | 16.0 | 5.4 | 0.4 | 4.9 | 7.2 | 0.0 |
| Cycle Q Clear(g_c), s | 12.1 | 14.4 | 14.4 | 3.2 | 23.1 | 2.7 | 16.0 | 5.4 | 0.4 | 4.9 | 7.2 | 0.0 |
| Prop In Lane | 1.00 | | 0.26 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 381 | 731 | 735 | 400 | 1903 | 840 | 218 | 295 | 131 | 434 | 322 | 144 |
| V/C Ratio(X) | 0.87 | 0.68 | 0.68 | 0.14 | 0.52 | 0.08 | 1.02 | 0.52 | 0.05 | 0.33 | 0.63 | 0.00 |
| Avail Cap(c_a), veh/h | 424 | 731 | 735 | 400 | 1903 | 840 | 218 | 937 | 416 | 434 | 937 | 419 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.89 | 0.89 | 0.89 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 49.8 | 7.9 | 7.9 | 40.2 | 19.2 | 14.5 | 57.0 | 57.1 | 35.7 | 51.8 | 57.0 | 0.0 |
| Incr Delay (d2), s/veh | 15.4 | 4.5 | 4.5 | 0.2 | 1.0 | 0.2 | 66.5 | 1.4 | 0.2 | 0.4 | 2.1 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 6.5 | 7.5 | 7.5 | 1.6 | 11.5 | 1.2 | 11.9 | 2.7 | 0.2 | 2.3 | 3.6 | 0.0 |
| LnGrp Delay(d),s/veh | 65.2 | 12.4 | 12.3 | 40.4 | 20.3 | 14.7 | 123.7 | 58.5 | 35.9 | 52.2 | 59.1 | 0.0 |
| LnGrp LOS | E | B | B | D | C | B | F | E | D | D | E | |
| Approach Vol, veh/h | | 1326 | | | 1104 | | | 384 | | | 345 | |
| Approach Delay, s/veh | | 25.6 | | | 20.9 | | | 96.0 | | | 56.3 | |
| Approach LOS | | C | | | C | | | F | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 14.6 | 59.0 | 21.0 | 15.4 | 18.4 | 75.2 | 20.0 | 16.4 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 4.6 | * 4.6 | 4.0 | 5.3 | 4.0 | 4.6 |
| Max Green Setting (Gmax), s | 8.0 | * 54 | 16.0 | * 34 | 16.0 | 45.7 | 16.0 | 34.4 |
| Max Q Clear Time (g_c+I1), s | 5.2 | 16.4 | 6.9 | 7.4 | 14.1 | 25.1 | 18.0 | 9.2 |
| Green Ext Time (p_c), s | 0.0 | 8.6 | 0.3 | 0.9 | 0.2 | 7.9 | 0.0 | 1.2 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 35.9 |
| HCM 2010 LOS | D |

Notes



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 43 | 49 | 37 | 0 | 155 | 535 | 20 | 557 | 0 | 366 | 1105 | 57 |
| Future Volume (veh/h) | 43 | 49 | 37 | 0 | 155 | 535 | 20 | 557 | 0 | 366 | 1105 | 57 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1759 | 1759 | 1900 | 1759 | 1759 | 1759 | 1759 | 1759 | 1900 | 1759 | 1759 | 1900 |
| Adj Flow Rate, veh/h | 44 | 51 | 22 | 0 | 160 | 0 | 21 | 574 | 0 | 377 | 1139 | 0 |
| Adj No. of Lanes | 1 | 2 | 0 | 1 | 1 | 1 | 1 | 2 | 0 | 2 | 2 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Cap, veh/h | 69 | 608 | 247 | 2 | 215 | 182 | 40 | 950 | 0 | 510 | 1489 | 0 |
| Arrive On Green | 0.04 | 0.26 | 0.26 | 0.00 | 0.12 | 0.00 | 0.02 | 0.28 | 0.00 | 0.16 | 0.45 | 0.00 |
| Sat Flow, veh/h | 1675 | 2321 | 943 | 1675 | 1759 | 1495 | 1675 | 3431 | 0 | 3250 | 3431 | 0 |
| Grp Volume(v), veh/h | 44 | 36 | 37 | 0 | 160 | 0 | 21 | 574 | 0 | 377 | 1139 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1675 | 1671 | 1593 | 1675 | 1759 | 1495 | 1675 | 1671 | 0 | 1625 | 1671 | 0 |
| Q Serve(g_s), s | 1.8 | 1.1 | 1.2 | 0.0 | 6.2 | 0.0 | 0.9 | 10.5 | 0.0 | 7.8 | 20.3 | 0.0 |
| Cycle Q Clear(g_c), s | 1.8 | 1.1 | 1.2 | 0.0 | 6.2 | 0.0 | 0.9 | 10.5 | 0.0 | 7.8 | 20.3 | 0.0 |
| Prop In Lane | 1.00 | | 0.59 | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 69 | 438 | 417 | 2 | 215 | 182 | 40 | 950 | 0 | 510 | 1489 | 0 |
| V/C Ratio(X) | 0.64 | 0.08 | 0.09 | 0.00 | 0.75 | 0.00 | 0.52 | 0.60 | 0.00 | 0.74 | 0.76 | 0.00 |
| Avail Cap(c_a), veh/h | 284 | 1300 | 1239 | 213 | 1294 | 1100 | 237 | 2694 | 0 | 1885 | 4254 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 33.4 | 19.7 | 19.7 | 0.0 | 30.0 | 0.0 | 34.1 | 21.9 | 0.0 | 28.4 | 16.5 | 0.0 |
| Incr Delay (d2), s/veh | 9.6 | 0.1 | 0.1 | 0.0 | 5.1 | 0.0 | 10.2 | 0.6 | 0.0 | 2.1 | 0.8 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.0 | 0.5 | 0.6 | 0.0 | 3.3 | 0.0 | 0.5 | 4.9 | 0.0 | 3.7 | 9.5 | 0.0 |
| LnGrp Delay(d),s/veh | 43.0 | 19.8 | 19.8 | 0.0 | 35.1 | 0.0 | 44.3 | 22.5 | 0.0 | 30.6 | 17.3 | 0.0 |
| LnGrp LOS | D | B | B | | D | | D | C | | C | B | |
| Approach Vol, veh/h | | 117 | | | 160 | | | 595 | | | 1516 | |
| Approach Delay, s/veh | | 28.5 | | | 35.1 | | | 23.3 | | | 20.6 | |
| Approach LOS | | C | | | D | | | C | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 18.1 | 27.1 | 0.0 | 25.5 | 6.7 | 38.5 | 9.9 | 15.6 |
| Change Period (Y+Rc), s | 7.0 | 7.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 | 7.0 |
| Max Green Setting (Gmax), s | 11.0 | 57.0 | 9.0 | 55.0 | 10.0 | 90.0 | 12.0 | 52.0 |
| Max Q Clear Time (g_c+I1), s | 9.8 | 12.5 | 0.0 | 3.2 | 2.9 | 22.3 | 3.8 | 8.2 |
| Green Ext Time (p_c), s | 1.3 | 3.6 | 0.0 | 0.4 | 0.0 | 9.2 | 0.0 | 0.8 |

| Intersection Summary | | |
|---|---|---|
| HCM 2010 Ctrl Delay | | 22.6 |
| HCM 2010 LOS | | C |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 8 | 14 | 0 | 201 | 6 | 2 | 0 | 1257 | 576 | 3 | 661 | 4 |
| Future Volume (veh/h) | 8 | 14 | 0 | 201 | 6 | 2 | 0 | 1257 | 576 | 3 | 661 | 4 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 1 | 6 | 16 | 5 | 2 | 12 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1845 | 1845 | 1900 | 1845 | 1845 | 1900 | 1845 | 1845 | 1845 | 1845 | 1845 | 1900 |
| Adj Flow Rate, veh/h | 8 | 14 | 0 | 205 | 6 | 1 | 0 | 1283 | 555 | 3 | 674 | 3 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Cap, veh/h | 20 | 44 | 0 | 234 | 224 | 37 | 1 | 1282 | 1298 | 8 | 2632 | 12 |
| Arrive On Green | 0.01 | 0.02 | 0.00 | 0.13 | 0.15 | 0.15 | 0.00 | 0.69 | 0.69 | 0.00 | 0.74 | 0.74 |
| Sat Flow, veh/h | 1757 | 1845 | 0 | 1757 | 1542 | 257 | 1757 | 1845 | 1568 | 1757 | 3578 | 16 |
| Grp Volume(v), veh/h | 8 | 14 | 0 | 205 | 0 | 7 | 0 | 1283 | 555 | 3 | 330 | 347 |
| Grp Sat Flow(s),veh/h/ln | 1757 | 1845 | 0 | 1757 | 0 | 1799 | 1757 | 1845 | 1568 | 1757 | 1752 | 1842 |
| Q Serve(g_s), s | 0.6 | 1.0 | 0.0 | 16.0 | 0.0 | 0.5 | 0.0 | 97.0 | 13.2 | 0.2 | 8.6 | 8.6 |
| Cycle Q Clear(g_c), s | 0.6 | 1.0 | 0.0 | 16.0 | 0.0 | 0.5 | 0.0 | 97.0 | 13.2 | 0.2 | 8.6 | 8.6 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 0.14 | 1.00 | | 1.00 | 1.00 | | 0.01 |
| Lane Grp Cap(c), veh/h | 20 | 44 | 0 | 234 | 0 | 262 | 1 | 1282 | 1298 | 8 | 1289 | 1355 |
| V/C Ratio(X) | 0.40 | 0.32 | 0.00 | 0.88 | 0.00 | 0.03 | 0.00 | 1.00 | 0.43 | 0.36 | 0.26 | 0.26 |
| Avail Cap(c_a), veh/h | 101 | 132 | 0 | 1158 | 0 | 1212 | 101 | 1282 | 1298 | 76 | 1289 | 1355 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 68.5 | 67.0 | 0.0 | 59.4 | 0.0 | 51.2 | 0.0 | 21.3 | 3.2 | 69.2 | 6.0 | 6.0 |
| Incr Delay (d2), s/veh | 12.2 | 4.0 | 0.0 | 10.1 | 0.0 | 0.0 | 0.0 | 25.3 | 0.2 | 24.5 | 0.1 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.4 | 0.6 | 0.0 | 8.4 | 0.0 | 0.2 | 0.0 | 57.8 | 5.6 | 0.2 | 4.2 | 4.4 |
| LnGrp Delay(d),s/veh | 80.7 | 71.0 | 0.0 | 69.5 | 0.0 | 51.2 | 0.0 | 46.6 | 3.4 | 93.7 | 6.1 | 6.1 |
| LnGrp LOS | F | E | | E | | D | | F | A | F | A | A |
| Approach Vol, veh/h | | 22 | | | 212 | | | 1838 | | | 680 | |
| Approach Delay, s/veh | | 74.5 | | | 68.9 | | | 33.6 | | | 6.5 | |
| Approach LOS | | E | | | E | | | C | | | A | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 10.0 | 107.7 | 23.6 | 8.4 | 5.7 | 102.0 | 6.6 | 25.3 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 8.0 | 95.0 | 92.0 | 10.0 | 6.0 | 97.0 | 8.0 | 94.0 |
| Max Q Clear Time (g_c+I1), s | 10.0 | 10.6 | 18.0 | 3.0 | 2.2 | 99.0 | 2.6 | 2.5 |
| Green Ext Time (p_c), s | 0.0 | 3.8 | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Intersection Summary | | |
|---|---|---|
| HCM 2010 Ctrl Delay | | 29.9 |
| HCM 2010 LOS | | C |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 2 | 20 | 22 | 202 | 88 | 280 | 16 | 412 | 185 | 240 | 1334 | 5 |
| Future Volume (veh/h) | 2 | 20 | 22 | 202 | 88 | 280 | 16 | 412 | 185 | 240 | 1334 | 5 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1827 | 1827 | 1900 | 1827 | 1827 | 1827 | 1827 | 1827 | 1827 | 1827 | 1827 | 1900 |
| Adj Flow Rate, veh/h | 2 | 21 | 23 | 150 | 173 | 289 | 16 | 425 | 0 | 247 | 1375 | 0 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Cap, veh/h | 4 | 92 | 100 | 187 | 402 | 342 | 25 | 1181 | 696 | 290 | 1709 | 0 |
| Arrive On Green | 0.00 | 0.11 | 0.11 | 0.11 | 0.22 | 0.22 | 0.01 | 0.34 | 0.00 | 0.17 | 0.49 | 0.00 |
| Sat Flow, veh/h | 1740 | 798 | 874 | 1740 | 1827 | 1553 | 1740 | 3471 | 1553 | 1740 | 3563 | 0 |
| Grp Volume(v), veh/h | 2 | 0 | 44 | 150 | 173 | 289 | 16 | 425 | 0 | 247 | 1375 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1740 | 0 | 1673 | 1740 | 1827 | 1553 | 1740 | 1736 | 1553 | 1740 | 1736 | 0 |
| Q Serve(g_s), s | 0.1 | 0.0 | 2.2 | 7.8 | 7.5 | 16.5 | 0.8 | 8.5 | 0.0 | 12.7 | 30.8 | 0.0 |
| Cycle Q Clear(g_c), s | 0.1 | 0.0 | 2.2 | 7.8 | 7.5 | 16.5 | 0.8 | 8.5 | 0.0 | 12.7 | 30.8 | 0.0 |
| Prop In Lane | 1.00 | | 0.52 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 4 | 0 | 192 | 187 | 402 | 342 | 25 | 1181 | 696 | 290 | 1709 | 0 |
| V/C Ratio(X) | 0.53 | 0.00 | 0.23 | 0.80 | 0.43 | 0.85 | 0.63 | 0.36 | 0.00 | 0.85 | 0.80 | 0.00 |
| Avail Cap(c_a), veh/h | 170 | 0 | 833 | 791 | 1563 | 1328 | 151 | 1729 | 941 | 1244 | 3909 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 46.0 | 0.0 | 37.2 | 40.2 | 31.0 | 34.5 | 45.3 | 22.9 | 0.0 | 37.4 | 19.7 | 0.0 |
| Incr Delay (d2), s/veh | 83.6 | 0.0 | 0.6 | 7.7 | 0.7 | 5.7 | 23.0 | 0.2 | 0.0 | 7.0 | 0.9 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.1 | 0.0 | 1.0 | 4.1 | 3.9 | 7.6 | 0.6 | 4.1 | 0.0 | 6.7 | 14.9 | 0.0 |
| LnGrp Delay(d),s/veh | 129.6 | 0.0 | 37.8 | 47.9 | 31.7 | 40.2 | 68.2 | 23.1 | 0.0 | 44.4 | 20.6 | 0.0 |
| LnGrp LOS | F | | D | D | C | D | E | C | | D | C | |
| Approach Vol, veh/h | | 46 | | | 612 | | | 441 | | | 1622 | |
| Approach Delay, s/veh | | 41.8 | | | 39.7 | | | 24.7 | | | 24.2 | |
| Approach LOS | | D | | | D | | | C | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 21.4 | 38.4 | 15.9 | 16.6 | 7.3 | 52.5 | 6.2 | 26.3 |
| Change Period (Y+Rc), s | 6.0 | 7.0 | 6.0 | 6.0 | 6.0 | 7.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 66.0 | 46.0 | 42.0 | 46.0 | 8.0 | 104.0 | 9.0 | 79.0 |
| Max Q Clear Time (g_c+I1), s | 14.7 | 10.5 | 9.8 | 4.2 | 2.8 | 32.8 | 2.1 | 18.5 |
| Green Ext Time (p_c), s | 0.7 | 2.5 | 0.4 | 0.2 | 0.0 | 12.7 | 0.0 | 1.9 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 28.1 |
| HCM 2010 LOS | C |

Notes

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 76 | 51 | 0 | 0 | 182 | 199 | 0 | 0 | 0 | 201 | 0 | 102 |
| Future Volume (veh/h) | 76 | 51 | 0 | 0 | 182 | 199 | 0 | 0 | 0 | 201 | 0 | 102 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 83 | 55 | 0 | 0 | 198 | 216 | 0 | 0 | 0 | 218 | 0 | 111 |
| Adj No. of Lanes | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 119 | 1111 | 0 | 2 | 342 | 306 | 2 | 1320 | 0 | 272 | 1025 | 918 |
| Arrive On Green | 0.07 | 0.31 | 0.00 | 0.00 | 0.19 | 0.19 | 0.00 | 0.00 | 0.00 | 0.15 | 0.00 | 0.57 |
| Sat Flow, veh/h | 1774 | 3632 | 0 | 1774 | 1770 | 1583 | 1774 | 3632 | 0 | 1774 | 1770 | 1583 |
| Grp Volume(v), veh/h | 83 | 55 | 0 | 0 | 198 | 216 | 0 | 0 | 0 | 218 | 0 | 111 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 0 | 1774 | 1770 | 1583 | 1774 | 1770 | 0 | 1774 | 1770 | 1583 |
| Q Serve(g_s), s | 3.4 | 0.8 | 0.0 | 0.0 | 7.6 | 9.6 | 0.0 | 0.0 | 0.0 | 8.9 | 0.0 | 2.4 |
| Cycle Q Clear(g_c), s | 3.4 | 0.8 | 0.0 | 0.0 | 7.6 | 9.6 | 0.0 | 0.0 | 0.0 | 8.9 | 0.0 | 2.4 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 119 | 1111 | 0 | 2 | 342 | 306 | 2 | 1320 | 0 | 272 | 1025 | 918 |
| V/C Ratio(X) | 0.69 | 0.05 | 0.00 | 0.00 | 0.58 | 0.71 | 0.00 | 0.00 | 0.00 | 0.80 | 0.00 | 0.12 |
| Avail Cap(c_a), veh/h | 366 | 2098 | 0 | 366 | 1049 | 939 | 366 | 2051 | 0 | 366 | 1025 | 918 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 34.2 | 17.9 | 0.0 | 0.0 | 27.5 | 28.5 | 0.0 | 0.0 | 0.0 | 30.7 | 0.0 | 7.3 |
| Incr Delay (d2), s/veh | 7.0 | 0.0 | 0.0 | 0.0 | 1.5 | 3.0 | 0.0 | 0.0 | 0.0 | 8.9 | 0.0 | 0.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.9 | 0.4 | 0.0 | 0.0 | 3.9 | 4.5 | 0.0 | 0.0 | 0.0 | 5.0 | 0.0 | 1.1 |
| LnGrp Delay(d),s/veh | 41.3 | 18.0 | 0.0 | 0.0 | 29.1 | 31.5 | 0.0 | 0.0 | 0.0 | 39.6 | 0.0 | 7.5 |
| LnGrp LOS | D | B | | | C | C | | | | D | | A |
| Approach Vol, veh/h | | 138 | | | 414 | | | 0 | | | 329 | |
| Approach Delay, s/veh | | 32.0 | | | 30.3 | | | 0.0 | | | 28.8 | |
| Approach LOS | | C | | | C | | | | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 15.5 | 32.0 | 0.0 | 27.6 | 0.0 | 47.5 | 9.1 | 18.5 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 15.0 | 43.0 | 15.0 | 44.0 | 15.0 | 43.0 | 15.0 | 44.0 |
| Max Q Clear Time (g_c+I1), s | 10.9 | 0.0 | 0.0 | 2.8 | 0.0 | 4.4 | 5.4 | 11.6 |
| Green Ext Time (p_c), s | 0.2 | 0.0 | 0.0 | 0.3 | 0.0 | 0.6 | 0.1 | 2.4 |

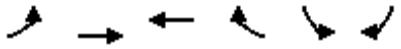
| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 30.0 |
| HCM 2010 LOS | C |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 7 | 245 | 0 | 0 | 372 | 106 | 0 | 0 | 0 | 75 | 0 | 9 |
| Future Volume (veh/h) | 7 | 245 | 0 | 0 | 372 | 106 | 0 | 0 | 0 | 75 | 0 | 9 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 8 | 266 | 0 | 0 | 404 | 115 | 0 | 0 | 0 | 82 | 0 | 10 |
| Adj No. of Lanes | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 33 | 1042 | 0 | 3 | 571 | 161 | 3 | 356 | 0 | 545 | 0 | 894 |
| Arrive On Green | 0.02 | 0.29 | 0.00 | 0.00 | 0.21 | 0.20 | 0.00 | 0.00 | 0.00 | 0.31 | 0.00 | 0.57 |
| Sat Flow, veh/h | 1774 | 3632 | 0 | 1774 | 2728 | 769 | 1774 | 1863 | 0 | 1774 | 0 | 1583 |
| Grp Volume(v), veh/h | 8 | 266 | 0 | 0 | 261 | 258 | 0 | 0 | 0 | 82 | 0 | 10 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 0 | 1774 | 1770 | 1727 | 1774 | 1863 | 0 | 1774 | 0 | 1583 |
| Q Serve(g_s), s | 0.3 | 3.5 | 0.0 | 0.0 | 8.2 | 8.4 | 0.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.2 |
| Cycle Q Clear(g_c), s | 0.3 | 3.5 | 0.0 | 0.0 | 8.2 | 8.4 | 0.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.2 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 0.45 | 1.00 | | 0.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 33 | 1042 | 0 | 3 | 370 | 361 | 3 | 356 | 0 | 545 | 0 | 894 |
| V/C Ratio(X) | 0.24 | 0.26 | 0.00 | 0.00 | 0.70 | 0.72 | 0.00 | 0.00 | 0.00 | 0.15 | 0.00 | 0.01 |
| Avail Cap(c_a), veh/h | 162 | 1087 | 0 | 147 | 544 | 531 | 147 | 649 | 0 | 545 | 0 | 894 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 29.1 | 16.2 | 0.0 | 0.0 | 22.1 | 22.3 | 0.0 | 0.0 | 0.0 | 15.2 | 0.0 | 5.6 |
| Incr Delay (d2), s/veh | 3.7 | 0.1 | 0.0 | 0.0 | 2.5 | 2.6 | 0.0 | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.2 | 1.7 | 0.0 | 0.0 | 4.2 | 4.2 | 0.0 | 0.0 | 0.0 | 1.1 | 0.0 | 0.1 |
| LnGrp Delay(d),s/veh | 32.8 | 16.3 | 0.0 | 0.0 | 24.5 | 24.9 | 0.0 | 0.0 | 0.0 | 15.7 | 0.0 | 5.7 |
| LnGrp LOS | C | B | | | C | C | | | | B | | A |
| Approach Vol, veh/h | | 274 | | | 519 | | | 0 | | | 92 | |
| Approach Delay, s/veh | | 16.8 | | | 24.7 | | | 0.0 | | | 14.6 | |
| Approach LOS | | B | | | C | | | | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 22.5 | 16.0 | 0.0 | 21.7 | 0.0 | 38.5 | 5.1 | 16.6 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 18.0 | 21.0 | 5.0 | 18.0 | 5.0 | 34.0 | 5.0 | 18.0 |
| Max Q Clear Time (g_c+I1), s | 10.4 | 0.0 | 0.0 | 5.5 | 0.0 | 2.2 | 2.3 | 10.4 |
| Green Ext Time (p_c), s | 0.1 | 0.0 | 0.0 | 1.1 | 0.0 | 0.0 | 0.0 | 1.7 |

| Intersection Summary | | |
|---|---|---|
| HCM 2010 Ctrl Delay | | 21.2 |
| HCM 2010 LOS | | C |



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 136 | 158 | 330 | 222 | 1491 | 146 |
| Future Volume (veh/h) | 136 | 158 | 330 | 222 | 1491 | 146 |
| Number | 5 | 2 | 6 | 16 | 3 | 18 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 139 | 161 | 337 | 227 | 1521 | 149 |
| Adj No. of Lanes | 1 | 3 | 2 | 1 | 2 | 1 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 174 | 1787 | 695 | 311 | 1769 | 814 |
| Arrive On Green | 0.10 | 0.35 | 0.20 | 0.20 | 0.51 | 0.51 |
| Sat Flow, veh/h | 1774 | 5253 | 3632 | 1583 | 3442 | 1583 |
| Grp Volume(v), veh/h | 139 | 161 | 337 | 227 | 1521 | 149 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1695 | 1770 | 1583 | 1721 | 1583 |
| Q Serve(g_s), s | 6.0 | 1.7 | 6.7 | 10.6 | 30.3 | 4.0 |
| Cycle Q Clear(g_c), s | 6.0 | 1.7 | 6.7 | 10.6 | 30.3 | 4.0 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 174 | 1787 | 695 | 311 | 1769 | 814 |
| V/C Ratio(X) | 0.80 | 0.09 | 0.49 | 0.73 | 0.86 | 0.18 |
| Avail Cap(c_a), veh/h | 236 | 4111 | 2188 | 979 | 2433 | 1119 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 34.8 | 17.1 | 28.1 | 29.7 | 16.7 | 10.3 |
| Incr Delay (d2), s/veh | 12.8 | 0.0 | 0.5 | 3.3 | 2.5 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.6 | 0.8 | 3.3 | 4.9 | 14.8 | 1.8 |
| LnGrp Delay(d),s/veh | 47.5 | 17.1 | 28.7 | 33.0 | 19.1 | 10.4 |
| LnGrp LOS | D | B | C | C | B | B |
| Approach Vol, veh/h | | 300 | 564 | | 1670 | |
| Approach Delay, s/veh | | 31.2 | 30.4 | | 18.4 | |
| Approach LOS | | C | C | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 33.0 | | | 12.2 | 20.8 | | 45.8 |
| Change Period (Y+Rc), s | | 5.3 | | | 4.5 | 5.3 | | 5.3 |
| Max Green Setting (Gmax), s | | 63.7 | | | 10.5 | 48.7 | | 55.7 |
| Max Q Clear Time (g_c+I1), s | | 3.7 | | | 8.0 | 12.6 | | 32.3 |
| Green Ext Time (p_c), s | | 1.0 | | | 0.1 | 2.9 | | 8.2 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 22.6 |
| HCM 2010 LOS | C |

Notes



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 105 | 1544 | 0 | 0 | 300 | 1066 | 252 | 5 | 255 | 0 | 0 | 0 |
| Future Volume (veh/h) | 105 | 1544 | 0 | 0 | 300 | 1066 | 252 | 5 | 255 | 0 | 0 | 0 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 7 | 4 | 14 | | | |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | | | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 0 | 0 | 1863 | 1863 | 1863 | 1863 | 1863 | | | |
| Adj Flow Rate, veh/h | 111 | 1625 | 0 | 0 | 316 | 1122 | 269 | 0 | 268 | | | |
| Adj No. of Lanes | 2 | 3 | 0 | 0 | 1 | 2 | 2 | 0 | 1 | | | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | | | |
| Percent Heavy Veh, % | 2 | 2 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | | | |
| Cap, veh/h | 199 | 3012 | 0 | 0 | 868 | 1475 | 801 | 0 | 357 | | | |
| Arrive On Green | 0.06 | 0.59 | 0.00 | 0.00 | 0.47 | 0.47 | 0.23 | 0.00 | 0.23 | | | |
| Sat Flow, veh/h | 3442 | 5253 | 0 | 0 | 1863 | 3167 | 3548 | 0 | 1583 | | | |
| Grp Volume(v), veh/h | 111 | 1625 | 0 | 0 | 316 | 1122 | 269 | 0 | 268 | | | |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1695 | 0 | 0 | 1863 | 1583 | 1774 | 0 | 1583 | | | |
| Q Serve(g_s), s | 1.8 | 11.2 | 0.0 | 0.0 | 6.4 | 17.1 | 3.7 | 0.0 | 9.2 | | | |
| Cycle Q Clear(g_c), s | 1.8 | 11.2 | 0.0 | 0.0 | 6.4 | 17.1 | 3.7 | 0.0 | 9.2 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 1.00 | 1.00 | | 1.00 | | | |
| Lane Grp Cap(c), veh/h | 199 | 3012 | 0 | 0 | 868 | 1475 | 801 | 0 | 357 | | | |
| V/C Ratio(X) | 0.56 | 0.54 | 0.00 | 0.00 | 0.36 | 0.76 | 0.34 | 0.00 | 0.75 | | | |
| Avail Cap(c_a), veh/h | 945 | 6432 | 0 | 0 | 1717 | 2919 | 2783 | 0 | 1242 | | | |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | | | |
| Uniform Delay (d), s/veh | 26.7 | 7.1 | 0.0 | 0.0 | 10.0 | 12.9 | 18.9 | 0.0 | 21.0 | | | |
| Incr Delay (d2), s/veh | 2.4 | 0.2 | 0.0 | 0.0 | 0.3 | 0.8 | 0.2 | 0.0 | 3.2 | | | |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| %ile BackOfQ(50%),veh/ln | 0.9 | 5.2 | 0.0 | 0.0 | 3.3 | 7.5 | 1.8 | 0.0 | 4.3 | | | |
| LnGrp Delay(d),s/veh | 29.1 | 7.3 | 0.0 | 0.0 | 10.3 | 13.7 | 19.1 | 0.0 | 24.2 | | | |
| LnGrp LOS | C | A | | | B | B | B | | C | | | |
| Approach Vol, veh/h | | 1736 | | | 1438 | | | 537 | | | | |
| Approach Delay, s/veh | | 8.7 | | | 13.0 | | | 21.7 | | | | |
| Approach LOS | | A | | | B | | | C | | | | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | |
| Phs Duration (G+Y+Rc), s | | 39.8 | | 18.5 | 7.4 | 32.4 | | |
| Change Period (Y+Rc), s | | 5.3 | | 5.3 | 4.0 | 5.3 | | |
| Max Green Setting (Gmax), s | | 73.7 | | 45.7 | 16.0 | 53.7 | | |
| Max Q Clear Time (g_c+I1), s | | 13.2 | | 11.2 | 3.8 | 19.1 | | |
| Green Ext Time (p_c), s | | 17.3 | | 2.0 | 0.2 | 8.1 | | |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 12.2 |
| HCM 2010 LOS | B |

Notes

| Intersection | |
|---|---|
| Int Delay, s/veh | 24.4 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 51 | 433 | 39 | 85 | 502 | 47 |
| Future Vol, veh/h | 51 | 433 | 39 | 85 | 502 | 47 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 93 | 93 | 93 | 93 | 93 | 93 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 55 | 466 | 42 | 91 | 540 | 51 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1219 | 88 | 0 | 0 | 133 | 0 |
| Stage 1 | 88 | - | - | - | - | - |
| Stage 2 | 1131 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 199 | 970 | - | - | 1452 | - |
| Stage 1 | 935 | - | - | - | - | - |
| Stage 2 | 308 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 123 | 970 | - | - | 1452 | - |
| Mov Cap-2 Maneuver | 123 | - | - | - | - | - |
| Stage 1 | 577 | - | - | - | - | - |
| Stage 2 | 308 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 49 | 0 | 8.2 |
| HCM LOS | E | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 562 | 1452 | - |
| HCM Lane V/C Ratio | - | - | 0.926 | 0.372 | - |
| HCM Control Delay (s) | - | - | 49 | 8.9 | 0 |
| HCM Lane LOS | - | - | E | A | A |
| HCM 95th %tile Q(veh) | - | - | 11.6 | 1.7 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 18.2 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 56 | 531 | 466 | 110 | 163 | 18 |
| Future Vol, veh/h | 56 | 531 | 466 | 110 | 163 | 18 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 61 | 577 | 507 | 120 | 177 | 20 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 627 | 0 | - | 0 | 1266 | 567 |
| Stage 1 | - | - | - | - | 567 | - |
| Stage 2 | - | - | - | - | 699 | - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | 955 | - | - | - | 187 | 523 |
| Stage 1 | - | - | - | - | 568 | - |
| Stage 2 | - | - | - | - | 493 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 955 | - | - | - | ~ 175 | 523 |
| Mov Cap-2 Maneuver | - | - | - | - | ~ 175 | - |
| Stage 1 | - | - | - | - | 532 | - |
| Stage 2 | - | - | - | - | 493 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.9 | 0 | 132.2 |
| HCM LOS | | | F |

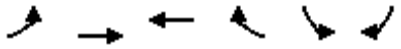
| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 955 | - | - | - | 187 |
| HCM Lane V/C Ratio | 0.064 | - | - | - | 1.052 |
| HCM Control Delay (s) | 9 | - | - | - | 132.2 |
| HCM Lane LOS | A | - | - | - | F |
| HCM 95th %tile Q(veh) | 0.2 | - | - | - | 9.2 |

| Notes | | | |
|---|---|---|---|
| ~: Volume exceeds capacity | $: Delay exceeds 300s | +: Computation Not Defined | *: All major volume in platoon |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 716 | 20 | 0 | 510 | 50 | 100 |
| Future Volume (veh/h) | 716 | 20 | 0 | 510 | 50 | 100 |
| Number | 4 | 14 | 3 | 8 | 5 | 12 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 778 | 22 | 0 | 554 | 54 | 109 |
| Adj No. of Lanes | 2 | 0 | 1 | 2 | 1 | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 1530 | 43 | 7 | 1540 | 358 | 319 |
| Arrive On Green | 0.44 | 0.44 | 0.00 | 0.44 | 0.20 | 0.20 |
| Sat Flow, veh/h | 3609 | 99 | 1774 | 3632 | 1774 | 1583 |
| Grp Volume(v), veh/h | 392 | 408 | 0 | 554 | 54 | 109 |
| Grp Sat Flow(s),veh/h/ln | 1770 | 1845 | 1774 | 1770 | 1774 | 1583 |
| Q Serve(g_s), s | 4.0 | 4.0 | 0.0 | 2.6 | 0.6 | 1.5 |
| Cycle Q Clear(g_c), s | 4.0 | 4.0 | 0.0 | 2.6 | 0.6 | 1.5 |
| Prop In Lane | | 0.05 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 770 | 803 | 7 | 1540 | 358 | 319 |
| V/C Ratio(X) | 0.51 | 0.51 | 0.00 | 0.36 | 0.15 | 0.34 |
| Avail Cap(c_a), veh/h | 3178 | 3313 | 365 | 7726 | 1926 | 1719 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 5.1 | 5.1 | 0.0 | 4.7 | 8.1 | 8.5 |
| Incr Delay (d2), s/veh | 0.5 | 0.5 | 0.0 | 0.1 | 0.2 | 0.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.0 | 2.0 | 0.0 | 1.3 | 0.3 | 0.7 |
| LnGrp Delay(d),s/veh | 5.6 | 5.6 | 0.0 | 4.8 | 8.3 | 9.1 |
| LnGrp LOS | A | A | | A | A | A |
| Approach Vol, veh/h | 800 | | | 554 | 163 | |
| Approach Delay, s/veh | 5.6 | | | 4.8 | 8.9 | |
| Approach LOS | A | | | A | A | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | 3 | 4 | | | | 8 |
| Phs Duration (G+Y+Rc), s | | 9.5 | 0.0 | 15.3 | | | | 15.3 |
| Change Period (Y+Rc), s | | 4.5 | 4.5 | 4.5 | | | | 4.5 |
| Max Green Setting (Gmax), s | | 26.9 | 5.1 | 44.5 | | | | 54.1 |
| Max Q Clear Time (g_c+I1), s | | 3.5 | 0.0 | 6.0 | | | | 4.6 |
| Green Ext Time (p_c), s | | 0.5 | 0.0 | 4.8 | | | | 3.6 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 5.7 |
| HCM 2010 LOS | A |



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 121 | 615 | 520 | 481 | 366 | 40 |
| Future Volume (veh/h) | 121 | 615 | 520 | 481 | 366 | 40 |
| Number | 7 | 4 | 8 | 18 | 1 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 132 | 668 | 565 | 395 | 398 | 28 |
| Adj No. of Lanes | 1 | 2 | 2 | 1 | 1 | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 203 | 1923 | 1204 | 539 | 486 | 434 |
| Arrive On Green | 0.11 | 0.54 | 0.34 | 0.34 | 0.27 | 0.27 |
| Sat Flow, veh/h | 1774 | 3632 | 3632 | 1583 | 1774 | 1583 |
| Grp Volume(v), veh/h | 132 | 668 | 565 | 395 | 398 | 28 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1770 | 1583 | 1774 | 1583 |
| Q Serve(g_s), s | 3.6 | 5.4 | 6.4 | 11.2 | 10.7 | 0.7 |
| Cycle Q Clear(g_c), s | 3.6 | 5.4 | 6.4 | 11.2 | 10.7 | 0.7 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 203 | 1923 | 1204 | 539 | 486 | 434 |
| V/C Ratio(X) | 0.65 | 0.35 | 0.47 | 0.73 | 0.82 | 0.06 |
| Avail Cap(c_a), veh/h | 575 | 3388 | 1927 | 862 | 1116 | 996 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 21.5 | 6.5 | 13.2 | 14.8 | 17.3 | 13.7 |
| Incr Delay (d2), s/veh | 3.5 | 0.1 | 0.3 | 2.0 | 3.5 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.0 | 2.6 | 3.1 | 5.1 | 5.7 | 0.7 |
| LnGrp Delay(d),s/veh | 25.0 | 6.6 | 13.5 | 16.7 | 20.8 | 13.7 |
| LnGrp LOS | C | A | B | B | C | B |
| Approach Vol, veh/h | | 800 | 960 | | 426 | |
| Approach Delay, s/veh | | 9.7 | 14.8 | | 20.3 | |
| Approach LOS | | A | B | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | | | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | | | 32.9 | | 17.9 | 10.3 | 22.6 |
| Change Period (Y+Rc), s | | | | 5.3 | | 4.0 | 4.5 | 5.3 |
| Max Green Setting (Gmax), s | | | | 48.7 | | 32.0 | 16.5 | 27.7 |
| Max Q Clear Time (g_c+I1), s | | | | 7.4 | | 12.7 | 5.6 | 13.2 |
| Green Ext Time (p_c), s | | | | 4.5 | | 1.3 | 0.2 | 4.2 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 14.0 |
| HCM 2010 LOS | B |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 62 | 984 | 16 | 295 | 882 | 222 | 24 | 245 | 464 | 174 | 99 | 45 |
| Future Volume (veh/h) | 62 | 984 | 16 | 295 | 882 | 222 | 24 | 245 | 464 | 174 | 99 | 45 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.95 | 1.00 | | 0.37 | 1.00 | | 0.82 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 72 | 1144 | -36 | 343 | 1026 | 250 | 28 | 285 | 263 | 202 | 115 | 51 |
| Adj No. of Lanes | 1 | 2 | 0 | 2 | 2 | 0 | 1 | 1 | 2 | 1 | 1 | 0 |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 91 | 1317 | 0 | 415 | 1233 | 299 | 43 | 455 | 591 | 229 | 402 | 178 |
| Arrive On Green | 0.05 | 0.37 | 0.00 | 0.12 | 0.44 | 0.44 | 0.02 | 0.24 | 0.24 | 0.13 | 0.35 | 0.35 |
| Sat Flow, veh/h | 1774 | 3632 | 0 | 3442 | 2794 | 677 | 1774 | 1863 | 1042 | 1774 | 1138 | 505 |
| Grp Volume(v), veh/h | 72 | 1108 | 0 | 343 | 648 | 628 | 28 | 285 | 263 | 202 | 0 | 166 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 0 | 1721 | 1770 | 1701 | 1774 | 1863 | 521 | 1774 | 0 | 1643 |
| Q Serve(g_s), s | 5.4 | 38.6 | 0.0 | 13.1 | 43.5 | 44.1 | 2.1 | 18.4 | 28.9 | 15.1 | 0.0 | 9.8 |
| Cycle Q Clear(g_c), s | 5.4 | 38.6 | 0.0 | 13.1 | 43.5 | 44.1 | 2.1 | 18.4 | 28.9 | 15.1 | 0.0 | 9.8 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 0.40 | 1.00 | | 1.00 | 1.00 | | 0.31 |
| Lane Grp Cap(c), veh/h | 91 | 1317 | 0 | 415 | 781 | 751 | 43 | 455 | 591 | 229 | 0 | 580 |
| V/C Ratio(X) | 0.79 | 0.84 | 0.00 | 0.83 | 0.83 | 0.84 | 0.66 | 0.63 | 0.45 | 0.88 | 0.00 | 0.29 |
| Avail Cap(c_a), veh/h | 145 | 1317 | 0 | 1047 | 781 | 751 | 342 | 497 | 614 | 336 | 0 | 580 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 63.2 | 38.7 | 0.0 | 57.9 | 33.2 | 33.4 | 65.2 | 45.4 | 36.4 | 57.7 | 0.0 | 31.4 |
| Incr Delay (d2), s/veh | 13.8 | 6.6 | 0.0 | 4.2 | 9.9 | 10.7 | 15.7 | 2.2 | 0.5 | 16.6 | 0.0 | 0.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.0 | 20.0 | 0.0 | 6.5 | 23.4 | 22.8 | 1.2 | 9.8 | 4.2 | 8.5 | 0.0 | 4.5 |
| LnGrp Delay(d),s/veh | 77.0 | 45.3 | 0.0 | 62.1 | 43.1 | 44.1 | 80.9 | 47.6 | 36.9 | 74.3 | 0.0 | 31.6 |
| LnGrp LOS | E | D | | E | D | D | F | D | D | E | | C |
| Approach Vol, veh/h | | 1180 | | | 1619 | | | 576 | | | 368 | |
| Approach Delay, s/veh | | 47.2 | | | 47.5 | | | 44.3 | | | 55.1 | |
| Approach LOS | | D | | | D | | | D | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 20.3 | 55.7 | 7.2 | 51.6 | 10.9 | 65.0 | 21.9 | 36.9 |
| Change Period (Y+Rc), s | 4.0 | 5.5 | 4.0 | 4.0 | 4.0 | 5.5 | 4.5 | 4.0 |
| Max Green Setting (Gmax), s | 16.3 | 29.5 | 26.0 | 41.0 | 11.0 | 59.5 | 25.5 | 36.0 |
| Max Q Clear Time (g_c+I1), s | 15.1 | 40.6 | 4.1 | 11.8 | 7.4 | 46.1 | 17.1 | 30.9 |
| Green Ext Time (p_c), s | 1.1 | 0.0 | 0.0 | 1.1 | 0.0 | 7.6 | 0.4 | 2.0 |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2010 Ctrl Delay | | 47.7 | |
| HCM 2010 LOS | | D | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 80.4 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 1521 | 87 | 64 | 1371 | 22 | 43 |
| Future Vol, veh/h | 1521 | 87 | 64 | 1371 | 22 | 43 |
| Conflicting Peds, #/hr | 0 | 12 | 12 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 150 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 74 | 74 | 74 | 74 | 74 | 74 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 2055 | 118 | 86 | 1853 | 30 | 58 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 2185 | 0 | 3225 | 1099 |
| Stage 1 | - | - | - | - | 2126 | - |
| Stage 2 | - | - | - | - | 1099 | - |
| Critical Hdwy | - | - | 4.14 | - | 6.84 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 | - |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 | 3.32 |
| Pot Cap-1 Maneuver | - | - | 239 | - | ~ 7 | 207 |
| Stage 1 | - | - | - | - | 77 | - |
| Stage 2 | - | - | - | - | 281 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 236 | - | ~ 4 | 205 |
| Mov Cap-2 Maneuver | - | - | - | - | ~ 4 | - |
| Stage 1 | - | - | - | - | 48 | - |
| Stage 2 | - | - | - | - | 281 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 1.3 | $ 3813.5 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 11 | - | - | 236 | - |
| HCM Lane V/C Ratio | 7.985 | - | - | 0.366 | - |
| HCM Control Delay (s) | $ 3813.5 | - | - | 28.8 | - |
| HCM Lane LOS | F | - | - | D | - |
| HCM 95th %tile Q(veh) | 12.3 | - | - | 1.6 | - |

| Notes | | | |
|---|---|---|---|
| ~: Volume exceeds capacity | $: Delay exceeds 300s | +: Computation Not Defined | *: All major volume in platoon |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 109 | 1348 | 141 | 77 | 1311 | 148 | 88 | 60 | 51 | 85 | 43 | 33 |
| Future Volume (veh/h) | 109 | 1348 | 141 | 77 | 1311 | 148 | 88 | 60 | 51 | 85 | 43 | 33 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.96 | 1.00 | | 0.97 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 138 | 1706 | 172 | 97 | 1659 | 187 | 111 | 76 | -26 | 108 | 54 | -30 |
| Adj No. of Lanes | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 150 | 1463 | 145 | 454 | 2026 | 224 | 135 | 141 | 120 | 131 | 137 | 0 |
| Arrive On Green | 0.08 | 0.45 | 0.45 | 0.26 | 0.63 | 0.63 | 0.08 | 0.08 | 0.00 | 0.07 | 0.07 | 0.00 |
| Sat Flow, veh/h | 1774 | 3240 | 321 | 1774 | 3202 | 354 | 1774 | 1863 | 1583 | 1774 | 1863 | 0 |
| Grp Volume(v), veh/h | 138 | 917 | 961 | 97 | 903 | 943 | 111 | 76 | -26 | 108 | 24 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1792 | 1774 | 1770 | 1786 | 1774 | 1863 | 1583 | 1774 | 1863 | 0 |
| Q Serve(g_s), s | 10.0 | 58.7 | 58.7 | 5.6 | 49.8 | 53.4 | 8.0 | 5.1 | 0.0 | 7.8 | 1.6 | 0.0 |
| Cycle Q Clear(g_c), s | 10.0 | 58.7 | 58.7 | 5.6 | 49.8 | 53.4 | 8.0 | 5.1 | 0.0 | 7.8 | 1.6 | 0.0 |
| Prop In Lane | 1.00 | | 0.18 | 1.00 | | 0.20 | 1.00 | | 1.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 150 | 799 | 809 | 454 | 1120 | 1130 | 135 | 141 | 120 | 131 | 137 | 0 |
| V/C Ratio(X) | 0.92 | 1.15 | 1.19 | 0.21 | 0.81 | 0.83 | 0.82 | 0.54 | -0.22 | 0.82 | 0.17 | 0.00 |
| Avail Cap(c_a), veh/h | 150 | 799 | 809 | 454 | 1120 | 1130 | 177 | 430 | 365 | 164 | 416 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.66 | 0.66 | 0.66 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 59.1 | 35.6 | 35.7 | 38.1 | 17.9 | 18.6 | 59.2 | 57.9 | 0.0 | 59.3 | 56.5 | 0.0 |
| Incr Delay (d2), s/veh | 49.3 | 81.0 | 96.6 | 0.1 | 4.2 | 4.9 | 16.2 | 4.5 | 0.0 | 19.1 | 0.9 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 7.0 | 46.6 | 50.7 | 2.8 | 25.4 | 27.7 | 4.6 | 2.8 | 0.0 | 4.5 | 0.8 | 0.0 |
| LnGrp Delay(d),s/veh | 108.4 | 116.7 | 132.3 | 38.1 | 22.1 | 23.5 | 75.4 | 62.4 | 0.0 | 78.4 | 57.4 | 0.0 |
| LnGrp LOS | F | F | F | D | C | C | E | E | | E | E | |
| Approach Vol, veh/h | | 2016 | | | 1943 | | | 161 | | | 132 | |
| Approach Delay, s/veh | | 123.5 | | | 23.6 | | | 81.5 | | | 74.6 | |
| Approach LOS | | F | | | C | | | F | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 38.5 | 64.0 | 13.9 | 13.6 | 15.0 | 87.5 | 13.6 | 13.8 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 4.0 | 4.0 | 4.0 | 5.3 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 12.0 | * 59 | 13.0 | 29.0 | 11.0 | 59.7 | 12.0 | 30.0 |
| Max Q Clear Time (g_c+I1), s | 7.6 | 60.7 | 10.0 | 3.6 | 12.0 | 55.4 | 9.8 | 7.1 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 4.3 | 0.0 | 0.5 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 74.7 |
| HCM 2010 LOS | E |

Notes



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 80 | 1366 | 52 | 96 | 1469 | 47 | 57 | 19 | 92 | 42 | 14 | 43 |
| Future Volume (veh/h) | 80 | 1366 | 52 | 96 | 1469 | 47 | 57 | 19 | 92 | 42 | 14 | 43 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.98 | 1.00 | | 0.97 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 90 | 1535 | 23 | 108 | 1651 | 38 | 64 | 21 | 64 | 47 | 16 | 31 |
| Adj No. of Lanes | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 462 | 2444 | 1075 | 158 | 1653 | 717 | 100 | 157 | 133 | 78 | 41 | 80 |
| Arrive On Green | 0.52 | 1.00 | 1.00 | 0.05 | 0.47 | 0.47 | 0.06 | 0.08 | 0.08 | 0.04 | 0.07 | 0.07 |
| Sat Flow, veh/h | 1774 | 3539 | 1557 | 3442 | 3539 | 1535 | 1774 | 1863 | 1578 | 1774 | 567 | 1098 |
| Grp Volume(v), veh/h | 90 | 1535 | 23 | 108 | 1651 | 38 | 64 | 21 | 64 | 47 | 0 | 47 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1557 | 1721 | 1770 | 1535 | 1774 | 1863 | 1578 | 1774 | 0 | 1664 |
| Q Serve(g_s), s | 3.5 | 0.0 | 0.0 | 4.0 | 60.6 | 1.4 | 4.6 | 1.4 | 5.0 | 3.4 | 0.0 | 3.5 |
| Cycle Q Clear(g_c), s | 3.5 | 0.0 | 0.0 | 4.0 | 60.6 | 1.4 | 4.6 | 1.4 | 5.0 | 3.4 | 0.0 | 3.5 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.66 |
| Lane Grp Cap(c), veh/h | 462 | 2444 | 1075 | 158 | 1653 | 717 | 100 | 157 | 133 | 78 | 0 | 121 |
| V/C Ratio(X) | 0.19 | 0.63 | 0.02 | 0.69 | 1.00 | 0.05 | 0.64 | 0.13 | 0.48 | 0.60 | 0.00 | 0.39 |
| Avail Cap(c_a), veh/h | 462 | 2444 | 1075 | 289 | 1653 | 717 | 108 | 516 | 437 | 108 | 0 | 461 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.35 | 0.35 | 0.35 | 0.57 | 0.57 | 0.57 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 23.9 | 0.0 | 0.0 | 61.1 | 34.6 | 11.6 | 60.1 | 55.1 | 56.8 | 61.0 | 0.0 | 57.5 |
| Incr Delay (d2), s/veh | 0.0 | 0.4 | 0.0 | 1.1 | 16.5 | 0.1 | 7.8 | 0.1 | 1.0 | 2.8 | 0.0 | 0.8 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.7 | 0.1 | 0.0 | 1.9 | 33.4 | 0.6 | 2.5 | 0.7 | 2.2 | 1.7 | 0.0 | 1.6 |
| LnGrp Delay(d),s/veh | 23.9 | 0.4 | 0.0 | 62.2 | 51.1 | 11.7 | 67.9 | 55.3 | 57.8 | 63.8 | 0.0 | 58.2 |
| LnGrp LOS | C | A | A | E | D | B | E | E | E | E | | E |
| Approach Vol, veh/h | | 1648 | | | 1797 | | | 149 | | | 94 | |
| Approach Delay, s/veh | | 1.7 | | | 51.0 | | | 61.8 | | | 61.0 | |
| Approach LOS | | A | | | D | | | E | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 10.1 | 95.1 | 11.4 | 13.5 | 39.1 | 66.0 | 9.8 | 15.1 |
| Change Period (Y+Rc), s | 4.1 | 5.3 | 4.1 | 4.0 | 5.3 | * 5.3 | 4.1 | * 4.1 |
| Max Green Setting (Gmax), s | 10.9 | 57.7 | 7.9 | 36.0 | 7.9 | * 61 | 7.9 | * 36 |
| Max Q Clear Time (g_c+I1), s | 6.0 | 2.0 | 6.6 | 5.5 | 5.5 | 62.6 | 5.4 | 7.0 |
| Green Ext Time (p_c), s | 0.1 | 49.5 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 29.6 |
| HCM 2010 LOS | C |

Notes

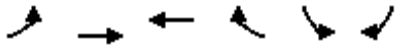


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 65 | 1411 | 25 | 359 | 1502 | 79 | 45 | 34 | 317 | 186 | 40 | 64 |
| Future Volume (veh/h) | 65 | 1411 | 25 | 359 | 1502 | 79 | 45 | 34 | 317 | 186 | 40 | 64 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.98 | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 0.99 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 71 | 1551 | 18 | 395 | 1651 | 86 | 49 | 37 | 73 | 204 | 44 | 29 |
| Adj No. of Lanes | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 510 | 2106 | 928 | 371 | 1435 | 639 | 79 | 205 | 173 | 96 | 125 | 82 |
| Arrive On Green | 0.57 | 1.00 | 1.00 | 0.11 | 0.41 | 0.41 | 0.04 | 0.11 | 0.11 | 0.05 | 0.12 | 0.12 |
| Sat Flow, veh/h | 1774 | 3539 | 1559 | 3442 | 3539 | 1576 | 1774 | 1863 | 1570 | 1774 | 1046 | 689 |
| Grp Volume(v), veh/h | 71 | 1551 | 18 | 395 | 1651 | 86 | 49 | 37 | 73 | 204 | 0 | 73 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1559 | 1721 | 1770 | 1576 | 1774 | 1863 | 1570 | 1774 | 0 | 1735 |
| Q Serve(g_s), s | 2.4 | 0.0 | 0.0 | 14.0 | 52.7 | 3.5 | 3.5 | 2.3 | 5.6 | 7.0 | 0.0 | 5.0 |
| Cycle Q Clear(g_c), s | 2.4 | 0.0 | 0.0 | 14.0 | 52.7 | 3.5 | 3.5 | 2.3 | 5.6 | 7.0 | 0.0 | 5.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.40 |
| Lane Grp Cap(c), veh/h | 510 | 2106 | 928 | 371 | 1435 | 639 | 79 | 205 | 173 | 96 | 0 | 207 |
| V/C Ratio(X) | 0.14 | 0.74 | 0.02 | 1.07 | 1.15 | 0.13 | 0.62 | 0.18 | 0.42 | 2.14 | 0.00 | 0.35 |
| Avail Cap(c_a), veh/h | 510 | 2106 | 928 | 371 | 1435 | 639 | 96 | 602 | 507 | 96 | 0 | 561 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.73 | 0.73 | 0.73 | 0.72 | 0.72 | 0.72 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 20.2 | 0.0 | 0.0 | 58.0 | 38.7 | 15.1 | 61.0 | 52.5 | 54.0 | 61.5 | 0.0 | 52.6 |
| Incr Delay (d2), s/veh | 0.0 | 1.7 | 0.0 | 58.5 | 74.2 | 0.3 | 3.7 | 0.2 | 0.6 | 544.3 | 0.0 | 0.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.2 | 0.5 | 0.0 | 9.6 | 40.5 | 1.6 | 1.8 | 1.2 | 2.5 | 17.9 | 0.0 | 2.4 |
| LnGrp Delay(d),s/veh | 20.2 | 1.7 | 0.0 | 116.5 | 112.8 | 15.5 | 64.8 | 52.7 | 54.6 | 605.8 | 0.0 | 53.0 |
| LnGrp LOS | C | A | A | F | F | B | E | D | D | F | | D |
| Approach Vol, veh/h | | 1640 | | | 2132 | | | 159 | | | 277 | |
| Approach Delay, s/veh | | 2.5 | | | 109.6 | | | 57.3 | | | 460.1 | |
| Approach LOS | | A | | | F | | | E | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 18.0 | 82.7 | 9.8 | 19.5 | 42.7 | 58.0 | 11.0 | 18.3 |
| Change Period (Y+Rc), s | 4.0 | 5.3 | 4.0 | 4.0 | 5.3 | * 5.3 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 14.0 | 49.7 | 7.0 | 42.0 | 11.0 | * 53 | 7.0 | 42.0 |
| Max Q Clear Time (g_c+I1), s | 16.0 | 2.0 | 5.5 | 7.0 | 4.4 | 54.7 | 9.0 | 7.6 |
| Green Ext Time (p_c), s | 0.0 | 9.4 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | 0.2 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 88.9 |
| HCM 2010 LOS | F |

Notes



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 139 | 1775 | 1091 | 39 | 642 | 850 |
| Future Volume (veh/h) | 139 | 1775 | 1091 | 39 | 642 | 850 |
| Number | 7 | 4 | 8 | 18 | 1 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 151 | 1929 | 1186 | 0 | 698 | 636 |
| Adj No. of Lanes | 2 | 2 | 3 | 1 | 1 | 2 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 186 | 1607 | 1843 | 574 | 835 | 1312 |
| Arrive On Green | 0.05 | 0.45 | 0.36 | 0.00 | 0.47 | 0.47 |
| Sat Flow, veh/h | 3442 | 3632 | 5253 | 1583 | 1774 | 2787 |
| Grp Volume(v), veh/h | 151 | 1929 | 1186 | 0 | 698 | 636 |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1770 | 1695 | 1583 | 1774 | 1393 |
| Q Serve(g_s), s | 5.2 | 54.5 | 23.3 | 0.0 | 41.2 | 18.8 |
| Cycle Q Clear(g_c), s | 5.2 | 54.5 | 23.3 | 0.0 | 41.2 | 18.8 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 186 | 1607 | 1843 | 574 | 835 | 1312 |
| V/C Ratio(X) | 0.81 | 1.20 | 0.64 | 0.00 | 0.84 | 0.48 |
| Avail Cap(c_a), veh/h | 186 | 1607 | 1843 | 574 | 835 | 1312 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.10 | 0.10 | 1.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 56.1 | 32.8 | 31.8 | 0.0 | 27.7 | 21.8 |
| Incr Delay (d2), s/veh | 2.9 | 90.7 | 0.8 | 0.0 | 7.4 | 0.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.6 | 46.8 | 11.0 | 0.0 | 21.9 | 16.2 |
| LnGrp Delay(d),s/veh | 59.1 | 123.5 | 32.6 | 0.0 | 35.1 | 22.0 |
| LnGrp LOS | E | F | C | | D | C |
| Approach Vol, veh/h | | 2080 | 1186 | | 1334 | |
| Approach Delay, s/veh | | 118.8 | 32.6 | | 28.9 | |
| Approach LOS | | F | C | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | | | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | | | 59.0 | | 61.0 | 11.0 | 48.0 |
| Change Period (Y+Rc), s | | | | 4.5 | | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | | | | 54.5 | | 56.5 | 6.5 | 43.5 |
| Max Q Clear Time (g_c+I1), s | | | | 56.5 | | 43.2 | 7.2 | 25.3 |
| Green Ext Time (p_c), s | | | | 0.0 | | 4.6 | 0.0 | 7.5 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 70.5 |
| HCM 2010 LOS | E |



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 1610 | 806 | 0 | 1532 | 222 | 82 |
| Future Volume (veh/h) | 1610 | 806 | 0 | 1532 | 222 | 82 |
| Number | 4 | 14 | 3 | 8 | 5 | 12 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 0 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 1750 | 876 | 0 | 1665 | 241 | 89 |
| Adj No. of Lanes | 2 | 1 | 0 | 2 | 2 | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 0 | 2 | 2 | 2 |
| Cap, veh/h | 2288 | 1024 | 0 | 2288 | 958 | 441 |
| Arrive On Green | 0.65 | 0.65 | 0.00 | 0.65 | 0.28 | 0.28 |
| Sat Flow, veh/h | 3632 | 1583 | 0 | 3725 | 3442 | 1583 |
| Grp Volume(v), veh/h | 1750 | 876 | 0 | 1665 | 241 | 89 |
| Grp Sat Flow(s),veh/h/ln | 1770 | 1583 | 0 | 1770 | 1721 | 1583 |
| Q Serve(g_s), s | 41.5 | 52.5 | 0.0 | 37.7 | 6.5 | 5.2 |
| Cycle Q Clear(g_c), s | 41.5 | 52.5 | 0.0 | 37.7 | 6.5 | 5.2 |
| Prop In Lane | | 1.00 | 0.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 2288 | 1024 | 0 | 2288 | 958 | 441 |
| V/C Ratio(X) | 0.76 | 0.86 | 0.00 | 0.73 | 0.25 | 0.20 |
| Avail Cap(c_a), veh/h | 2581 | 1155 | 0 | 2581 | 958 | 441 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.86 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 14.8 | 16.8 | 0.0 | 14.2 | 33.6 | 33.1 |
| Incr Delay (d2), s/veh | 1.3 | 5.9 | 0.0 | 0.8 | 0.6 | 1.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 20.6 | 24.3 | 0.0 | 18.5 | 3.2 | 2.4 |
| LnGrp Delay(d),s/veh | 16.1 | 22.7 | 0.0 | 15.0 | 34.2 | 34.1 |
| LnGrp LOS | B | C | | B | C | C |
| Approach Vol, veh/h | 2626 | | | 1665 | 330 | |
| Approach Delay, s/veh | 18.3 | | | 15.0 | 34.2 | |
| Approach LOS | B | | | B | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | | | 8 |
| Phs Duration (G+Y+Rc), s | | 37.9 | | 82.1 | | | | 82.1 |
| Change Period (Y+Rc), s | | 4.5 | | 4.5 | | | | 4.5 |
| Max Green Setting (Gmax), s | | 23.5 | | 87.5 | | | | 87.5 |
| Max Q Clear Time (g_c+I1), s | | 8.5 | | 54.5 | | | | 39.7 |
| Green Ext Time (p_c), s | | 1.0 | | 23.1 | | | | 18.5 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 18.2 |
| HCM 2010 LOS | B |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 1659 | 34 | 46 | 1497 | 35 | 51 |
| Future Volume (veh/h) | 1659 | 34 | 46 | 1497 | 35 | 51 |
| Number | 2 | 12 | 1 | 6 | 7 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 0.98 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 1746 | 30 | 48 | 1576 | 37 | 45 |
| Adj No. of Lanes | 2 | 1 | 1 | 2 | 1 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 2796 | 1224 | 62 | 3028 | 129 | 115 |
| Arrive On Green | 0.79 | 0.79 | 0.03 | 0.86 | 0.07 | 0.07 |
| Sat Flow, veh/h | 3632 | 1550 | 1774 | 3632 | 1774 | 1583 |
| Grp Volume(v), veh/h | 1746 | 30 | 48 | 1576 | 37 | 45 |
| Grp Sat Flow(s),veh/h/ln | 1770 | 1550 | 1774 | 1770 | 1774 | 1583 |
| Q Serve(g_s), s | 26.6 | 0.5 | 3.5 | 15.1 | 2.6 | 3.5 |
| Cycle Q Clear(g_c), s | 26.6 | 0.5 | 3.5 | 15.1 | 2.6 | 3.5 |
| Prop In Lane | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 2796 | 1224 | 62 | 3028 | 129 | 115 |
| V/C Ratio(X) | 0.62 | 0.02 | 0.78 | 0.52 | 0.29 | 0.39 |
| Avail Cap(c_a), veh/h | 2796 | 1224 | 150 | 3028 | 368 | 329 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.68 | 0.68 | 0.34 | 0.34 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 5.7 | 2.9 | 62.2 | 2.4 | 57.1 | 57.5 |
| Incr Delay (d2), s/veh | 0.7 | 0.0 | 2.7 | 0.2 | 0.4 | 0.8 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 13.1 | 0.2 | 1.8 | 7.3 | 1.3 | 1.6 |
| LnGrp Delay(d),s/veh | 6.4 | 3.0 | 64.9 | 2.7 | 57.5 | 58.3 |
| LnGrp LOS | A | A | E | A | E | E |
| Approach Vol, veh/h | 1776 | | | 1624 | 82 | |
| Approach Delay, s/veh | 6.3 | | | 4.5 | 57.9 | |
| Approach LOS | A | | | A | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | | 6 | | |
| Phs Duration (G+Y+Rc), s | 8.5 | 108.0 | | 13.5 | | 116.5 | | |
| Change Period (Y+Rc), s | 4.0 | 5.3 | | 4.0 | | 5.3 | | |
| Max Green Setting (Gmax), s | 4.5 | 78.7 | | 27.0 | | 93.7 | | |
| Max Q Clear Time (g_c+I1), s | 5.5 | 28.6 | | 5.5 | | 17.1 | | |
| Green Ext Time (p_c), s | 0.0 | 11.8 | | 0.1 | | 9.9 | | |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 6.7 |
| HCM 2010 LOS | A |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 444 | 1026 | 215 | 84 | 911 | 211 | 290 | 252 | 116 | 224 | 213 | 342 |
| Future Volume (veh/h) | 444 | 1026 | 215 | 84 | 911 | 211 | 290 | 252 | 116 | 224 | 213 | 342 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 7 | 4 | 14 | 3 | 8 | 18 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 0.98 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 477 | 1103 | 222 | 90 | 980 | 136 | 312 | 271 | 88 | 241 | 229 | 0 |
| Adj No. of Lanes | 2 | 2 | 0 | 1 | 2 | 1 | 1 | 2 | 1 | 2 | 2 | 1 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 526 | 1233 | 247 | 412 | 1805 | 806 | 164 | 388 | 170 | 292 | 379 | 169 |
| Arrive On Green | 0.20 | 0.56 | 0.56 | 0.23 | 0.51 | 0.51 | 0.09 | 0.11 | 0.11 | 0.08 | 0.11 | 0.00 |
| Sat Flow, veh/h | 3442 | 2931 | 587 | 1774 | 3539 | 1581 | 1774 | 3539 | 1553 | 3442 | 3539 | 1583 |
| Grp Volume(v), veh/h | 477 | 664 | 661 | 90 | 980 | 136 | 312 | 271 | 88 | 241 | 229 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1770 | 1749 | 1774 | 1770 | 1581 | 1774 | 1770 | 1553 | 1721 | 1770 | 1583 |
| Q Serve(g_s), s | 17.6 | 42.8 | 43.5 | 5.3 | 24.4 | 6.0 | 12.0 | 9.6 | 5.2 | 9.0 | 8.0 | 0.0 |
| Cycle Q Clear(g_c), s | 17.6 | 42.8 | 43.5 | 5.3 | 24.4 | 6.0 | 12.0 | 9.6 | 5.2 | 9.0 | 8.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.34 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 526 | 745 | 736 | 412 | 1805 | 806 | 164 | 388 | 170 | 292 | 379 | 169 |
| V/C Ratio(X) | 0.91 | 0.89 | 0.90 | 0.22 | 0.54 | 0.17 | 1.91 | 0.70 | 0.52 | 0.82 | 0.60 | 0.00 |
| Avail Cap(c_a), veh/h | 556 | 745 | 736 | 412 | 1805 | 806 | 164 | 937 | 411 | 318 | 937 | 419 |
| HCM Platoon Ratio | 1.33 | 1.33 | 1.33 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.76 | 0.76 | 0.76 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 50.9 | 26.0 | 26.2 | 40.4 | 21.6 | 17.1 | 59.0 | 55.8 | 31.0 | 58.5 | 55.4 | 0.0 |
| Incr Delay (d2), s/veh | 14.6 | 12.1 | 12.9 | 0.3 | 1.2 | 0.5 | 429.3 | 2.3 | 2.4 | 15.1 | 1.6 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 9.4 | 23.3 | 23.3 | 2.7 | 12.1 | 2.7 | 25.4 | 4.8 | 2.4 | 4.9 | 4.0 | 0.0 |
| LnGrp Delay(d),s/veh | 65.4 | 38.1 | 39.1 | 40.6 | 22.8 | 17.5 | 488.3 | 58.1 | 33.5 | 73.6 | 57.0 | 0.0 |
| LnGrp LOS | E | D | D | D | C | B | F | E | C | E | E | |
| Approach Vol, veh/h | | 1802 | | | 1206 | | | 671 | | | 470 | |
| Approach Delay, s/veh | | 45.7 | | | 23.5 | | | 254.9 | | | 65.5 | |
| Approach LOS | | D | | | C | | | F | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 35.5 | 60.0 | 15.6 | 18.9 | 23.9 | 71.6 | 16.0 | 18.5 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 4.6 | * 4.6 | 4.0 | 5.3 | 4.0 | 4.6 |
| Max Green Setting (Gmax), s | 13.0 | * 55 | 12.0 | * 34 | 21.0 | 44.7 | 12.0 | 34.4 |
| Max Q Clear Time (g_c+I1), s | 17.3 | 45.5 | 11.0 | 11.6 | 19.6 | 26.4 | 14.0 | 10.0 |
| Green Ext Time (p_c), s | 0.1 | 5.9 | 0.1 | 1.9 | 0.3 | 7.8 | 0.0 | 1.4 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 75.3 |
| HCM 2010 LOS | E |

Notes



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 69 | 204 | 21 | 0 | 55 | 499 | 37 | 1213 | 0 | 610 | 620 | 39 |
| Future Volume (veh/h) | 69 | 204 | 21 | 0 | 55 | 499 | 37 | 1213 | 0 | 610 | 620 | 39 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1827 | 1827 | 1900 | 1827 | 1827 | 1827 | 1827 | 1827 | 1900 | 1827 | 1827 | 1900 |
| Adj Flow Rate, veh/h | 72 | 212 | 5 | 0 | 57 | 0 | 39 | 1264 | 0 | 635 | 646 | 0 |
| Adj No. of Lanes | 1 | 2 | 0 | 1 | 1 | 1 | 1 | 2 | 0 | 2 | 2 | 0 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Cap, veh/h | 92 | 545 | 13 | 2 | 76 | 64 | 55 | 1512 | 0 | 738 | 2224 | 0 |
| Arrive On Green | 0.05 | 0.16 | 0.16 | 0.00 | 0.04 | 0.00 | 0.03 | 0.44 | 0.00 | 0.22 | 0.64 | 0.00 |
| Sat Flow, veh/h | 1740 | 3467 | 82 | 1740 | 1827 | 1553 | 1740 | 3563 | 0 | 3375 | 3563 | 0 |
| Grp Volume(v), veh/h | 72 | 106 | 111 | 0 | 57 | 0 | 39 | 1264 | 0 | 635 | 646 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1740 | 1736 | 1813 | 1740 | 1827 | 1553 | 1740 | 1736 | 0 | 1688 | 1736 | 0 |
| Q Serve(g_s), s | 4.6 | 6.1 | 6.1 | 0.0 | 3.4 | 0.0 | 2.5 | 36.0 | 0.0 | 20.2 | 9.2 | 0.0 |
| Cycle Q Clear(g_c), s | 4.6 | 6.1 | 6.1 | 0.0 | 3.4 | 0.0 | 2.5 | 36.0 | 0.0 | 20.2 | 9.2 | 0.0 |
| Prop In Lane | 1.00 | | 0.04 | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 92 | 273 | 285 | 2 | 76 | 64 | 55 | 1512 | 0 | 738 | 2224 | 0 |
| V/C Ratio(X) | 0.78 | 0.39 | 0.39 | 0.00 | 0.75 | 0.00 | 0.71 | 0.84 | 0.00 | 0.86 | 0.29 | 0.00 |
| Avail Cap(c_a), veh/h | 203 | 452 | 472 | 78 | 344 | 293 | 203 | 2616 | 0 | 1333 | 3644 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 52.1 | 42.1 | 42.2 | 0.0 | 52.8 | 0.0 | 53.5 | 27.9 | 0.0 | 41.9 | 8.8 | 0.0 |
| Incr Delay (d2), s/veh | 13.3 | 0.9 | 0.9 | 0.0 | 13.8 | 0.0 | 15.7 | 1.3 | 0.0 | 3.1 | 0.1 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.5 | 3.0 | 3.2 | 0.0 | 2.0 | 0.0 | 1.4 | 17.5 | 0.0 | 9.8 | 4.4 | 0.0 |
| LnGrp Delay(d),s/veh | 65.4 | 43.0 | 43.0 | 0.0 | 66.7 | 0.0 | 69.2 | 29.2 | 0.0 | 45.0 | 8.9 | 0.0 |
| LnGrp LOS | E | D | D | | E | | E | C | | D | A | |
| Approach Vol, veh/h | | 289 | | | 57 | | | 1303 | | | 1281 | |
| Approach Delay, s/veh | | 48.6 | | | 66.7 | | | 30.4 | | | 26.8 | |
| Approach LOS | | D | | | E | | | C | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 11.4 | 55.6 | 0.0 | 24.5 | 8.5 | 78.4 | 12.9 | 11.6 |
| Change Period (Y+Rc), s | 7.0 | 7.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 | 7.0 |
| Max Green Setting (Gmax), s | 4.0 | 84.0 | 5.0 | 29.0 | 13.0 | 117.0 | 13.0 | 21.0 |
| Max Q Clear Time (g_c+I2), s | 22.2 | 38.0 | 0.0 | 8.1 | 4.5 | 11.2 | 6.6 | 5.4 |
| Green Ext Time (p_c), s | 2.2 | 10.5 | 0.0 | 0.9 | 0.0 | 4.2 | 0.1 | 0.1 |

| Intersection Summary | | |
|---|---|---|
| HCM 2010 Ctrl Delay | | 31.3 |
| HCM 2010 LOS | | C |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 8 | 174 | 2 | 159 | 257 | 53 | 0 | 1006 | 525 | 45 | 501 | 4 |
| Future Volume (veh/h) | 8 | 174 | 2 | 159 | 257 | 53 | 0 | 1006 | 525 | 45 | 501 | 4 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 1 | 6 | 16 | 5 | 2 | 12 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 8 | 183 | 2 | 167 | 271 | 55 | 0 | 1059 | 519 | 47 | 527 | 3 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 20 | 187 | 2 | 193 | 299 | 61 | 1 | 1148 | 1148 | 62 | 2475 | 14 |
| Arrive On Green | 0.01 | 0.10 | 0.10 | 0.11 | 0.20 | 0.20 | 0.00 | 0.62 | 0.62 | 0.04 | 0.69 | 0.69 |
| Sat Flow, veh/h | 1774 | 1839 | 20 | 1774 | 1500 | 304 | 1774 | 1863 | 1583 | 1774 | 3608 | 21 |
| Grp Volume(v), veh/h | 8 | 0 | 185 | 167 | 0 | 326 | 0 | 1059 | 519 | 47 | 258 | 272 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 0 | 1859 | 1774 | 0 | 1804 | 1774 | 1863 | 1583 | 1774 | 1770 | 1859 |
| Q Serve(g_s), s | 0.6 | 0.0 | 14.4 | 13.4 | 0.0 | 25.5 | 0.0 | 73.2 | 19.4 | 3.8 | 7.8 | 7.8 |
| Cycle Q Clear(g_c), s | 0.6 | 0.0 | 14.4 | 13.4 | 0.0 | 25.5 | 0.0 | 73.2 | 19.4 | 3.8 | 7.8 | 7.8 |
| Prop In Lane | 1.00 | | 0.01 | 1.00 | | 0.17 | 1.00 | | 1.00 | 1.00 | | 0.01 |
| Lane Grp Cap(c), veh/h | 20 | 0 | 189 | 193 | 0 | 359 | 1 | 1148 | 1148 | 62 | 1214 | 1275 |
| V/C Ratio(X) | 0.40 | 0.00 | 0.98 | 0.86 | 0.00 | 0.91 | 0.00 | 0.92 | 0.45 | 0.75 | 0.21 | 0.21 |
| Avail Cap(c_a), veh/h | 74 | 0 | 189 | 442 | 0 | 474 | 74 | 1996 | 1870 | 74 | 1897 | 1993 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 71.0 | 0.0 | 64.8 | 63.4 | 0.0 | 56.6 | 0.0 | 24.7 | 8.1 | 69.1 | 8.4 | 8.4 |
| Incr Delay (d2), s/veh | 12.0 | 0.0 | 59.8 | 10.8 | 0.0 | 17.7 | 0.0 | 4.4 | 0.3 | 29.9 | 0.1 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.4 | 0.0 | 10.5 | 7.2 | 0.0 | 14.5 | 0.0 | 38.8 | 8.4 | 2.4 | 3.8 | 4.0 |
| LnGrp Delay(d),s/veh | 83.0 | 0.0 | 124.7 | 74.2 | 0.0 | 74.3 | 0.0 | 29.1 | 8.4 | 99.1 | 8.4 | 8.4 |
| LnGrp LOS | F | | F | E | | E | | C | A | F | A | A |
| Approach Vol, veh/h | | 193 | | | 493 | | | 1578 | | | 577 | |
| Approach Delay, s/veh | | 123.0 | | | 74.2 | | | 22.3 | | | 15.8 | |
| Approach LOS | | F | | | E | | | C | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 10.0 | 104.2 | 20.8 | 19.7 | 10.1 | 94.1 | 6.6 | 33.8 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 6.0 | 155.0 | 36.0 | 8.0 | 6.0 | 155.0 | 6.0 | 38.0 |
| Max Q Clear Time (g_c+I1), s | 10.0 | 9.8 | 15.4 | 16.4 | 5.8 | 75.2 | 2.6 | 27.5 |
| Green Ext Time (p_c), s | 0.0 | 2.8 | 0.4 | 0.0 | 0.0 | 13.9 | 0.0 | 1.2 |

| Intersection Summary | | |
|---|---|---|
| HCM 2010 Ctrl Delay | | 36.8 |
| HCM 2010 LOS | | D |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 194 | 12 | 61 | 39 | 330 | 30 | 1511 | 240 | 216 | 534 | 85 |
| Future Volume (veh/h) | 0 | 194 | 12 | 61 | 39 | 330 | 30 | 1511 | 240 | 216 | 534 | 85 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 0 | 204 | 13 | 52 | 57 | 347 | 32 | 1591 | 0 | 227 | 562 | 0 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 1 | 277 | 18 | 67 | 439 | 373 | 41 | 1775 | 854 | 252 | 2197 | 0 |
| Arrive On Green | 0.00 | 0.16 | 0.16 | 0.04 | 0.24 | 0.24 | 0.02 | 0.50 | 0.00 | 0.14 | 0.62 | 0.00 |
| Sat Flow, veh/h | 1774 | 1733 | 110 | 1774 | 1863 | 1583 | 1774 | 3539 | 1583 | 1774 | 3632 | 0 |
| Grp Volume(v), veh/h | 0 | 0 | 217 | 52 | 57 | 347 | 32 | 1591 | 0 | 227 | 562 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 0 | 1843 | 1774 | 1863 | 1583 | 1774 | 1770 | 1583 | 1774 | 1770 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 17.7 | 4.6 | 3.8 | 33.8 | 2.8 | 64.2 | 0.0 | 19.8 | 11.3 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 0.0 | 17.7 | 4.6 | 3.8 | 33.8 | 2.8 | 64.2 | 0.0 | 19.8 | 11.3 | 0.0 |
| Prop In Lane | 1.00 | | 0.06 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 1 | 0 | 295 | 67 | 439 | 373 | 41 | 1775 | 854 | 252 | 2197 | 0 |
| V/C Ratio(X) | 0.00 | 0.00 | 0.74 | 0.78 | 0.13 | 0.93 | 0.78 | 0.90 | 0.00 | 0.90 | 0.26 | 0.00 |
| Avail Cap(c_a), veh/h | 45 | 0 | 526 | 158 | 650 | 552 | 79 | 2110 | 1004 | 529 | 3008 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 0.0 | 0.0 | 63.1 | 75.2 | 47.5 | 59.0 | 76.6 | 35.6 | 0.0 | 66.5 | 13.5 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 0.0 | 3.6 | 17.3 | 0.1 | 17.3 | 26.5 | 4.9 | 0.0 | 11.1 | 0.1 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 0.0 | 9.3 | 2.6 | 2.0 | 16.6 | 1.7 | 32.4 | 0.0 | 10.6 | 5.6 | 0.0 |
| LnGrp Delay(d),s/veh | 0.0 | 0.0 | 66.6 | 92.5 | 47.6 | 76.2 | 103.2 | 40.5 | 0.0 | 77.6 | 13.5 | 0.0 |
| LnGrp LOS | | | E | F | D | E | F | D | | E | B | |
| Approach Vol, veh/h | | 217 | | | 456 | | | 1623 | | | 789 | |
| Approach Delay, s/veh | | 66.6 | | | 74.5 | | | 41.7 | | | 32.0 | |
| Approach LOS | | E | | | E | | | D | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 28.4 | 86.1 | 11.9 | 31.2 | 9.6 | 104.9 | 0.0 | 43.2 |
| Change Period (Y+Rc), s | 6.0 | 7.0 | 6.0 | 6.0 | 6.0 | 7.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 47.0 | 94.0 | 14.0 | 45.0 | 7.0 | 134.0 | 4.0 | 55.0 |
| Max Q Clear Time (g_c+I1), s | 21.8 | 66.2 | 6.6 | 19.7 | 4.8 | 13.3 | 0.0 | 35.8 |
| Green Ext Time (p_c), s | 0.6 | 12.9 | 0.0 | 1.0 | 0.0 | 3.5 | 0.0 | 1.3 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 45.8 |
| HCM 2010 LOS | D |

Notes

# LANE LEVEL OF SERVICE

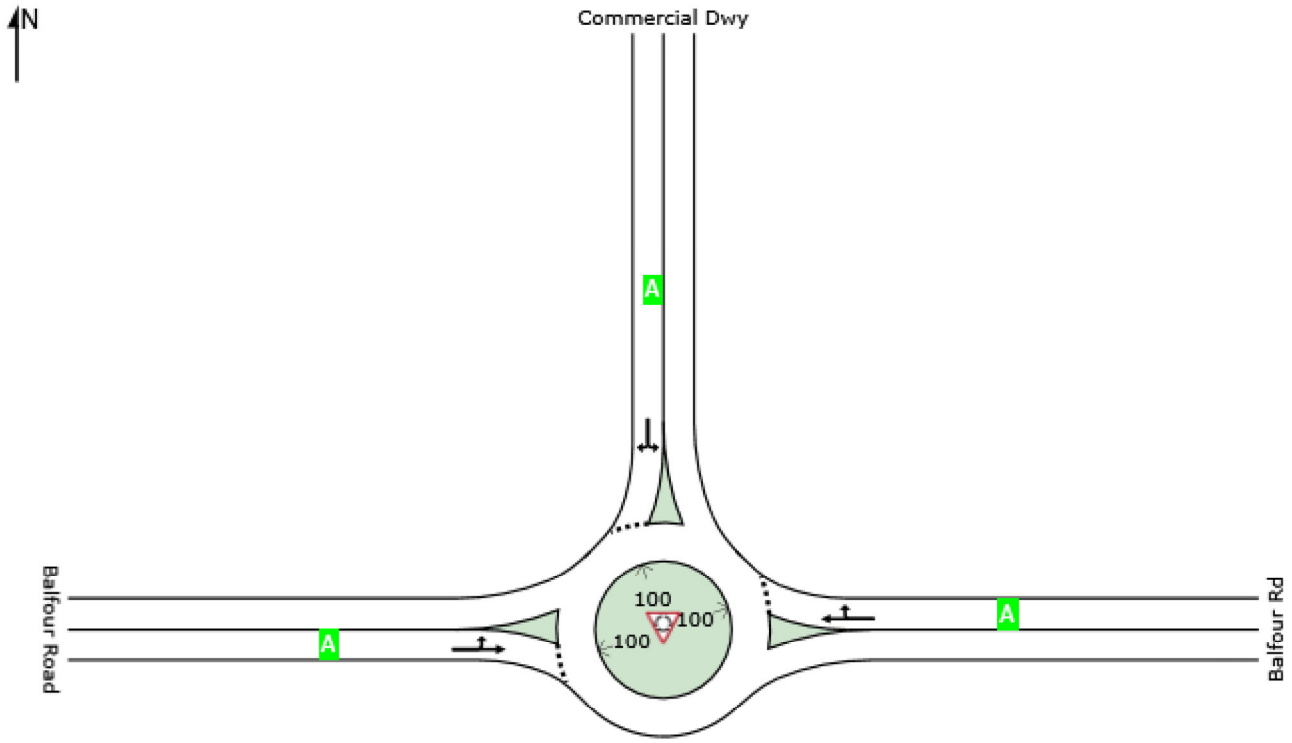
## Lane Level of Service

### Site: 6 [INT 6 - OY-PP_AM]

Vineyards at Deer Creek
Roundabout

**All Movement Classes**

| | East | North | West | Intersection |
|---|---|---|---|---|
| LOS | A | A | A | A |




Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

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# MOVEMENT SUMMARY

## Site: 6 [INT 6 - OY-PP_AM]

Vineyards at Deer Creek
Roundabout

| Movement Performance - Vehicles | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mov ID | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance ft | Prop. Queued | Effective Stop Rate per veh | Average Speed mph |
| East: Balfour Rd | | | | | | | | | | | |
| 6 | T1 | 695 | 3.0 | 0.562 | 9.0 | LOS A | 4.9 | 125.5 | 0.19 | 0.06 | 33.2 |
| 16 | R2 | 42 | 3.0 | 0.562 | 9.0 | LOS A | 4.9 | 125.5 | 0.19 | 0.06 | 32.3 |
| Approach | | 737 | 3.0 | 0.562 | 9.0 | LOS A | 4.9 | 125.5 | 0.19 | 0.06 | 33.1 |
| North: Commercial Dwy | | | | | | | | | | | |
| 7 | L2 | 33 | 3.0 | 0.056 | 6.2 | LOS A | 0.2 | 5.3 | 0.59 | 0.53 | 32.2 |
| 14 | R2 | 3 | 3.0 | 0.056 | 6.2 | LOS A | 0.2 | 5.3 | 0.59 | 0.53 | 31.3 |
| Approach | | 36 | 3.0 | 0.056 | 6.2 | LOS A | 0.2 | 5.3 | 0.59 | 0.53 | 32.1 |
| West: Balfour Road | | | | | | | | | | | |
| 5 | L2 | 21 | 3.0 | 0.538 | 8.7 | LOS A | 4.4 | 112.8 | 0.24 | 0.09 | 33.3 |
| 2 | T1 | 676 | 3.0 | 0.538 | 8.7 | LOS A | 4.4 | 112.8 | 0.24 | 0.09 | 33.3 |
| Approach | | 697 | 3.0 | 0.538 | 8.7 | LOS A | 4.4 | 112.8 | 0.24 | 0.09 | 33.3 |
| All Vehicles | | 1470 | 3.0 | 0.562 | 8.8 | LOS A | 4.9 | 125.5 | 0.22 | 0.08 | 33.2 |

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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# LANE LEVEL OF SERVICE

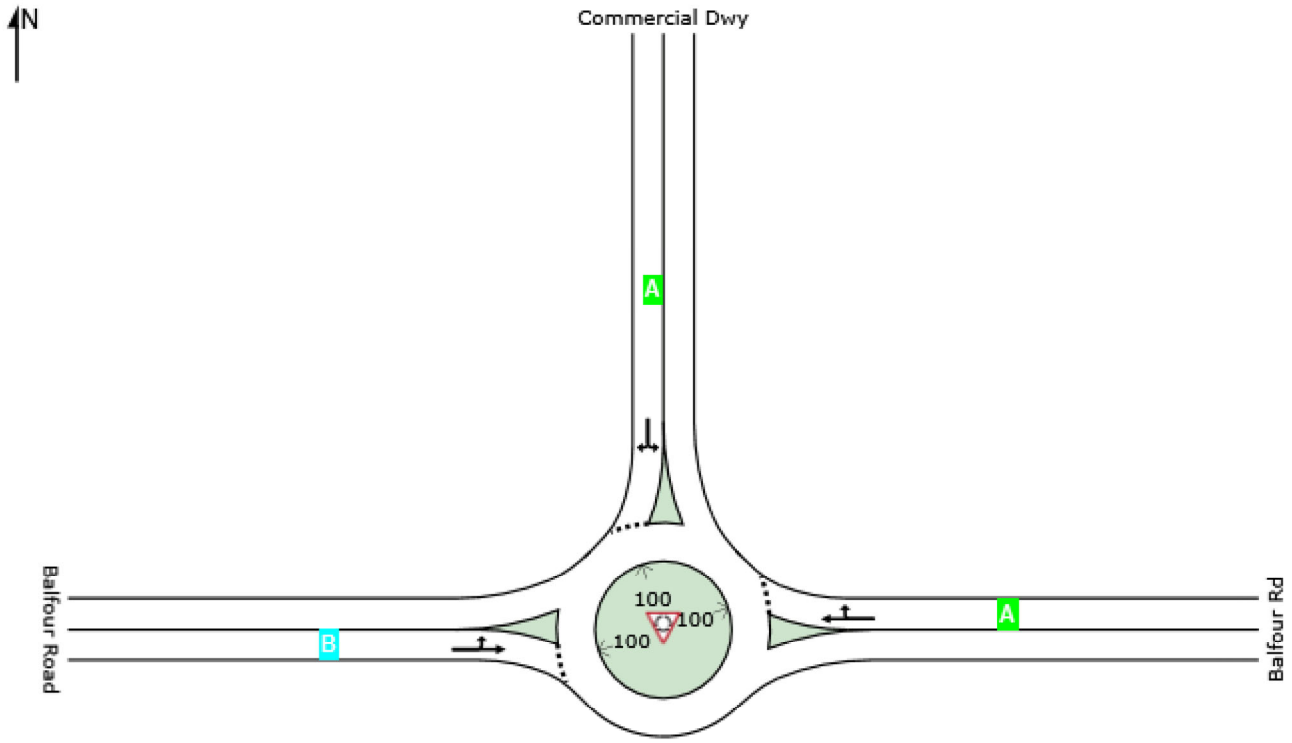
## Lane Level of Service

## Site: 6 [INT 6 - OY-PP_PM]

Vineyards at Deer Creek
Roundabout

**All Movement Classes**

| | East | North | West | Intersection |
|---|---|---|---|---|
| LOS | A | A | B | A |




Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

# MOVEMENT SUMMARY

## Site: 6 [INT 6 - OY-PP_PM]

Vineyards at Deer Creek
Roundabout

| Movement Performance - Vehicles | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mov ID | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance ft | Prop. Queued | Effective Stop Rate per veh | Average Speed mph |
| East: Balfour Rd | | | | | | | | | | | |
| 6 | T1 | 507 | 3.0 | 0.498 | 8.2 | LOS A | 3.7 | 94.3 | 0.31 | 0.14 | 33.6 |
| 16 | R2 | 120 | 3.0 | 0.498 | 8.2 | LOS A | 3.7 | 94.3 | 0.31 | 0.14 | 32.6 |
| Approach | | 626 | 3.0 | 0.498 | 8.2 | LOS A | 3.7 | 94.3 | 0.31 | 0.14 | 33.4 |
| North: Commercial Dwy | | | | | | | | | | | |
| 7 | L2 | 177 | 3.0 | 0.250 | 7.3 | LOS A | 1.1 | 28.1 | 0.59 | 0.56 | 31.7 |
| 14 | R2 | 20 | 3.0 | 0.250 | 7.3 | LOS A | 1.1 | 28.1 | 0.59 | 0.56 | 30.8 |
| Approach | | 197 | 3.0 | 0.250 | 7.3 | LOS A | 1.1 | 28.1 | 0.59 | 0.56 | 31.6 |
| West: Balfour Road | | | | | | | | | | | |
| 5 | L2 | 61 | 3.0 | 0.574 | 10.4 | LOS B | 4.2 | 108.3 | 0.57 | 0.40 | 32.4 |
| 2 | T1 | 577 | 3.0 | 0.574 | 10.4 | LOS B | 4.2 | 108.3 | 0.57 | 0.40 | 32.3 |
| Approach | | 638 | 3.0 | 0.574 | 10.4 | LOS B | 4.2 | 108.3 | 0.57 | 0.40 | 32.3 |
| All Vehicles | | 1461 | 3.0 | 0.574 | 9.0 | LOS A | 4.2 | 108.3 | 0.46 | 0.31 | 32.7 |

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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# LANE LEVEL OF SERVICE

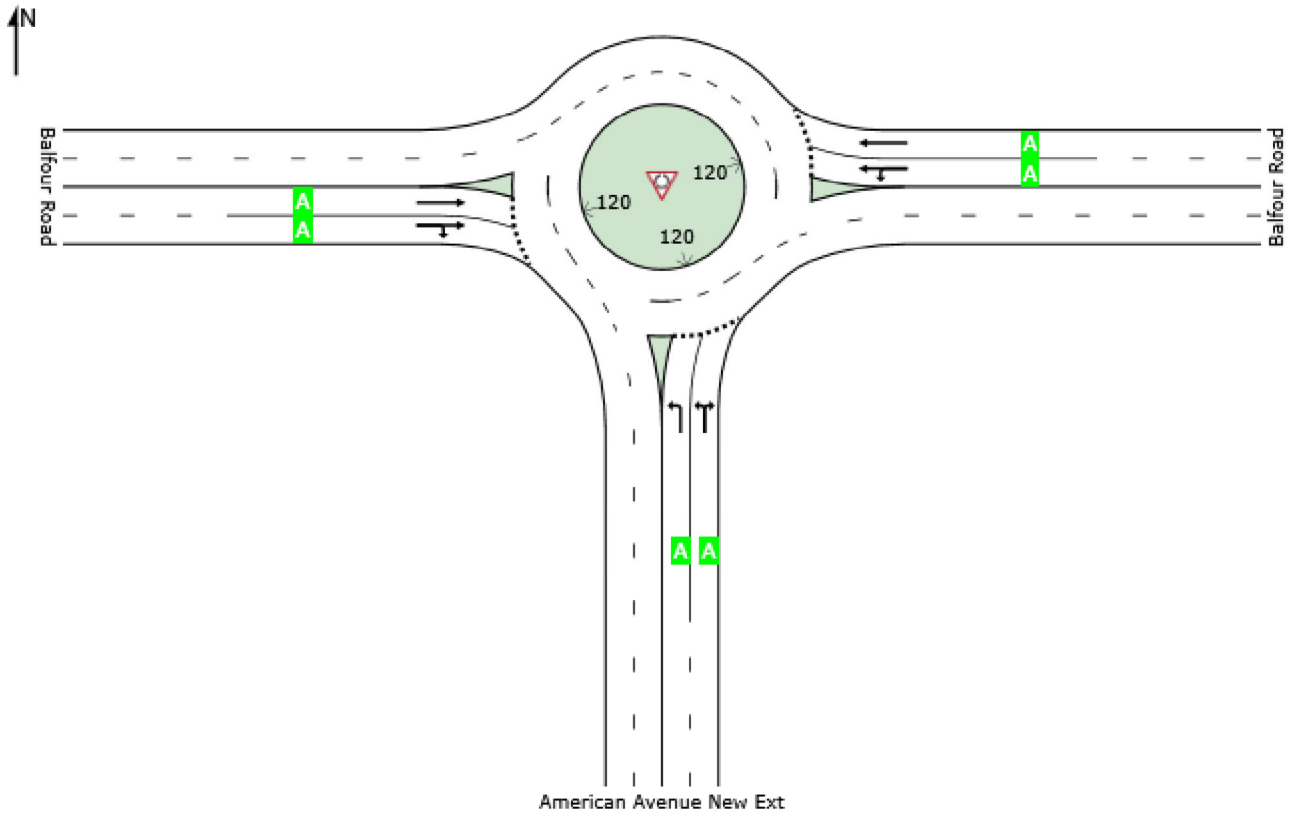
## Lane Level of Service

### Site: 7 [INT 7 - NT_PP_AM]

Vineyards at DeerCreek TIA
Roundabout

**All Movement Classes**

| | South | East | West | Intersection |
|---|---|---|---|---|
| LOS | A | A | A | A |




Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

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# MOVEMENT SUMMARY

## Site: 7 [INT 7 - NT_PP_AM]

Vineyards at DeerCreek TIA
Roundabout

| Movement Performance - Vehicles | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mov ID | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance ft | Prop. Queued | Effective Stop Rate per veh | Average Speed mph |
| South: American Avenue New Ext | | | | | | | | | | | |
| 3 | L2 | 65 | 3.0 | 0.079 | 5.1 | LOS A | 0.3 | 7.3 | 0.48 | 0.41 | 32.9 |
| 18 | R2 | 326 | 3.0 | 0.364 | 8.1 | LOS A | 1.6 | 40.4 | 0.57 | 0.55 | 32.8 |
| Approach | | 391 | 3.0 | 0.364 | 7.6 | LOS A | 1.6 | 40.4 | 0.56 | 0.53 | 32.8 |
| East: Balfour Road | | | | | | | | | | | |
| 1 | L2 | 326 | 3.0 | 0.394 | 6.8 | LOS A | 2.2 | 56.2 | 0.24 | 0.11 | 33.1 |
| 6 | T1 | 672 | 3.0 | 0.394 | 6.6 | LOS A | 2.2 | 56.2 | 0.23 | 0.11 | 34.5 |
| Approach | | 998 | 3.0 | 0.394 | 6.6 | LOS A | 2.2 | 56.2 | 0.24 | 0.11 | 34.0 |
| West: Balfour Road | | | | | | | | | | | |
| 2 | T1 | 491 | 3.0 | 0.355 | 7.4 | LOS A | 1.7 | 42.3 | 0.50 | 0.42 | 34.5 |
| 12 | R2 | 217 | 3.0 | 0.355 | 7.1 | LOS A | 1.6 | 41.6 | 0.49 | 0.41 | 33.3 |
| Approach | | 709 | 3.0 | 0.355 | 7.3 | LOS A | 1.7 | 42.3 | 0.50 | 0.42 | 34.1 |
| All Vehicles | | 2098 | 3.0 | 0.394 | 7.1 | LOS A | 2.2 | 56.2 | 0.38 | 0.29 | 33.8 |

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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# LANE LEVEL OF SERVICE

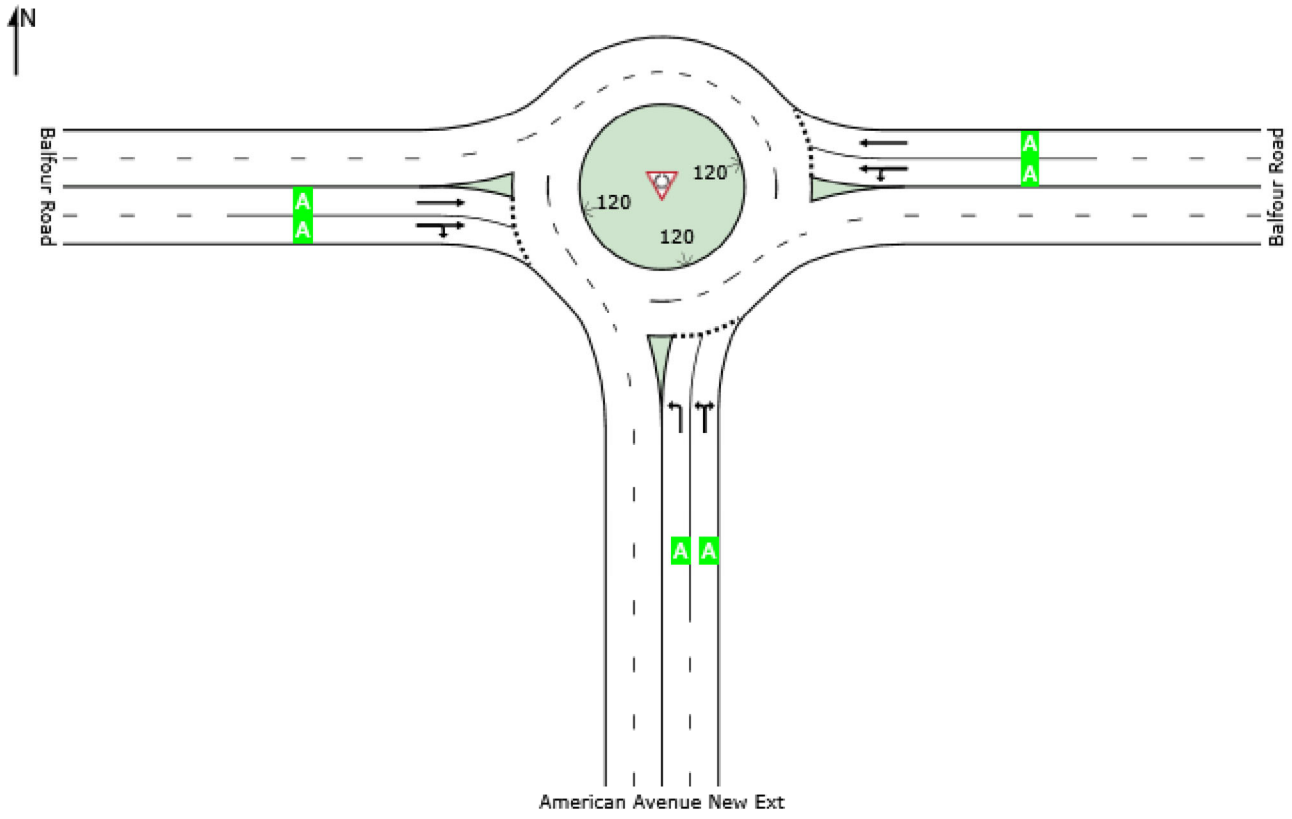
## Lane Level of Service

### Site: 7 [INT 7 - NT_PP_PM]

Vineyards at DeerCreek TIA
Roundabout

**All Movement Classes**

| | South | East | West | Intersection |
|---|---|---|---|---|
| LOS | A | A | A | A |




Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

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# MOVEMENT SUMMARY

## Site: 7 [INT 7 - NT_PP_PM]

Vineyards at DeerCreek TIA
Roundabout

| Movement Performance - Vehicles | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mov ID | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance ft | Prop. Queued | Effective Stop Rate per veh | Average Speed mph |
| South: American Avenue New Ext | | | | | | | | | | | |
| 3 | L2 | 54 | 3.0 | 0.087 | 6.7 | LOS A | 0.3 | 7.6 | 0.58 | 0.57 | 32.2 |
| 18 | R2 | 109 | 3.0 | 0.156 | 6.9 | LOS A | 0.5 | 14.0 | 0.58 | 0.58 | 33.4 |
| Approach | | 163 | 3.0 | 0.156 | 6.8 | LOS A | 0.5 | 14.0 | 0.58 | 0.58 | 33.0 |
| East: Balfour Road | | | | | | | | | | | |
| 1 | L2 | 1 | 3.0 | 0.217 | 4.8 | LOS A | 1.0 | 24.8 | 0.18 | 0.07 | 36.2 |
| 6 | T1 | 554 | 3.0 | 0.217 | 4.7 | LOS A | 1.0 | 24.8 | 0.17 | 0.07 | 36.0 |
| Approach | | 555 | 3.0 | 0.217 | 4.7 | LOS A | 1.0 | 24.8 | 0.17 | 0.07 | 36.0 |
| West: Balfour Road | | | | | | | | | | | |
| 2 | T1 | 778 | 3.0 | 0.298 | 5.3 | LOS A | 1.5 | 38.5 | 0.02 | 0.00 | 35.7 |
| 12 | R2 | 22 | 3.0 | 0.298 | 5.2 | LOS A | 1.5 | 37.5 | 0.02 | 0.00 | 34.4 |
| Approach | | 800 | 3.0 | 0.298 | 5.3 | LOS A | 1.5 | 38.5 | 0.02 | 0.00 | 35.6 |
| All Vehicles | | 1518 | 3.0 | 0.298 | 5.2 | LOS A | 1.5 | 38.5 | 0.13 | 0.09 | 35.5 |

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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# LANE LEVEL OF SERVICE

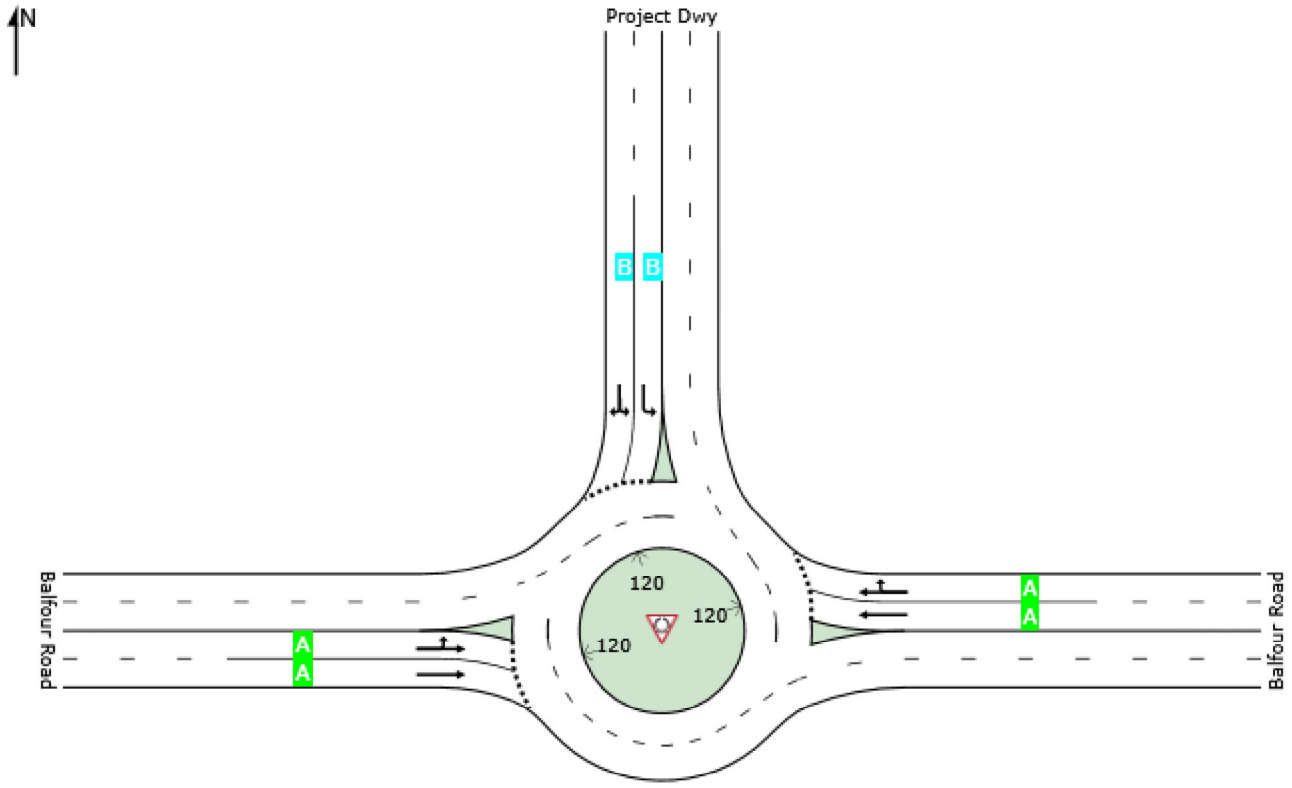
## Lane Level of Service

### Site: 7 [INT 8 - NT_PP_AM]

Vineyards at DeerCreek TIA
Roundabout

**All Movement Classes**

| | East | North | West | Intersection |
|---|---|---|---|---|
| LOS | A | B | A | A |




Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

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# MOVEMENT SUMMARY

## Site: 7 [INT 8 - NT_PP_AM]

Vineyards at DeerCreek TIA
Roundabout

| Movement Performance - Vehicles | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mov ID | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance ft | Prop. Queued | Effective Stop Rate per veh | Average Speed mph |
| East: Balfour Road | | | | | | | | | | | |
| 6 | T1 | 946 | 3.0 | 0.434 | 7.1 | LOS A | 2.6 | 66.7 | 0.20 | 0.08 | 34.7 |
| 16 | R2 | 175 | 3.0 | 0.434 | 6.9 | LOS A | 2.5 | 65.0 | 0.20 | 0.08 | 33.5 |
| Approach | | 1121 | 3.0 | 0.434 | 7.1 | LOS A | 2.6 | 66.7 | 0.20 | 0.08 | 34.5 |
| North: Project Dwy | | | | | | | | | | | |
| 7 | L2 | 447 | 3.0 | 0.438 | 13.4 | LOS B | 2.1 | 53.8 | 0.71 | 0.81 | 29.7 |
| 14 | R2 | 51 | 3.0 | 0.438 | 12.7 | LOS B | 2.1 | 53.8 | 0.71 | 0.80 | 29.1 |
| Approach | | 498 | 3.0 | 0.438 | 13.4 | LOS B | 2.1 | 53.8 | 0.71 | 0.81 | 29.6 |
| West: Balfour Road | | | | | | | | | | | |
| 5 | L2 | 43 | 3.0 | 0.457 | 10.0 | LOS A | 2.7 | 69.4 | 0.62 | 0.66 | 33.2 |
| 2 | T1 | 775 | 3.0 | 0.457 | 9.6 | LOS A | 2.7 | 69.4 | 0.61 | 0.64 | 33.3 |
| Approach | | 818 | 3.0 | 0.457 | 9.6 | LOS A | 2.7 | 69.4 | 0.61 | 0.65 | 33.3 |
| All Vehicles | | 2437 | 3.0 | 0.457 | 9.2 | LOS A | 2.7 | 69.4 | 0.44 | 0.42 | 33.0 |

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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# LANE LEVEL OF SERVICE

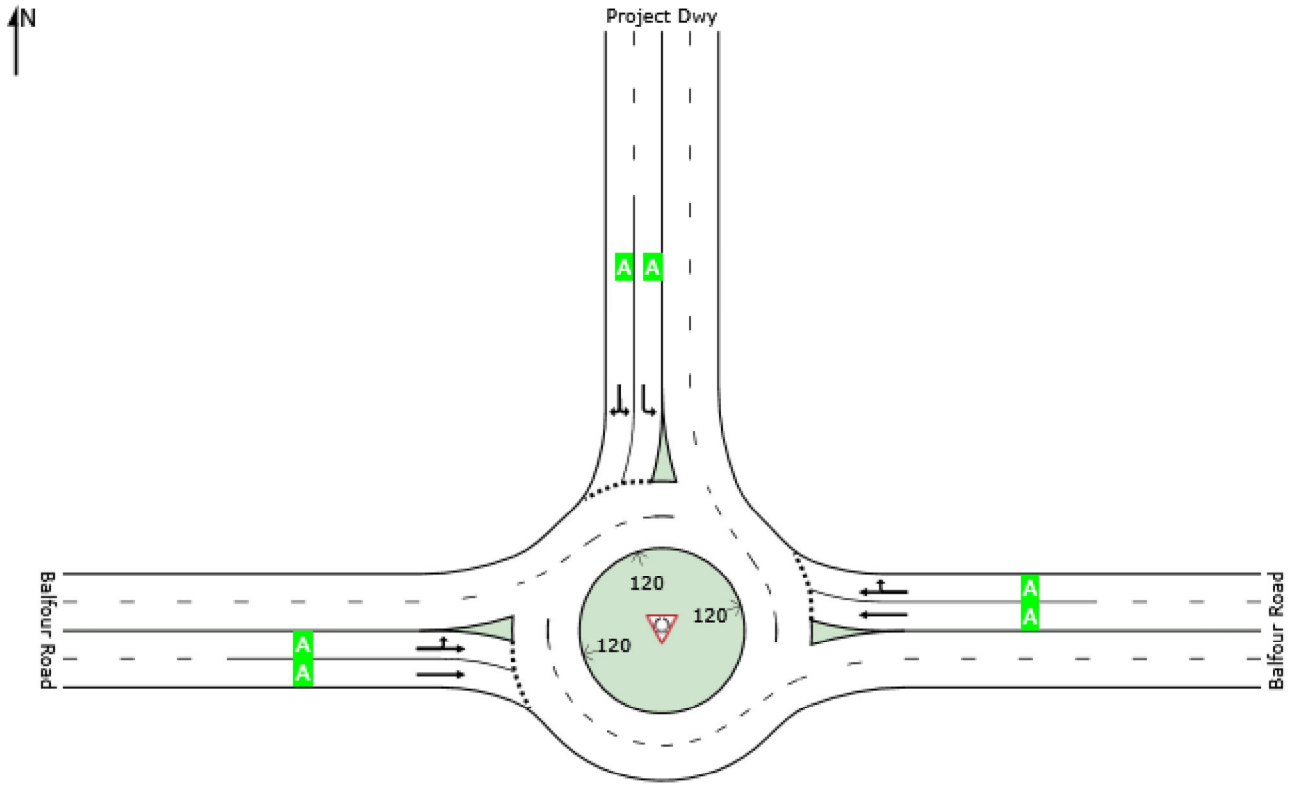
## Lane Level of Service

### Site: 7 [INT 8 - NT_PP_PM]

Vineyards at DeerCreek TIA
Roundabout

**All Movement Classes**

| | East | North | West | Intersection |
|---|---|---|---|---|
| LOS | A | A | A | A |




Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

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# MOVEMENT SUMMARY

## Site: 7 [INT 8 - NT_PP_PM]

Vineyards at DeerCreek TIA
Roundabout

| Movement Performance - Vehicles | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mov ID | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance ft | Prop. Queued | Effective Stop Rate per veh | Average Speed mph |
| East: Balfour Road | | | | | | | | | | | |
| 6 | T1 | 565 | 3.0 | 0.456 | 8.0 | LOS A | 2.7 | 68.1 | 0.38 | 0.24 | 34.2 |
| 16 | R2 | 523 | 3.0 | 0.456 | 7.6 | LOS A | 2.6 | 66.7 | 0.37 | 0.22 | 33.0 |
| Approach | | 1088 | 3.0 | 0.456 | 7.8 | LOS A | 2.7 | 68.1 | 0.37 | 0.23 | 33.7 |
| North: Project Dwy | | | | | | | | | | | |
| 7 | L2 | 398 | 3.0 | 0.274 | 7.6 | LOS A | 1.1 | 28.2 | 0.57 | 0.57 | 32.1 |
| 14 | R2 | 43 | 3.0 | 0.274 | 7.3 | LOS A | 1.1 | 27.9 | 0.56 | 0.55 | 31.2 |
| Approach | | 441 | 3.0 | 0.274 | 7.5 | LOS A | 1.1 | 28.2 | 0.57 | 0.56 | 32.0 |
| West: Balfour Road | | | | | | | | | | | |
| 5 | L2 | 132 | 3.0 | 0.474 | 9.9 | LOS A | 3.0 | 75.7 | 0.61 | 0.63 | 32.6 |
| 2 | T1 | 757 | 3.0 | 0.474 | 9.6 | LOS A | 3.0 | 75.7 | 0.60 | 0.61 | 33.1 |
| Approach | | 888 | 3.0 | 0.474 | 9.6 | LOS A | 3.0 | 75.7 | 0.60 | 0.61 | 33.0 |
| All Vehicles | | 2417 | 3.0 | 0.474 | 8.4 | LOS A | 3.0 | 75.7 | 0.49 | 0.43 | 33.1 |

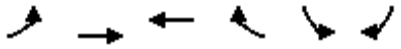
Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 100 | 820 | 20 | 40 | 950 | 130 | 150 | 120 | 70 | 120 | 30 | 140 |
| Future Volume (veh/h) | 100 | 820 | 20 | 40 | 950 | 130 | 150 | 120 | 70 | 120 | 30 | 140 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 105 | 863 | 21 | 42 | 1000 | 137 | 158 | 126 | 74 | 126 | 32 | 147 |
| Adj No. of Lanes | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 137 | 1392 | 34 | 63 | 1103 | 151 | 192 | 763 | 422 | 160 | 582 | 520 |
| Arrive On Green | 0.08 | 0.39 | 0.39 | 0.04 | 0.35 | 0.35 | 0.11 | 0.35 | 0.34 | 0.09 | 0.33 | 0.32 |
| Sat Flow, veh/h | 1774 | 3531 | 86 | 1774 | 3128 | 428 | 1774 | 2201 | 1217 | 1774 | 1770 | 1583 |
| Grp Volume(v), veh/h | 105 | 432 | 452 | 42 | 565 | 572 | 158 | 100 | 100 | 126 | 32 | 147 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1848 | 1774 | 1770 | 1787 | 1774 | 1770 | 1648 | 1774 | 1770 | 1583 |
| Q Serve(g_s), s | 7.0 | 23.5 | 23.5 | 2.8 | 36.5 | 36.5 | 10.5 | 4.7 | 5.1 | 8.3 | 1.5 | 8.3 |
| Cycle Q Clear(g_c), s | 7.0 | 23.5 | 23.5 | 2.8 | 36.5 | 36.5 | 10.5 | 4.7 | 5.1 | 8.3 | 1.5 | 8.3 |
| Prop In Lane | 1.00 | | 0.05 | 1.00 | | 0.24 | 1.00 | | 0.74 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 137 | 698 | 728 | 63 | 624 | 630 | 192 | 614 | 572 | 160 | 582 | 520 |
| V/C Ratio(X) | 0.77 | 0.62 | 0.62 | 0.67 | 0.91 | 0.91 | 0.82 | 0.16 | 0.18 | 0.79 | 0.06 | 0.28 |
| Avail Cap(c_a), veh/h | 177 | 708 | 739 | 133 | 664 | 670 | 237 | 614 | 572 | 237 | 582 | 520 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.64 | 0.64 | 0.64 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 54.3 | 29.1 | 29.2 | 57.2 | 36.9 | 37.0 | 52.4 | 27.1 | 27.4 | 53.5 | 27.5 | 30.0 |
| Incr Delay (d2), s/veh | 13.9 | 1.6 | 1.6 | 7.5 | 10.9 | 10.9 | 17.1 | 0.6 | 0.7 | 10.2 | 0.2 | 1.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.9 | 11.8 | 12.4 | 1.5 | 19.6 | 19.9 | 6.0 | 2.4 | 2.4 | 4.5 | 0.8 | 3.8 |
| LnGrp Delay(d),s/veh | 68.2 | 30.8 | 30.7 | 64.7 | 47.9 | 48.0 | 69.5 | 27.7 | 28.1 | 63.6 | 27.7 | 31.4 |
| LnGrp LOS | E | C | C | E | D | D | E | C | C | E | C | C |
| Approach Vol, veh/h | | 989 | | | 1179 | | | 358 | | | 305 | |
| Approach Delay, s/veh | | 34.7 | | | 48.5 | | | 46.2 | | | 44.3 | |
| Approach LOS | | C | | | D | | | D | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 14.8 | 45.6 | 8.3 | 51.3 | 17.0 | 43.4 | 13.2 | 46.3 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 15.5 | 30.5 | 8.5 | 47.5 | 15.5 | 30.5 | 11.5 | 44.5 |
| Max Q Clear Time (g_c+I1), s | 10.3 | 7.1 | 4.8 | 25.5 | 12.5 | 10.3 | 9.0 | 38.5 |
| Green Ext Time (p_c), s | 0.1 | 1.0 | 0.0 | 5.2 | 0.1 | 0.9 | 0.0 | 3.3 |

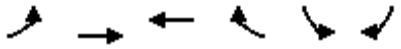
| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 42.9 |
| HCM 2010 LOS | D |



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 90 | 920 | 1060 | 880 | 310 | 60 |
| Future Volume (veh/h) | 90 | 920 | 1060 | 880 | 310 | 60 |
| Number | 7 | 4 | 8 | 18 | 1 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 95 | 968 | 1116 | 926 | 326 | 63 |
| Adj No. of Lanes | 1 | 2 | 2 | 1 | 2 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 134 | 2228 | 1780 | 1201 | 923 | 425 |
| Arrive On Green | 0.08 | 0.63 | 0.50 | 0.50 | 0.27 | 0.27 |
| Sat Flow, veh/h | 1774 | 3632 | 3632 | 1583 | 3442 | 1583 |
| Grp Volume(v), veh/h | 95 | 968 | 1116 | 926 | 326 | 63 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1770 | 1583 | 1721 | 1583 |
| Q Serve(g_s), s | 4.1 | 10.9 | 17.9 | 26.6 | 6.0 | 2.4 |
| Cycle Q Clear(g_c), s | 4.1 | 10.9 | 17.9 | 26.6 | 6.0 | 2.4 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 134 | 2228 | 1780 | 1201 | 923 | 425 |
| V/C Ratio(X) | 0.71 | 0.43 | 0.63 | 0.77 | 0.35 | 0.15 |
| Avail Cap(c_a), veh/h | 272 | 2759 | 2035 | 1315 | 923 | 425 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 35.4 | 7.4 | 14.1 | 5.5 | 23.1 | 21.8 |
| Incr Delay (d2), s/veh | 6.8 | 0.1 | 0.5 | 2.6 | 1.1 | 0.7 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.3 | 5.3 | 8.8 | 20.7 | 3.0 | 2.5 |
| LnGrp Delay(d),s/veh | 42.2 | 7.5 | 14.6 | 8.1 | 24.2 | 22.6 |
| LnGrp LOS | D | A | B | A | C | C |
| Approach Vol, veh/h | | 1063 | 2042 | | 389 | |
| Approach Delay, s/veh | | 10.6 | 11.7 | | 23.9 | |
| Approach LOS | | B | B | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | | | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | | | 53.3 | | 25.0 | 9.9 | 43.4 |
| Change Period (Y+Rc), s | | | | 4.5 | | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | | | | 60.5 | | 20.5 | 11.5 | 44.5 |
| Max Q Clear Time (g_c+I1), s | | | | 12.9 | | 8.0 | 6.1 | 28.6 |
| Green Ext Time (p_c), s | | | | 7.7 | | 1.1 | 0.1 | 10.3 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 12.7 |
| HCM 2010 LOS | B |



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 370 | 930 | 1840 | 570 | 960 | 160 |
| Future Volume (veh/h) | 370 | 930 | 1840 | 570 | 960 | 160 |
| Number | 5 | 2 | 6 | 16 | 3 | 18 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 389 | 979 | 1937 | 600 | 1011 | 168 |
| Adj No. of Lanes | 1 | 3 | 2 | 1 | 2 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 325 | 3577 | 1734 | 776 | 815 | 375 |
| Arrive On Green | 0.18 | 0.70 | 0.49 | 0.49 | 0.24 | 0.24 |
| Sat Flow, veh/h | 1774 | 5253 | 3632 | 1583 | 3442 | 1583 |
| Grp Volume(v), veh/h | 389 | 979 | 1937 | 600 | 1011 | 168 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1695 | 1770 | 1583 | 1721 | 1583 |
| Q Serve(g_s), s | 27.5 | 10.6 | 73.5 | 46.7 | 35.5 | 13.6 |
| Cycle Q Clear(g_c), s | 27.5 | 10.6 | 73.5 | 46.7 | 35.5 | 13.6 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 325 | 3577 | 1734 | 776 | 815 | 375 |
| V/C Ratio(X) | 1.20 | 0.27 | 1.12 | 0.77 | 1.24 | 0.45 |
| Avail Cap(c_a), veh/h | 325 | 3577 | 1734 | 776 | 815 | 375 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 61.3 | 8.2 | 38.2 | 31.4 | 57.2 | 48.9 |
| Incr Delay (d2), s/veh | 114.3 | 0.0 | 61.2 | 4.9 | 118.9 | 0.8 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 23.8 | 4.9 | 50.6 | 21.4 | 30.3 | 6.0 |
| LnGrp Delay(d),s/veh | 175.5 | 8.2 | 99.4 | 36.3 | 176.2 | 49.7 |
| LnGrp LOS | F | A | F | D | F | D |
| Approach Vol, veh/h | | 1368 | 2537 | | 1179 | |
| Approach Delay, s/veh | | 55.8 | 84.5 | | 158.2 | |
| Approach LOS | | E | F | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 110.0 | | | 32.0 | 78.0 | | 40.0 |
| Change Period (Y+Rc), s | | 4.5 | | | 4.5 | 4.5 | | 4.5 |
| Max Green Setting (Gmax), s | | 105.5 | | | 27.5 | 73.5 | | 35.5 |
| Max Q Clear Time (g_c+I1), s | | 12.6 | | | 29.5 | 75.5 | | 37.5 |
| Green Ext Time (p_c), s | | 7.8 | | | 0.0 | 0.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 93.8 |
| HCM 2010 LOS | F |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 380 | 1510 | 0 | 0 | 1850 | 1170 | 560 | 0 | 220 | 0 | 0 | 0 |
| Future Volume (veh/h) | 380 | 1510 | 0 | 0 | 1850 | 1170 | 560 | 0 | 220 | 0 | 0 | 0 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 7 | 4 | 14 | | | |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | | | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 0 | 0 | 1863 | 1863 | 1863 | 1863 | 1863 | | | |
| Adj Flow Rate, veh/h | 400 | 1589 | 0 | 0 | 2206 | 1060 | 589 | 0 | 232 | | | |
| Adj No. of Lanes | 2 | 3 | 0 | 0 | 2 | 1 | 2 | 0 | 1 | | | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | | | |
| Percent Heavy Veh, % | 2 | 2 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | | | |
| Cap, veh/h | 233 | 2957 | 0 | 0 | 1662 | 706 | 850 | 0 | 379 | | | |
| Arrive On Green | 0.07 | 0.58 | 0.00 | 0.00 | 0.45 | 0.45 | 0.24 | 0.00 | 0.24 | | | |
| Sat Flow, veh/h | 3442 | 5253 | 0 | 0 | 3725 | 1583 | 3548 | 0 | 1583 | | | |
| Grp Volume(v), veh/h | 400 | 1589 | 0 | 0 | 2206 | 1060 | 589 | 0 | 232 | | | |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1695 | 0 | 0 | 1863 | 1583 | 1774 | 0 | 1583 | | | |
| Q Serve(g_s), s | 4.0 | 11.3 | 0.0 | 0.0 | 26.4 | 26.4 | 9.0 | 0.0 | 7.7 | | | |
| Cycle Q Clear(g_c), s | 4.0 | 11.3 | 0.0 | 0.0 | 26.4 | 26.4 | 9.0 | 0.0 | 7.7 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 1.00 | 1.00 | | 1.00 | | | |
| Lane Grp Cap(c), veh/h | 233 | 2957 | 0 | 0 | 1662 | 706 | 850 | 0 | 379 | | | |
| V/C Ratio(X) | 1.72 | 0.54 | 0.00 | 0.00 | 1.33 | 1.50 | 0.69 | 0.00 | 0.61 | | | |
| Avail Cap(c_a), veh/h | 233 | 2957 | 0 | 0 | 1662 | 706 | 2699 | 0 | 1204 | | | |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | | | |
| Uniform Delay (d), s/veh | 27.6 | 7.5 | 0.0 | 0.0 | 16.4 | 16.4 | 20.5 | 0.0 | 20.1 | | | |
| Incr Delay (d2), s/veh | 341.2 | 0.2 | 0.0 | 0.0 | 151.5 | 232.6 | 1.0 | 0.0 | 1.6 | | | |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| %ile BackOfQ(50%),veh/ln | 12.9 | 5.2 | 0.0 | 0.0 | 48.4 | 57.0 | 4.5 | 0.0 | 6.9 | | | |
| LnGrp Delay(d),s/veh | 368.8 | 7.7 | 0.0 | 0.0 | 167.8 | 249.0 | 21.5 | 0.0 | 21.7 | | | |
| LnGrp LOS | F | A | | | F | F | C | | C | | | |
| Approach Vol, veh/h | | 1989 | | | 3266 | | | 821 | | | | |
| Approach Delay, s/veh | | 80.3 | | | 194.2 | | | 21.6 | | | | |
| Approach LOS | | F | | | F | | | C | | | | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | |
| Phs Duration (G+Y+Rc), s | | 39.7 | | 19.5 | 8.0 | 31.7 | | |
| Change Period (Y+Rc), s | | 5.3 | | 5.3 | 4.0 | 5.3 | | |
| Max Green Setting (Gmax), s | | 34.4 | | 45.0 | 4.0 | 26.4 | | |
| Max Q Clear Time (g_c+I1), s | | 13.3 | | 11.0 | 6.0 | 28.4 | | |
| Green Ext Time (p_c), s | | 11.2 | | 3.2 | 0.0 | 0.0 | | |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 133.6 |
| HCM 2010 LOS | F |

Notes

| Intersection | |
|---|---|
| Int Delay, s/veh | 109.7 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 100 | 520 | 50 | 110 | 500 | 40 |
| Future Vol, veh/h | 100 | 520 | 50 | 110 | 500 | 40 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 105 | 547 | 53 | 116 | 526 | 42 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1205 | 111 | 0 | 0 | 169 | 0 |
| Stage 1 | 111 | - | - | - | - | - |
| Stage 2 | 1094 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 203 | 942 | - | - | 1409 | - |
| Stage 1 | 914 | - | - | - | - | - |
| Stage 2 | 321 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 125 | 942 | - | - | 1409 | - |
| Mov Cap-2 Maneuver | 125 | - | - | - | - | - |
| Stage 1 | 565 | - | - | - | - | - |
| Stage 2 | 321 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 226.2 | 0 | 8.4 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 459 | 1409 | - |
| HCM Lane V/C Ratio | - | - | 1.422 | 0.374 | - |
| HCM Control Delay (s) | - | - | 226.2 | 9.1 | 0 |
| HCM Lane LOS | - | - | F | A | A |
| HCM 95th %tile Q(veh) | - | - | 31.9 | 1.8 | - |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 290 | 430 | 430 | 560 | 160 | 570 |
| Future Volume (veh/h) | 290 | 430 | 430 | 560 | 160 | 570 |
| Number | 4 | 14 | 3 | 8 | 5 | 12 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 305 | 453 | 453 | 589 | 168 | 600 |
| Adj No. of Lanes | 2 | 0 | 1 | 2 | 1 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 452 | 404 | 513 | 2147 | 478 | 884 |
| Arrive On Green | 0.26 | 0.26 | 0.29 | 0.61 | 0.27 | 0.27 |
| Sat Flow, veh/h | 1863 | 1583 | 1774 | 3632 | 1774 | 1583 |
| Grp Volume(v), veh/h | 305 | 453 | 453 | 589 | 168 | 600 |
| Grp Sat Flow(s),veh/h/ln | 1770 | 1583 | 1774 | 1770 | 1774 | 1583 |
| Q Serve(g_s), s | 11.2 | 18.5 | 17.7 | 5.7 | 5.5 | 19.5 |
| Cycle Q Clear(g_c), s | 11.2 | 18.5 | 17.7 | 5.7 | 5.5 | 19.5 |
| Prop In Lane | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 452 | 404 | 513 | 2147 | 478 | 884 |
| V/C Ratio(X) | 0.67 | 1.12 | 0.88 | 0.27 | 0.35 | 0.68 |
| Avail Cap(c_a), veh/h | 452 | 404 | 943 | 3005 | 478 | 884 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 24.3 | 27.0 | 24.6 | 6.7 | 21.4 | 11.4 |
| Incr Delay (d2), s/veh | 3.9 | 81.6 | 5.2 | 0.1 | 0.4 | 2.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 6.0 | 17.1 | 9.3 | 2.7 | 2.8 | 8.9 |
| LnGrp Delay(d),s/veh | 28.2 | 108.6 | 29.8 | 6.8 | 21.8 | 13.5 |
| LnGrp LOS | C | F | C | A | C | B |
| Approach Vol, veh/h | 758 | | | 1042 | 768 | |
| Approach Delay, s/veh | 76.2 | | | 16.8 | 15.3 | |
| Approach LOS | E | | | B | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | 3 | 4 | | | | 8 |
| Phs Duration (G+Y+Rc), s | | 24.0 | 25.4 | 23.0 | | | | 48.4 |
| Change Period (Y+Rc), s | | 4.5 | 4.5 | 4.5 | | | | 4.5 |
| Max Green Setting (Gmax), s | | 19.5 | 38.5 | 18.5 | | | | 61.5 |
| Max Q Clear Time (g_c+I1), s | | 21.5 | 19.7 | 20.5 | | | | 7.7 |
| Green Ext Time (p_c), s | | 0.0 | 1.3 | 0.0 | | | | 3.9 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 33.9 |
| HCM 2010 LOS | C |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 80 | 750 | 30 | 570 | 960 | 100 | 20 | 280 | 480 | 100 | 620 | 10 |
| Future Volume (veh/h) | 80 | 750 | 30 | 570 | 960 | 100 | 20 | 280 | 480 | 100 | 620 | 10 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.95 | 1.00 | | 0.51 | 1.00 | | 0.64 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 84 | 789 | -17 | 600 | 1011 | 98 | 21 | 295 | 254 | 105 | 653 | 10 |
| Adj No. of Lanes | 1 | 2 | 0 | 2 | 2 | 0 | 1 | 1 | 2 | 1 | 1 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 105 | 944 | 0 | 632 | 1269 | 123 | 37 | 619 | 984 | 130 | 705 | 11 |
| Arrive On Green | 0.06 | 0.27 | 0.00 | 0.18 | 0.39 | 0.39 | 0.02 | 0.33 | 0.33 | 0.07 | 0.39 | 0.39 |
| Sat Flow, veh/h | 1774 | 3632 | 0 | 3442 | 3243 | 314 | 1774 | 1863 | 1420 | 1774 | 1811 | 28 |
| Grp Volume(v), veh/h | 84 | 772 | 0 | 600 | 551 | 558 | 21 | 295 | 254 | 105 | 0 | 663 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 0 | 1721 | 1770 | 1788 | 1774 | 1863 | 710 | 1774 | 0 | 1839 |
| Q Serve(g_s), s | 5.9 | 25.6 | 0.0 | 21.6 | 34.5 | 34.5 | 1.5 | 15.7 | 13.2 | 7.3 | 0.0 | 43.1 |
| Cycle Q Clear(g_c), s | 5.9 | 25.6 | 0.0 | 21.6 | 34.5 | 34.5 | 1.5 | 15.7 | 13.2 | 7.3 | 0.0 | 43.1 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 0.18 | 1.00 | | 1.00 | 1.00 | | 0.02 |
| Lane Grp Cap(c), veh/h | 105 | 944 | 0 | 632 | 692 | 699 | 37 | 619 | 984 | 130 | 0 | 715 |
| V/C Ratio(X) | 0.80 | 0.82 | 0.00 | 0.95 | 0.80 | 0.80 | 0.57 | 0.48 | 0.26 | 0.81 | 0.00 | 0.93 |
| Avail Cap(c_a), veh/h | 113 | 1371 | 0 | 632 | 898 | 907 | 71 | 655 | 1011 | 234 | 0 | 823 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 58.1 | 43.0 | 0.0 | 50.5 | 33.7 | 33.7 | 60.8 | 33.1 | 17.8 | 57.1 | 0.0 | 36.5 |
| Incr Delay (d2), s/veh | 30.1 | 2.9 | 0.0 | 23.9 | 4.2 | 4.2 | 13.2 | 0.6 | 0.1 | 11.1 | 0.0 | 15.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.7 | 12.9 | 0.0 | 12.3 | 17.7 | 17.8 | 0.9 | 8.2 | 2.6 | 4.0 | 0.0 | 24.9 |
| LnGrp Delay(d),s/veh | 88.2 | 46.0 | 0.0 | 74.4 | 37.9 | 37.9 | 74.0 | 33.7 | 18.0 | 68.2 | 0.0 | 51.7 |
| LnGrp LOS | F | D | | E | D | D | E | C | B | E | | D |
| Approach Vol, veh/h | | 856 | | | 1709 | | | 570 | | | 768 | |
| Approach Delay, s/veh | | 50.1 | | | 50.7 | | | 28.2 | | | 54.0 | |
| Approach LOS | | D | | | D | | | C | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 17.0 | 38.9 | 6.6 | 52.7 | 11.4 | 54.5 | 13.7 | 45.6 |
| Change Period (Y+Rc), s | 4.0 | 5.5 | 4.0 | 4.0 | 4.0 | 5.5 | 4.5 | 4.0 |
| Max Green Setting (Gmax), s | 13.0 | 48.5 | 5.0 | 56.0 | 8.0 | 63.5 | 16.5 | 44.0 |
| Max Q Clear Time (g_c+I1), s | 11.6 | 27.6 | 3.5 | 45.1 | 7.9 | 36.5 | 9.3 | 17.7 |
| Green Ext Time (p_c), s | 0.0 | 5.8 | 0.0 | 3.6 | 0.0 | 9.2 | 0.1 | 4.4 |

| Intersection Summary | | |
|---|---|---|
| HCM 2010 Ctrl Delay | | 47.9 |
| HCM 2010 LOS | | D |

| Intersection | |
|---|---|
| Int Delay, s/veh | 7.4 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 1280 | 50 | 10 | 1600 | 30 | 80 |
| Future Vol, veh/h | 1280 | 50 | 10 | 1600 | 30 | 80 |
| Conflicting Peds, #/hr | 0 | 1 | 1 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 150 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1347 | 53 | 11 | 1684 | 32 | 84 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 1401 | 0 | 2239 | 701 |
| Stage 1 | - | - | - | - | 1375 | - |
| Stage 2 | - | - | - | - | 864 | - |
| Critical Hdwy | - | - | 4.14 | - | 6.84 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 | - |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 | 3.32 |
| Pot Cap-1 Maneuver | - | - | 484 | - | 36 | 381 |
| Stage 1 | - | - | - | - | 200 | - |
| Stage 2 | - | - | - | - | 373 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 484 | - | 35 | 381 |
| Mov Cap-2 Maneuver | - | - | - | - | 35 | - |
| Stage 1 | - | - | - | - | 195 | - |
| Stage 2 | - | - | - | - | 373 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.1 | 203.8 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 103 | - | - | 484 | - |
| HCM Lane V/C Ratio | 1.124 | - | - | 0.022 | - |
| HCM Control Delay (s) | 203.8 | - | - | 12.6 | - |
| HCM Lane LOS | F | - | - | B | - |
| HCM 95th %tile Q(veh) | 7.4 | - | - | 0.1 | - |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 80 | 1180 | 120 | 50 | 1150 | 60 | 230 | 120 | 80 | 160 | 160 | 250 |
| Future Volume (veh/h) | 80 | 1180 | 120 | 50 | 1150 | 60 | 230 | 120 | 80 | 160 | 160 | 250 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.98 | 1.00 | | 0.99 | 1.00 | | 0.99 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 84 | 1242 | 121 | 53 | 1211 | 63 | 242 | 126 | 8 | 168 | 168 | 203 |
| Adj No. of Lanes | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 105 | 1497 | 145 | 202 | 1791 | 93 | 232 | 457 | 385 | 193 | 171 | 206 |
| Arrive On Green | 0.06 | 0.46 | 0.46 | 0.11 | 0.52 | 0.52 | 0.13 | 0.25 | 0.25 | 0.11 | 0.22 | 0.22 |
| Sat Flow, veh/h | 1774 | 3259 | 317 | 1774 | 3418 | 178 | 1774 | 1863 | 1570 | 1774 | 765 | 924 |
| Grp Volume(v), veh/h | 84 | 673 | 690 | 53 | 626 | 648 | 242 | 126 | 8 | 168 | 0 | 371 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1806 | 1774 | 1770 | 1826 | 1774 | 1863 | 1570 | 1774 | 0 | 1689 |
| Q Serve(g_s), s | 6.1 | 43.1 | 43.5 | 3.5 | 33.9 | 34.0 | 17.0 | 7.1 | 0.4 | 12.1 | 0.0 | 28.4 |
| Cycle Q Clear(g_c), s | 6.1 | 43.1 | 43.5 | 3.5 | 33.9 | 34.0 | 17.0 | 7.1 | 0.4 | 12.1 | 0.0 | 28.4 |
| Prop In Lane | 1.00 | | 0.18 | 1.00 | | 0.10 | 1.00 | | 1.00 | 1.00 | | 0.55 |
| Lane Grp Cap(c), veh/h | 105 | 813 | 829 | 202 | 927 | 957 | 232 | 457 | 385 | 193 | 0 | 377 |
| V/C Ratio(X) | 0.80 | 0.83 | 0.83 | 0.26 | 0.68 | 0.68 | 1.04 | 0.28 | 0.02 | 0.87 | 0.00 | 0.98 |
| Avail Cap(c_a), veh/h | 109 | 813 | 829 | 202 | 927 | 957 | 232 | 457 | 385 | 218 | 0 | 377 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.85 | 0.85 | 0.85 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 60.4 | 30.7 | 30.8 | 52.6 | 22.8 | 22.8 | 56.5 | 39.7 | 26.7 | 57.0 | 0.0 | 50.3 |
| Incr Delay (d2), s/veh | 29.8 | 9.5 | 9.5 | 0.2 | 3.4 | 3.3 | 70.8 | 0.5 | 0.0 | 25.3 | 0.0 | 42.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.9 | 23.1 | 23.9 | 1.7 | 17.4 | 18.0 | 12.9 | 3.7 | 0.2 | 7.3 | 0.0 | 17.7 |
| LnGrp Delay(d),s/veh | 90.2 | 40.2 | 40.3 | 52.8 | 26.2 | 26.1 | 127.3 | 40.2 | 26.7 | 82.3 | 0.0 | 92.4 |
| LnGrp LOS | F | D | D | D | C | C | F | D | C | F | | F |
| Approach Vol, veh/h | | 1447 | | | 1327 | | | 376 | | | 539 | |
| Approach Delay, s/veh | | 43.1 | | | 27.2 | | | 96.0 | | | 89.3 | |
| Approach LOS | | D | | | C | | | F | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 20.4 | 65.0 | 21.0 | 33.0 | 11.7 | 73.7 | 18.1 | 35.9 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 4.0 | 4.0 | 4.0 | 5.3 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 7.0 | * 60 | 17.0 | 29.0 | 8.0 | 58.7 | 16.0 | 30.0 |
| Max Q Clear Time (g_c+I1), s | 5.5 | 45.5 | 19.0 | 30.4 | 8.1 | 36.0 | 14.1 | 9.1 |
| Green Ext Time (p_c), s | 0.0 | 13.3 | 0.0 | 0.0 | 0.0 | 20.0 | 0.0 | 0.9 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 49.5 |
| HCM 2010 LOS | D |

Notes



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 60 | 1210 | 140 | 110 | 1150 | 50 | 80 | 20 | 60 | 20 | 10 | 30 |
| Future Volume (veh/h) | 60 | 1210 | 140 | 110 | 1150 | 50 | 80 | 20 | 60 | 20 | 10 | 30 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 63 | 1274 | 114 | 116 | 1211 | 39 | 84 | 21 | 26 | 21 | 11 | 16 |
| Adj No. of Lanes | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 500 | 2506 | 1121 | 156 | 1636 | 732 | 105 | 154 | 131 | 51 | 36 | 53 |
| Arrive On Green | 0.56 | 1.00 | 1.00 | 0.05 | 0.46 | 0.46 | 0.06 | 0.08 | 0.08 | 0.03 | 0.05 | 0.05 |
| Sat Flow, veh/h | 1774 | 3539 | 1583 | 3442 | 3539 | 1583 | 1774 | 1863 | 1583 | 1774 | 687 | 999 |
| Grp Volume(v), veh/h | 63 | 1274 | 114 | 116 | 1211 | 39 | 84 | 21 | 26 | 21 | 0 | 27 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1583 | 1721 | 1770 | 1583 | 1774 | 1863 | 1583 | 1774 | 0 | 1686 |
| Q Serve(g_s), s | 2.2 | 0.0 | 0.0 | 4.3 | 36.4 | 1.4 | 6.1 | 1.4 | 2.0 | 1.5 | 0.0 | 2.0 |
| Cycle Q Clear(g_c), s | 2.2 | 0.0 | 0.0 | 4.3 | 36.4 | 1.4 | 6.1 | 1.4 | 2.0 | 1.5 | 0.0 | 2.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.59 |
| Lane Grp Cap(c), veh/h | 500 | 2506 | 1121 | 156 | 1636 | 732 | 105 | 154 | 131 | 51 | 0 | 89 |
| V/C Ratio(X) | 0.13 | 0.51 | 0.10 | 0.74 | 0.74 | 0.05 | 0.80 | 0.14 | 0.20 | 0.41 | 0.00 | 0.30 |
| Avail Cap(c_a), veh/h | 500 | 2506 | 1121 | 156 | 1636 | 732 | 121 | 543 | 462 | 96 | 0 | 467 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.51 | 0.51 | 0.51 | 0.77 | 0.77 | 0.77 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 20.8 | 0.0 | 0.0 | 61.3 | 28.6 | 12.7 | 60.4 | 55.3 | 55.6 | 62.1 | 0.0 | 59.3 |
| Incr Delay (d2), s/veh | 0.0 | 0.4 | 0.1 | 12.2 | 2.4 | 0.1 | 23.5 | 0.1 | 0.3 | 2.0 | 0.0 | 0.7 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.1 | 0.1 | 0.0 | 2.3 | 18.2 | 0.6 | 3.7 | 0.7 | 0.9 | 0.8 | 0.0 | 1.0 |
| LnGrp Delay(d),s/veh | 20.8 | 0.4 | 0.1 | 73.5 | 30.9 | 12.8 | 83.9 | 55.5 | 55.9 | 64.1 | 0.0 | 60.0 |
| LnGrp LOS | C | A | A | E | C | B | F | E | E | E | | E |
| Approach Vol, veh/h | | 1451 | | | 1366 | | | 131 | | | 48 | |
| Approach Delay, s/veh | | 1.2 | | | 34.0 | | | 73.8 | | | 61.8 | |
| Approach LOS | | A | | | C | | | E | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 10.0 | 97.4 | 11.8 | 10.9 | 42.0 | 65.4 | 7.8 | 14.8 |
| Change Period (Y+Rc), s | 4.1 | 5.3 | 4.1 | 4.0 | 5.3 | * 5.3 | 4.1 | * 4.1 |
| Max Green Setting (Gmax), s | 5.9 | 61.7 | 8.9 | 36.0 | 7.5 | * 60 | 7.0 | * 38 |
| Max Q Clear Time (g_c+I1), s | 6.3 | 2.0 | 8.1 | 4.0 | 4.2 | 38.4 | 3.5 | 4.0 |
| Green Ext Time (p_c), s | 0.0 | 47.9 | 0.0 | 0.1 | 0.0 | 19.0 | 0.0 | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 20.3 |
| HCM 2010 LOS | C |

Notes

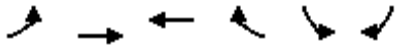


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 70 | 1140 | 30 | 450 | 1250 | 40 | 10 | 40 | 370 | 110 | 40 | 50 |
| Future Volume (veh/h) | 70 | 1140 | 30 | 450 | 1250 | 40 | 10 | 40 | 370 | 110 | 40 | 50 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 74 | 1200 | 24 | 474 | 1316 | 41 | 11 | 42 | 126 | 116 | 42 | 14 |
| Adj No. of Lanes | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 467 | 2075 | 928 | 424 | 1544 | 690 | 118 | 193 | 164 | 96 | 122 | 41 |
| Arrive On Green | 0.18 | 0.39 | 0.39 | 0.12 | 0.44 | 0.44 | 0.07 | 0.10 | 0.10 | 0.05 | 0.09 | 0.09 |
| Sat Flow, veh/h | 1774 | 3539 | 1583 | 3442 | 3539 | 1582 | 1774 | 1863 | 1579 | 1774 | 1337 | 446 |
| Grp Volume(v), veh/h | 74 | 1200 | 24 | 474 | 1316 | 41 | 11 | 42 | 126 | 116 | 0 | 56 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1583 | 1721 | 1770 | 1582 | 1774 | 1863 | 1579 | 1774 | 0 | 1783 |
| Q Serve(g_s), s | 4.6 | 34.6 | 0.8 | 16.0 | 43.4 | 1.5 | 0.8 | 2.7 | 10.1 | 7.0 | 0.0 | 3.8 |
| Cycle Q Clear(g_c), s | 4.6 | 34.6 | 0.8 | 16.0 | 43.4 | 1.5 | 0.8 | 2.7 | 10.1 | 7.0 | 0.0 | 3.8 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.25 |
| Lane Grp Cap(c), veh/h | 467 | 2075 | 928 | 424 | 1544 | 690 | 118 | 193 | 164 | 96 | 0 | 162 |
| V/C Ratio(X) | 0.16 | 0.58 | 0.03 | 1.12 | 0.85 | 0.06 | 0.09 | 0.22 | 0.77 | 1.21 | 0.00 | 0.34 |
| Avail Cap(c_a), veh/h | 467 | 2075 | 928 | 424 | 1544 | 690 | 118 | 602 | 510 | 96 | 0 | 576 |
| HCM Platoon Ratio | 0.67 | 0.67 | 0.67 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.83 | 0.83 | 0.83 | 0.45 | 0.45 | 0.45 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 41.3 | 26.9 | 7.4 | 57.0 | 32.9 | 12.8 | 57.0 | 53.4 | 56.7 | 61.5 | 0.0 | 55.4 |
| Incr Delay (d2), s/veh | 0.0 | 1.0 | 0.0 | 67.8 | 2.9 | 0.1 | 0.1 | 0.2 | 2.8 | 160.6 | 0.0 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.3 | 17.3 | 0.4 | 11.6 | 21.8 | 0.7 | 0.4 | 1.4 | 4.6 | 7.7 | 0.0 | 1.9 |
| LnGrp Delay(d),s/veh | 41.4 | 27.8 | 7.5 | 124.8 | 35.8 | 12.9 | 57.1 | 53.6 | 59.6 | 222.1 | 0.0 | 55.9 |
| LnGrp LOS | D | C | A | F | D | B | E | D | E | F | | E |
| Approach Vol, veh/h | | 1298 | | | 1831 | | | 179 | | | 172 | |
| Approach Delay, s/veh | | 28.2 | | | 58.3 | | | 58.0 | | | 168.0 | |
| Approach LOS | | C | | | E | | | E | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 20.0 | 81.5 | 12.7 | 15.8 | 39.5 | 62.0 | 11.0 | 17.5 |
| Change Period (Y+Rc), s | 4.0 | 5.3 | 4.0 | 4.0 | 5.3 | * 5.3 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 16.0 | 47.7 | 7.0 | 42.0 | 7.0 | * 57 | 7.0 | 42.0 |
| Max Q Clear Time (g_c+I1), s | 8.0 | 36.6 | 2.8 | 5.8 | 6.6 | 45.4 | 9.0 | 12.1 |
| Green Ext Time (p_c), s | 0.0 | 4.2 | 0.0 | 0.2 | 0.0 | 4.8 | 0.0 | 0.4 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 52.5 |
| HCM 2010 LOS | D |

Notes



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 290 | 1330 | 860 | 100 | 480 | 910 |
| Future Volume (veh/h) | 290 | 1330 | 860 | 100 | 480 | 910 |
| Number | 7 | 4 | 8 | 18 | 1 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 305 | 1400 | 905 | 0 | 505 | 679 |
| Adj No. of Lanes | 2 | 2 | 3 | 1 | 2 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 366 | 1502 | 1426 | 444 | 1723 | 793 |
| Arrive On Green | 0.11 | 0.42 | 0.28 | 0.00 | 0.50 | 0.50 |
| Sat Flow, veh/h | 3442 | 3632 | 5253 | 1583 | 3442 | 1583 |
| Grp Volume(v), veh/h | 305 | 1400 | 905 | 0 | 505 | 679 |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1770 | 1695 | 1583 | 1721 | 1583 |
| Q Serve(g_s), s | 10.4 | 45.2 | 18.7 | 0.0 | 10.3 | 45.0 |
| Cycle Q Clear(g_c), s | 10.4 | 45.2 | 18.7 | 0.0 | 10.3 | 45.0 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 366 | 1502 | 1426 | 444 | 1723 | 793 |
| V/C Ratio(X) | 0.83 | 0.93 | 0.63 | 0.00 | 0.29 | 0.86 |
| Avail Cap(c_a), veh/h | 456 | 1548 | 1426 | 444 | 1723 | 793 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.52 | 0.52 | 1.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 52.6 | 32.9 | 37.8 | 0.0 | 17.5 | 26.2 |
| Incr Delay (d2), s/veh | 5.6 | 6.0 | 0.9 | 0.0 | 0.1 | 9.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 5.2 | 23.2 | 8.8 | 0.0 | 4.9 | 35.8 |
| LnGrp Delay(d),s/veh | 58.2 | 38.9 | 38.7 | 0.0 | 17.6 | 35.4 |
| LnGrp LOS | E | D | D | | B | D |
| Approach Vol, veh/h | | 1705 | 905 | | 1184 | |
| Approach Delay, s/veh | | 42.4 | 38.7 | | 27.8 | |
| Approach LOS | | D | D | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | | | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | | | 55.4 | | 64.6 | 17.3 | 38.1 |
| Change Period (Y+Rc), s | | | | 4.5 | | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | | | | 52.5 | | 58.5 | 15.9 | 32.1 |
| Max Q Clear Time (g_c+I1), s | | | | 47.2 | | 47.0 | 12.4 | 20.7 |
| Green Ext Time (p_c), s | | | | 3.7 | | 3.6 | 0.3 | 4.4 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 37.0 |
| HCM 2010 LOS | D |



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 1090 | 720 | 0 | 1610 | 120 | 30 |
| Future Volume (veh/h) | 1090 | 720 | 0 | 1610 | 120 | 30 |
| Number | 4 | 14 | 3 | 8 | 5 | 12 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 0 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 1147 | 758 | 0 | 1695 | 126 | 32 |
| Adj No. of Lanes | 2 | 1 | 0 | 2 | 2 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 0 | 2 | 2 | 2 |
| Cap, veh/h | 1998 | 894 | 0 | 1998 | 1240 | 571 |
| Arrive On Green | 0.56 | 0.56 | 0.00 | 0.56 | 0.36 | 0.36 |
| Sat Flow, veh/h | 3632 | 1583 | 0 | 3725 | 3442 | 1583 |
| Grp Volume(v), veh/h | 1147 | 758 | 0 | 1695 | 126 | 32 |
| Grp Sat Flow(s),veh/h/ln | 1770 | 1583 | 0 | 1770 | 1721 | 1583 |
| Q Serve(g_s), s | 25.1 | 48.0 | 0.0 | 48.0 | 2.9 | 1.6 |
| Cycle Q Clear(g_c), s | 25.1 | 48.0 | 0.0 | 48.0 | 2.9 | 1.6 |
| Prop In Lane | | 1.00 | 0.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 1998 | 894 | 0 | 1998 | 1240 | 571 |
| V/C Ratio(X) | 0.57 | 0.85 | 0.00 | 0.85 | 0.10 | 0.06 |
| Avail Cap(c_a), veh/h | 2640 | 1181 | 0 | 2640 | 1240 | 571 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.85 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 16.8 | 21.8 | 0.0 | 21.8 | 25.5 | 25.0 |
| Incr Delay (d2), s/veh | 0.3 | 4.6 | 0.0 | 1.8 | 0.2 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 12.2 | 22.0 | 0.0 | 23.8 | 1.4 | 0.7 |
| LnGrp Delay(d),s/veh | 17.1 | 26.4 | 0.0 | 23.7 | 25.6 | 25.2 |
| LnGrp LOS | B | C | | C | C | C |
| Approach Vol, veh/h | 1905 | | | 1695 | 158 | |
| Approach Delay, s/veh | 20.8 | | | 23.7 | 25.6 | |
| Approach LOS | C | | | C | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | | | 8 |
| Phs Duration (G+Y+Rc), s | | 47.8 | | 72.2 | | | | 72.2 |
| Change Period (Y+Rc), s | | 4.5 | | 4.5 | | | | 4.5 |
| Max Green Setting (Gmax), s | | 21.5 | | 89.5 | | | | 89.5 |
| Max Q Clear Time (g_c+I1), s | | 4.9 | | 50.0 | | | | 50.0 |
| Green Ext Time (p_c), s | | 0.4 | | 15.3 | | | | 17.7 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 22.3 |
| HCM 2010 LOS | C |



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 1080 | 40 | 20 | 1590 | 20 | 10 |
| Future Volume (veh/h) | 1080 | 40 | 20 | 1590 | 20 | 10 |
| Number | 2 | 12 | 1 | 6 | 7 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 1137 | 36 | 21 | 1674 | 21 | 2 |
| Adj No. of Lanes | 2 | 1 | 1 | 2 | 1 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 2951 | 1319 | 36 | 3132 | 77 | 69 |
| Arrive On Green | 0.83 | 0.83 | 0.02 | 0.89 | 0.04 | 0.04 |
| Sat Flow, veh/h | 3632 | 1582 | 1774 | 3632 | 1774 | 1583 |
| Grp Volume(v), veh/h | 1137 | 36 | 21 | 1674 | 21 | 2 |
| Grp Sat Flow(s),veh/h/ln | 1770 | 1582 | 1774 | 1770 | 1774 | 1583 |
| Q Serve(g_s), s | 10.2 | 0.5 | 1.5 | 13.4 | 1.5 | 0.2 |
| Cycle Q Clear(g_c), s | 10.2 | 0.5 | 1.5 | 13.4 | 1.5 | 0.2 |
| Prop In Lane | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 2951 | 1319 | 36 | 3132 | 77 | 69 |
| V/C Ratio(X) | 0.39 | 0.03 | 0.58 | 0.53 | 0.27 | 0.03 |
| Avail Cap(c_a), veh/h | 2951 | 1319 | 96 | 3132 | 177 | 158 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.89 | 0.89 | 0.46 | 0.46 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 2.6 | 1.8 | 63.1 | 1.6 | 60.2 | 59.6 |
| Incr Delay (d2), s/veh | 0.3 | 0.0 | 2.5 | 0.3 | 0.7 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 5.0 | 0.2 | 0.8 | 6.4 | 0.7 | 0.1 |
| LnGrp Delay(d),s/veh | 3.0 | 1.9 | 65.6 | 1.9 | 60.9 | 59.6 |
| LnGrp LOS | A | A | E | A | E | E |
| Approach Vol, veh/h | 1173 | | | 1695 | 23 | |
| Approach Delay, s/veh | 2.9 | | | 2.7 | 60.8 | |
| Approach LOS | A | | | A | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | | 6 | | |
| Phs Duration (G+Y+Rc), s | 6.7 | 113.7 | | 9.6 | | 120.4 | | |
| Change Period (Y+Rc), s | 4.0 | 5.3 | | 4.0 | | 5.3 | | |
| Max Green Setting (Gmax), s | 7.0 | 96.7 | | 13.0 | | 107.7 | | |
| Max Q Clear Time (g_c+I1), s | 3.5 | 12.2 | | 3.5 | | 15.4 | | |
| Green Ext Time (p_c), s | 0.0 | 5.8 | | 0.0 | | 11.1 | | |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 3.3 |
| HCM 2010 LOS | A |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 240 | 700 | 150 | 80 | 850 | 220 | 170 | 130 | 60 | 270 | 260 | 590 |
| Future Volume (veh/h) | 240 | 700 | 150 | 80 | 850 | 220 | 170 | 130 | 60 | 270 | 260 | 590 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 7 | 4 | 14 | 3 | 8 | 18 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 0.99 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 253 | 737 | 150 | 84 | 895 | 143 | 179 | 137 | 27 | 284 | 274 | 0 |
| Adj No. of Lanes | 2 | 2 | 0 | 1 | 2 | 1 | 1 | 2 | 1 | 2 | 2 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 300 | 1030 | 210 | 490 | 1950 | 861 | 204 | 295 | 131 | 469 | 387 | 173 |
| Arrive On Green | 0.17 | 0.70 | 0.70 | 0.28 | 0.55 | 0.55 | 0.11 | 0.08 | 0.08 | 0.14 | 0.11 | 0.00 |
| Sat Flow, veh/h | 3442 | 2930 | 596 | 1774 | 3539 | 1562 | 1774 | 3539 | 1572 | 3442 | 3539 | 1583 |
| Grp Volume(v), veh/h | 253 | 445 | 442 | 84 | 895 | 143 | 179 | 137 | 27 | 284 | 274 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1770 | 1757 | 1774 | 1770 | 1562 | 1774 | 1770 | 1572 | 1721 | 1770 | 1583 |
| Q Serve(g_s), s | 9.3 | 19.5 | 19.5 | 4.7 | 19.8 | 5.9 | 12.9 | 4.8 | 1.7 | 10.1 | 9.7 | 0.0 |
| Cycle Q Clear(g_c), s | 9.3 | 19.5 | 19.5 | 4.7 | 19.8 | 5.9 | 12.9 | 4.8 | 1.7 | 10.1 | 9.7 | 0.0 |
| Prop In Lane | 1.00 | | 0.34 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 300 | 622 | 618 | 490 | 1950 | 861 | 204 | 295 | 131 | 469 | 387 | 173 |
| V/C Ratio(X) | 0.84 | 0.72 | 0.72 | 0.17 | 0.46 | 0.17 | 0.88 | 0.46 | 0.21 | 0.61 | 0.71 | 0.00 |
| Avail Cap(c_a), veh/h | 318 | 622 | 618 | 490 | 1950 | 861 | 218 | 1154 | 513 | 469 | 1182 | 529 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.94 | 0.94 | 0.94 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 52.8 | 15.4 | 15.4 | 35.7 | 17.6 | 14.4 | 56.6 | 56.8 | 38.5 | 52.8 | 55.9 | 0.0 |
| Incr Delay (d2), s/veh | 16.8 | 6.5 | 6.5 | 0.2 | 0.8 | 0.4 | 29.6 | 1.1 | 0.8 | 2.2 | 2.4 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 5.1 | 10.3 | 10.2 | 2.3 | 9.8 | 2.6 | 8.0 | 2.4 | 0.8 | 5.0 | 4.9 | 0.0 |
| LnGrp Delay(d),s/veh | 69.6 | 21.9 | 22.0 | 35.9 | 18.3 | 14.9 | 86.2 | 57.9 | 39.3 | 55.0 | 58.3 | 0.0 |
| LnGrp LOS | E | C | C | D | B | B | F | E | D | E | E | |
| Approach Vol, veh/h | | 1140 | | | 1122 | | | 343 | | | 558 | |
| Approach Delay, s/veh | | 32.5 | | | 19.2 | | | 71.2 | | | 56.6 | |
| Approach LOS | | C | | | B | | | E | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 11.2 | 51.0 | 22.3 | 15.4 | 15.3 | 76.9 | 18.9 | 18.8 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 4.6 | * 4.6 | 4.0 | 5.3 | 4.0 | 4.6 |
| Max Green Setting (Gmax), s | 7.0 | * 46 | 17.0 | * 42 | 12.0 | 40.7 | 16.0 | 43.4 |
| Max Q Clear Time (g_c+I1), s | 6.7 | 21.5 | 12.1 | 6.8 | 11.3 | 21.8 | 14.9 | 11.7 |
| Green Ext Time (p_c), s | 0.0 | 6.6 | 0.4 | 0.9 | 0.1 | 7.2 | 0.1 | 1.8 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 36.2 |
| HCM 2010 LOS | D |

Notes



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 40 | 60 | 50 | 0 | 180 | 610 | 50 | 570 | 0 | 320 | 1000 | 60 |
| Future Volume (veh/h) | 40 | 60 | 50 | 0 | 180 | 610 | 50 | 570 | 0 | 320 | 1000 | 60 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1759 | 1759 | 1900 | 1759 | 1759 | 1759 | 1759 | 1759 | 1900 | 1759 | 1759 | 1900 |
| Adj Flow Rate, veh/h | 41 | 62 | 36 | 0 | 186 | 0 | 52 | 588 | 0 | 330 | 1031 | 0 |
| Adj No. of Lanes | 1 | 2 | 0 | 1 | 1 | 1 | 1 | 2 | 0 | 2 | 2 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Cap, veh/h | 66 | 584 | 314 | 2 | 245 | 208 | 76 | 944 | 0 | 457 | 1358 | 0 |
| Arrive On Green | 0.04 | 0.28 | 0.28 | 0.00 | 0.14 | 0.00 | 0.05 | 0.28 | 0.00 | 0.14 | 0.41 | 0.00 |
| Sat Flow, veh/h | 1675 | 2100 | 1131 | 1675 | 1759 | 1495 | 1675 | 3431 | 0 | 3250 | 3431 | 0 |
| Grp Volume(v), veh/h | 41 | 48 | 50 | 0 | 186 | 0 | 52 | 588 | 0 | 330 | 1031 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1675 | 1671 | 1560 | 1675 | 1759 | 1495 | 1675 | 1671 | 0 | 1625 | 1671 | 0 |
| Q Serve(g_s), s | 1.7 | 1.5 | 1.7 | 0.0 | 7.2 | 0.0 | 2.1 | 10.8 | 0.0 | 6.8 | 18.6 | 0.0 |
| Cycle Q Clear(g_c), s | 1.7 | 1.5 | 1.7 | 0.0 | 7.2 | 0.0 | 2.1 | 10.8 | 0.0 | 6.8 | 18.6 | 0.0 |
| Prop In Lane | 1.00 | | 0.72 | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 66 | 465 | 434 | 2 | 245 | 208 | 76 | 944 | 0 | 457 | 1358 | 0 |
| V/C Ratio(X) | 0.62 | 0.10 | 0.11 | 0.00 | 0.76 | 0.00 | 0.68 | 0.62 | 0.00 | 0.72 | 0.76 | 0.00 |
| Avail Cap(c_a), veh/h | 286 | 1094 | 1021 | 119 | 977 | 830 | 334 | 3616 | 0 | 1619 | 4710 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 33.2 | 18.9 | 18.9 | 0.0 | 29.1 | 0.0 | 33.0 | 22.0 | 0.0 | 28.9 | 17.9 | 0.0 |
| Incr Delay (d2), s/veh | 9.3 | 0.1 | 0.1 | 0.0 | 4.8 | 0.0 | 10.3 | 0.7 | 0.0 | 2.2 | 0.9 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.0 | 0.7 | 0.7 | 0.0 | 3.8 | 0.0 | 1.2 | 5.1 | 0.0 | 3.2 | 8.6 | 0.0 |
| LnGrp Delay(d),s/veh | 42.6 | 19.0 | 19.0 | 0.0 | 33.9 | 0.0 | 43.4 | 22.6 | 0.0 | 31.0 | 18.8 | 0.0 |
| LnGrp LOS | D | B | B | | C | | D | C | | C | B | |
| Approach Vol, veh/h | | 139 | | | 186 | | | 640 | | | 1361 | |
| Approach Delay, s/veh | | 25.9 | | | 33.9 | | | 24.3 | | | 21.8 | |
| Approach LOS | | C | | | C | | | C | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 16.9 | 26.8 | 0.0 | 26.5 | 8.2 | 35.5 | 9.8 | 16.8 |
| Change Period (Y+Rc), s | 7.0 | 7.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 | 7.0 |
| Max Green Setting (Gmax), s | 35.0 | 76.0 | 5.0 | 46.0 | 14.0 | 99.0 | 12.0 | 39.0 |
| Max Q Clear Time (g_c+I1), s | 9.8 | 12.8 | 0.0 | 3.7 | 4.1 | 20.6 | 3.7 | 9.2 |
| Green Ext Time (p_c), s | 1.1 | 3.8 | 0.0 | 0.5 | 0.0 | 7.9 | 0.0 | 0.9 |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2010 Ctrl Delay | | 23.7 | |
| HCM 2010 LOS | | C | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 10 | 10 | 0 | 550 | 10 | 10 | 10 | 600 | 180 | 10 | 1030 | 10 |
| Future Volume (veh/h) | 10 | 10 | 0 | 550 | 10 | 10 | 10 | 600 | 180 | 10 | 1030 | 10 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 1 | 6 | 16 | 5 | 2 | 12 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1845 | 1845 | 1900 | 1845 | 1845 | 1900 | 1845 | 1845 | 1845 | 1845 | 1845 | 1900 |
| Adj Flow Rate, veh/h | 10 | 10 | 0 | 561 | 10 | 9 | 10 | 612 | 151 | 10 | 1051 | 9 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Cap, veh/h | 26 | 36 | 0 | 615 | 318 | 286 | 26 | 704 | 1147 | 26 | 1358 | 12 |
| Arrive On Green | 0.01 | 0.02 | 0.00 | 0.35 | 0.35 | 0.35 | 0.01 | 0.38 | 0.38 | 0.01 | 0.38 | 0.38 |
| Sat Flow, veh/h | 1757 | 1845 | 0 | 1757 | 896 | 806 | 1757 | 1845 | 1568 | 1757 | 3561 | 30 |
| Grp Volume(v), veh/h | 10 | 10 | 0 | 561 | 0 | 19 | 10 | 612 | 151 | 10 | 517 | 543 |
| Grp Sat Flow(s),veh/h/ln | 1757 | 1845 | 0 | 1757 | 0 | 1702 | 1757 | 1845 | 1568 | 1757 | 1752 | 1839 |
| Q Serve(g_s), s | 0.5 | 0.5 | 0.0 | 26.1 | 0.0 | 0.6 | 0.5 | 26.3 | 2.4 | 0.5 | 22.1 | 22.1 |
| Cycle Q Clear(g_c), s | 0.5 | 0.5 | 0.0 | 26.1 | 0.0 | 0.6 | 0.5 | 26.3 | 2.4 | 0.5 | 22.1 | 22.1 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 0.47 | 1.00 | | 1.00 | 1.00 | | 0.02 |
| Lane Grp Cap(c), veh/h | 26 | 36 | 0 | 615 | 0 | 604 | 26 | 704 | 1147 | 26 | 668 | 702 |
| V/C Ratio(X) | 0.38 | 0.27 | 0.00 | 0.91 | 0.00 | 0.03 | 0.38 | 0.87 | 0.13 | 0.38 | 0.77 | 0.77 |
| Avail Cap(c_a), veh/h | 123 | 194 | 0 | 1891 | 0 | 1892 | 123 | 2115 | 2347 | 123 | 2009 | 2109 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 41.7 | 41.3 | 0.0 | 26.5 | 0.0 | 18.0 | 41.7 | 24.5 | 3.4 | 41.7 | 23.2 | 23.2 |
| Incr Delay (d2), s/veh | 9.0 | 4.0 | 0.0 | 5.8 | 0.0 | 0.0 | 9.0 | 3.5 | 0.1 | 9.0 | 2.0 | 1.9 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.3 | 0.3 | 0.0 | 13.6 | 0.0 | 0.3 | 0.3 | 13.9 | 1.1 | 0.3 | 11.0 | 11.5 |
| LnGrp Delay(d),s/veh | 50.7 | 45.3 | 0.0 | 32.3 | 0.0 | 18.0 | 50.7 | 28.0 | 3.5 | 50.7 | 25.2 | 25.1 |
| LnGrp LOS | D | D | | C | | B | D | C | A | D | C | C |
| Approach Vol, veh/h | | 20 | | | 580 | | | 773 | | | 1070 | |
| Approach Delay, s/veh | | 48.0 | | | 31.8 | | | 23.5 | | | 25.3 | |
| Approach LOS | | D | | | C | | | C | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 6.3 | 37.6 | 34.9 | 6.7 | 6.3 | 37.6 | 6.3 | 35.3 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 6.0 | 98.0 | 92.0 | 9.0 | 6.0 | 98.0 | 6.0 | 95.0 |
| Max Q Clear Time (g_c+I1), s | 2.5 | 24.1 | 28.1 | 2.5 | 2.5 | 28.3 | 2.5 | 2.6 |
| Green Ext Time (p_c), s | 0.0 | 7.0 | 1.8 | 0.0 | 0.0 | 4.3 | 0.0 | 0.1 |

| Intersection Summary | | |
|---|---|---|
| HCM 2010 Ctrl Delay | | 26.5 |
| HCM 2010 LOS | | C |

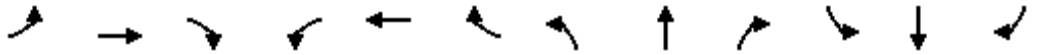


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 10 | 30 | 30 | 280 | 120 | 380 | 30 | 400 | 260 | 270 | 1300 | 10 |
| Future Volume (veh/h) | 10 | 30 | 30 | 280 | 120 | 380 | 30 | 400 | 260 | 270 | 1300 | 10 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1827 | 1827 | 1900 | 1827 | 1827 | 1827 | 1827 | 1827 | 1827 | 1827 | 1827 | 1900 |
| Adj Flow Rate, veh/h | 10 | 31 | 31 | 206 | 239 | 392 | 31 | 412 | 0 | 278 | 1340 | 0 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Cap, veh/h | 17 | 130 | 130 | 240 | 518 | 440 | 38 | 1058 | 687 | 314 | 1607 | 0 |
| Arrive On Green | 0.01 | 0.16 | 0.16 | 0.14 | 0.28 | 0.28 | 0.02 | 0.30 | 0.00 | 0.18 | 0.46 | 0.00 |
| Sat Flow, veh/h | 1740 | 839 | 839 | 1740 | 1827 | 1553 | 1740 | 3471 | 1553 | 1740 | 3563 | 0 |
| Grp Volume(v), veh/h | 10 | 0 | 62 | 206 | 239 | 392 | 31 | 412 | 0 | 278 | 1340 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1740 | 0 | 1679 | 1740 | 1827 | 1553 | 1740 | 1736 | 1553 | 1740 | 1736 | 0 |
| Q Serve(g_s), s | 0.6 | 0.0 | 3.7 | 13.0 | 12.1 | 27.3 | 2.0 | 10.5 | 0.0 | 17.6 | 38.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.6 | 0.0 | 3.7 | 13.0 | 12.1 | 27.3 | 2.0 | 10.5 | 0.0 | 17.6 | 38.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.50 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 17 | 0 | 260 | 240 | 518 | 440 | 38 | 1058 | 687 | 314 | 1607 | 0 |
| V/C Ratio(X) | 0.60 | 0.00 | 0.24 | 0.86 | 0.46 | 0.89 | 0.81 | 0.39 | 0.00 | 0.89 | 0.83 | 0.00 |
| Avail Cap(c_a), veh/h | 77 | 0 | 626 | 618 | 1249 | 1061 | 139 | 2064 | 1138 | 788 | 3359 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 55.6 | 0.0 | 41.8 | 47.5 | 33.3 | 38.7 | 54.8 | 30.9 | 0.0 | 45.0 | 26.5 | 0.0 |
| Incr Delay (d2), s/veh | 30.3 | 0.0 | 0.5 | 8.6 | 0.6 | 6.4 | 31.0 | 0.2 | 0.0 | 8.3 | 1.2 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.4 | 0.0 | 1.7 | 6.9 | 6.2 | 12.4 | 1.3 | 5.1 | 0.0 | 9.1 | 18.5 | 0.0 |
| LnGrp Delay(d),s/veh | 85.9 | 0.0 | 42.2 | 56.1 | 33.9 | 45.0 | 85.8 | 31.1 | 0.0 | 53.3 | 27.7 | 0.0 |
| LnGrp LOS | F | | D | E | C | D | F | C | | D | C | |
| Approach Vol, veh/h | | 72 | | | 837 | | | 443 | | | 1618 | |
| Approach Delay, s/veh | | 48.3 | | | 44.6 | | | 35.0 | | | 32.1 | |
| Approach LOS | | D | | | D | | | C | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 16.3 | 41.3 | 21.5 | 23.5 | 8.5 | 59.1 | 7.1 | 37.9 |
| Change Period (Y+Rc), s | 6.0 | 7.0 | 6.0 | 6.0 | 6.0 | 7.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 10.0 | 67.0 | 40.0 | 42.0 | 9.0 | 109.0 | 5.0 | 77.0 |
| Max Q Clear Time (g_c+I1), s | 9.6 | 12.5 | 15.0 | 5.7 | 4.0 | 40.0 | 2.6 | 29.3 |
| Green Ext Time (p_c), s | 0.8 | 2.5 | 0.5 | 0.3 | 0.0 | 12.1 | 0.0 | 2.7 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 36.4 |
| HCM 2010 LOS | D |

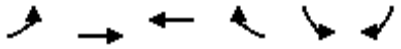
Notes



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 170 | 310 | 60 | 70 | 730 | 190 | 80 | 90 | 180 | 120 | 30 | 140 |
| Future Volume (veh/h) | 170 | 310 | 60 | 70 | 730 | 190 | 80 | 90 | 180 | 120 | 30 | 140 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 179 | 326 | 63 | 74 | 768 | 200 | 84 | 95 | 189 | 126 | 32 | 147 |
| Adj No. of Lanes | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 216 | 1114 | 213 | 103 | 867 | 226 | 114 | 587 | 525 | 161 | 634 | 567 |
| Arrive On Green | 0.12 | 0.38 | 0.37 | 0.06 | 0.31 | 0.31 | 0.06 | 0.33 | 0.33 | 0.09 | 0.36 | 0.35 |
| Sat Flow, veh/h | 1774 | 2966 | 567 | 1774 | 2780 | 724 | 1774 | 1770 | 1583 | 1774 | 1770 | 1583 |
| Grp Volume(v), veh/h | 179 | 193 | 196 | 74 | 489 | 479 | 84 | 95 | 189 | 126 | 32 | 147 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1763 | 1774 | 1770 | 1735 | 1774 | 1770 | 1583 | 1774 | 1770 | 1583 |
| Q Serve(g_s), s | 11.0 | 8.5 | 8.7 | 4.6 | 29.2 | 29.2 | 5.2 | 4.2 | 10.1 | 7.7 | 1.3 | 7.3 |
| Cycle Q Clear(g_c), s | 11.0 | 8.5 | 8.7 | 4.6 | 29.2 | 29.2 | 5.2 | 4.2 | 10.1 | 7.7 | 1.3 | 7.3 |
| Prop In Lane | 1.00 | | 0.32 | 1.00 | | 0.42 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 216 | 665 | 662 | 103 | 552 | 541 | 114 | 587 | 525 | 161 | 634 | 567 |
| V/C Ratio(X) | 0.83 | 0.29 | 0.30 | 0.72 | 0.89 | 0.89 | 0.74 | 0.16 | 0.36 | 0.78 | 0.05 | 0.26 |
| Avail Cap(c_a), veh/h | 271 | 665 | 662 | 212 | 605 | 593 | 147 | 587 | 525 | 193 | 634 | 567 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 47.7 | 24.3 | 24.4 | 51.5 | 36.4 | 36.5 | 51.1 | 26.2 | 28.4 | 49.5 | 23.3 | 25.4 |
| Incr Delay (d2), s/veh | 15.6 | 0.2 | 0.2 | 9.0 | 13.9 | 14.2 | 13.0 | 0.6 | 1.9 | 15.9 | 0.2 | 1.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 6.3 | 4.2 | 4.3 | 2.5 | 16.4 | 16.1 | 3.0 | 2.2 | 4.7 | 4.5 | 0.7 | 3.4 |
| LnGrp Delay(d),s/veh | 63.3 | 24.6 | 24.7 | 60.5 | 50.3 | 50.7 | 64.1 | 26.8 | 30.3 | 65.4 | 23.5 | 26.5 |
| LnGrp LOS | E | C | C | E | D | D | E | C | C | E | C | C |
| Approach Vol, veh/h | | 568 | | | 1042 | | | 368 | | | 305 | |
| Approach Delay, s/veh | | 36.8 | | | 51.2 | | | 37.1 | | | 42.3 | |
| Approach LOS | | D | | | D | | | D | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 14.1 | 40.9 | 10.4 | 45.8 | 11.2 | 43.8 | 17.5 | 38.7 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 11.6 | 36.4 | 12.8 | 41.2 | 8.7 | 39.3 | 16.5 | 37.5 |
| Max Q Clear Time (g_c+I1), s | 9.7 | 12.1 | 6.6 | 10.7 | 7.2 | 9.3 | 13.0 | 31.2 |
| Green Ext Time (p_c), s | 0.0 | 1.5 | 0.1 | 2.1 | 0.0 | 1.0 | 0.1 | 2.9 |

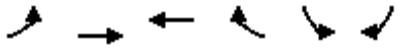
| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 44.2 |
| HCM 2010 LOS | D |



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 130 | 480 | 830 | 660 | 1000 | 160 |
| Future Volume (veh/h) | 130 | 480 | 830 | 660 | 1000 | 160 |
| Number | 7 | 4 | 8 | 18 | 1 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 137 | 505 | 874 | 695 | 1053 | 168 |
| Adj No. of Lanes | 1 | 2 | 2 | 1 | 2 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 177 | 1617 | 1127 | 1226 | 1602 | 737 |
| Arrive On Green | 0.10 | 0.46 | 0.32 | 0.31 | 0.47 | 0.47 |
| Sat Flow, veh/h | 1774 | 3632 | 3632 | 1583 | 3442 | 1583 |
| Grp Volume(v), veh/h | 137 | 505 | 874 | 695 | 1053 | 168 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1770 | 1583 | 1721 | 1583 |
| Q Serve(g_s), s | 7.8 | 9.3 | 23.0 | 18.2 | 24.3 | 6.5 |
| Cycle Q Clear(g_c), s | 7.8 | 9.3 | 23.0 | 18.2 | 24.3 | 6.5 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 177 | 1617 | 1127 | 1226 | 1602 | 737 |
| V/C Ratio(X) | 0.77 | 0.31 | 0.78 | 0.57 | 0.66 | 0.23 |
| Avail Cap(c_a), veh/h | 344 | 2197 | 1373 | 1336 | 1602 | 737 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 45.3 | 17.7 | 31.8 | 4.7 | 21.2 | 16.5 |
| Incr Delay (d2), s/veh | 7.1 | 0.1 | 2.3 | 0.5 | 2.1 | 0.7 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 4.2 | 4.6 | 11.7 | 19.9 | 12.0 | 7.5 |
| LnGrp Delay(d),s/veh | 52.3 | 17.8 | 34.1 | 5.2 | 23.3 | 17.2 |
| LnGrp LOS | D | B | C | A | C | B |
| Approach Vol, veh/h | | 642 | 1569 | | 1221 | |
| Approach Delay, s/veh | | 25.2 | 21.3 | | 22.5 | |
| Approach LOS | | C | C | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | | | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | | | 51.1 | | 52.0 | 14.3 | 36.8 |
| Change Period (Y+Rc), s | | | | 4.5 | | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | | | | 63.5 | | 47.5 | 19.5 | 39.5 |
| Max Q Clear Time (g_c+I1), s | | | | 11.3 | | 26.3 | 9.8 | 25.0 |
| Green Ext Time (p_c), s | | | | 3.4 | | 4.8 | 0.2 | 7.3 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 22.5 |
| HCM 2010 LOS | C |



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 550 | 910 | 910 | 280 | 1560 | 560 |
| Future Volume (veh/h) | 550 | 910 | 910 | 280 | 1560 | 560 |
| Number | 5 | 2 | 6 | 16 | 3 | 18 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 561 | 929 | 929 | 286 | 1592 | 571 |
| Adj No. of Lanes | 1 | 3 | 2 | 1 | 2 | 1 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 426 | 2908 | 1063 | 475 | 1258 | 579 |
| Arrive On Green | 0.24 | 0.57 | 0.30 | 0.30 | 0.37 | 0.37 |
| Sat Flow, veh/h | 1774 | 5253 | 3632 | 1583 | 3442 | 1583 |
| Grp Volume(v), veh/h | 561 | 929 | 929 | 286 | 1592 | 571 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1695 | 1770 | 1583 | 1721 | 1583 |
| Q Serve(g_s), s | 34.5 | 13.7 | 35.8 | 22.2 | 52.5 | 51.4 |
| Cycle Q Clear(g_c), s | 34.5 | 13.7 | 35.8 | 22.2 | 52.5 | 51.4 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 426 | 2908 | 1063 | 475 | 1258 | 579 |
| V/C Ratio(X) | 1.32 | 0.32 | 0.87 | 0.60 | 1.27 | 0.99 |
| Avail Cap(c_a), veh/h | 426 | 3133 | 1220 | 546 | 1258 | 579 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 54.6 | 16.1 | 47.7 | 42.9 | 45.6 | 45.2 |
| Incr Delay (d2), s/veh | 158.2 | 0.1 | 6.6 | 1.4 | 125.9 | 33.9 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 35.5 | 6.5 | 18.4 | 9.9 | 46.8 | 28.0 |
| LnGrp Delay(d),s/veh | 212.8 | 16.2 | 54.3 | 44.4 | 171.5 | 79.1 |
| LnGrp LOS | F | B | D | D | F | E |
| Approach Vol, veh/h | | 1490 | 1215 | | 2163 | |
| Approach Delay, s/veh | | 90.2 | 51.9 | | 147.1 | |
| Approach LOS | | F | D | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 86.6 | | | 39.0 | 47.6 | | 57.0 |
| Change Period (Y+Rc), s | | 4.5 | | | 4.5 | 4.5 | | 4.5 |
| Max Green Setting (Gmax), s | | 88.5 | | | 34.5 | 49.5 | | 52.5 |
| Max Q Clear Time (g_c+I1), s | | 15.7 | | | 36.5 | 37.8 | | 54.5 |
| Green Ext Time (p_c), s | | 7.2 | | | 0.0 | 5.4 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 105.9 |
| HCM 2010 LOS | F |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 670 | 1820 | 0 | 0 | 510 | 1120 | 700 | 0 | 410 | 0 | 0 | 0 |
| Future Volume (veh/h) | 670 | 1820 | 0 | 0 | 510 | 1120 | 700 | 0 | 410 | 0 | 0 | 0 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 7 | 4 | 14 | | | |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | | | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 0 | 0 | 1863 | 1863 | 1863 | 1863 | 1863 | | | |
| Adj Flow Rate, veh/h | 705 | 1916 | 0 | 0 | 537 | 1179 | 737 | 0 | 432 | | | |
| Adj No. of Lanes | 2 | 3 | 0 | 0 | 1 | 2 | 2 | 0 | 1 | | | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | | | |
| Percent Heavy Veh, % | 2 | 2 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | | | |
| Cap, veh/h | 774 | 3201 | 0 | 0 | 701 | 1192 | 1049 | 0 | 468 | | | |
| Arrive On Green | 0.22 | 0.63 | 0.00 | 0.00 | 0.38 | 0.38 | 0.30 | 0.00 | 0.30 | | | |
| Sat Flow, veh/h | 3442 | 5253 | 0 | 0 | 1863 | 3167 | 3548 | 0 | 1583 | | | |
| Grp Volume(v), veh/h | 705 | 1916 | 0 | 0 | 537 | 1179 | 737 | 0 | 432 | | | |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1695 | 0 | 0 | 1863 | 1583 | 1774 | 0 | 1583 | | | |
| Q Serve(g_s), s | 28.3 | 31.7 | 0.0 | 0.0 | 35.8 | 52.4 | 26.2 | 0.0 | 37.4 | | | |
| Cycle Q Clear(g_c), s | 28.3 | 31.7 | 0.0 | 0.0 | 35.8 | 52.4 | 26.2 | 0.0 | 37.4 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 1.00 | 1.00 | | 1.00 | | | |
| Lane Grp Cap(c), veh/h | 774 | 3201 | 0 | 0 | 701 | 1192 | 1049 | 0 | 468 | | | |
| V/C Ratio(X) | 0.91 | 0.60 | 0.00 | 0.00 | 0.77 | 0.99 | 0.70 | 0.00 | 0.92 | | | |
| Avail Cap(c_a), veh/h | 899 | 3386 | 0 | 0 | 701 | 1192 | 1130 | 0 | 504 | | | |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | | | |
| Uniform Delay (d), s/veh | 53.5 | 15.6 | 0.0 | 0.0 | 38.7 | 43.9 | 44.3 | 0.0 | 48.3 | | | |
| Incr Delay (d2), s/veh | 12.0 | 0.3 | 0.0 | 0.0 | 5.1 | 23.4 | 1.8 | 0.0 | 21.9 | | | |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| %ile BackOfQ(50%),veh/ln | 14.7 | 14.8 | 0.0 | 0.0 | 19.3 | 26.8 | 13.1 | 0.0 | 31.7 | | | |
| LnGrp Delay(d),s/veh | 65.5 | 15.9 | 0.0 | 0.0 | 43.8 | 67.3 | 46.2 | 0.0 | 70.2 | | | |
| LnGrp LOS | E | B | | | D | E | D | | E | | | |
| Approach Vol, veh/h | | 2621 | | | 1716 | | | 1169 | | | | |
| Approach Delay, s/veh | | 29.2 | | | 59.9 | | | 55.1 | | | | |
| Approach LOS | | C | | | E | | | E | | | | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | |
| Phs Duration (G+Y+Rc), s | | 94.5 | | 47.2 | 35.9 | 58.6 | | |
| Change Period (Y+Rc), s | | 5.3 | | 5.3 | 4.0 | 5.3 | | |
| Max Green Setting (Gmax), s | | 94.3 | | 45.1 | 37.0 | 53.3 | | |
| Max Q Clear Time (g_c+I1), s | | 33.7 | | 39.4 | 30.3 | 54.4 | | |
| Green Ext Time (p_c), s | | 23.5 | | 2.4 | 1.6 | 0.0 | | |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 44.3 |
| HCM 2010 LOS | D |

Notes

| Intersection | |
|---|---|
| Int Delay, s/veh | 36.8 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 60 | 540 | 110 | 100 | 400 | 60 |
| Future Vol, veh/h | 60 | 540 | 110 | 100 | 400 | 60 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 63 | 568 | 116 | 105 | 421 | 63 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1074 | 169 | 0 | 0 | 221 | 0 |
| Stage 1 | 169 | - | - | - | - | - |
| Stage 2 | 905 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 243 | 875 | - | - | 1348 | - |
| Stage 1 | 861 | - | - | - | - | - |
| Stage 2 | 395 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 164 | 875 | - | - | 1348 | - |
| Mov Cap-2 Maneuver | 164 | - | - | - | - | - |
| Stage 1 | 582 | - | - | - | - | - |
| Stage 2 | 395 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 71.9 | 0 | 7.7 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 610 | 1348 | - |
| HCM Lane V/C Ratio | - | - | 1.035 | 0.312 | - |
| HCM Control Delay (s) | - | - | 71.9 | 8.9 | 0 |
| HCM Lane LOS | - | - | F | A | A |
| HCM 95th %tile Q(veh) | - | - | 16.8 | 1.3 | - |



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 380 | 120 | 100 | 400 | 100 | 200 |
| Future Volume (veh/h) | 380 | 120 | 100 | 400 | 100 | 200 |
| Number | 4 | 14 | 3 | 8 | 5 | 12 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 400 | 126 | 105 | 421 | 105 | 211 |
| Adj No. of Lanes | 2 | 0 | 1 | 2 | 1 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 750 | 234 | 168 | 1832 | 357 | 468 |
| Arrive On Green | 0.28 | 0.28 | 0.09 | 0.52 | 0.20 | 0.20 |
| Sat Flow, veh/h | 2751 | 828 | 1774 | 3632 | 1774 | 1583 |
| Grp Volume(v), veh/h | 265 | 261 | 105 | 421 | 105 | 211 |
| Grp Sat Flow(s),veh/h/ln | 1770 | 1717 | 1774 | 1770 | 1774 | 1583 |
| Q Serve(g_s), s | 4.0 | 4.1 | 1.8 | 2.1 | 1.6 | 3.5 |
| Cycle Q Clear(g_c), s | 4.0 | 4.1 | 1.8 | 2.1 | 1.6 | 3.5 |
| Prop In Lane | | 0.48 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 499 | 484 | 168 | 1832 | 357 | 468 |
| V/C Ratio(X) | 0.53 | 0.54 | 0.62 | 0.23 | 0.29 | 0.45 |
| Avail Cap(c_a), veh/h | 2019 | 1959 | 860 | 6252 | 1359 | 1363 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 9.7 | 9.7 | 13.9 | 4.2 | 10.9 | 9.1 |
| Incr Delay (d2), s/veh | 0.9 | 0.9 | 3.8 | 0.1 | 0.5 | 0.7 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.0 | 2.0 | 1.1 | 1.0 | 0.8 | 1.6 |
| LnGrp Delay(d),s/veh | 10.6 | 10.7 | 17.7 | 4.3 | 11.3 | 9.8 |
| LnGrp LOS | B | B | B | A | B | A |
| Approach Vol, veh/h | 526 | | | 526 | 316 | |
| Approach Delay, s/veh | 10.6 | | | 7.0 | 10.3 | |
| Approach LOS | B | | | A | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | 3 | 4 | | | | 8 |
| Phs Duration (G+Y+Rc), s | | 10.9 | 7.5 | 13.5 | | | | 21.1 |
| Change Period (Y+Rc), s | | 4.5 | 4.5 | 4.5 | | | | 4.5 |
| Max Green Setting (Gmax), s | | 24.5 | 15.5 | 36.5 | | | | 56.5 |
| Max Q Clear Time (g_c+I1), s | | 5.5 | 3.8 | 6.1 | | | | 4.1 |
| Green Ext Time (p_c), s | | 1.0 | 0.2 | 2.9 | | | | 2.6 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 9.1 |
| HCM 2010 LOS | A |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 60 | 490 | 30 | 300 | 410 | 250 | 50 | 310 | 520 | 190 | 120 | 40 |
| Future Volume (veh/h) | 60 | 490 | 30 | 300 | 410 | 250 | 50 | 310 | 520 | 190 | 120 | 40 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.94 | 1.00 | | 0.40 | 1.00 | | 0.50 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 63 | 516 | -17 | 316 | 432 | 256 | 53 | 326 | 296 | 200 | 126 | 41 |
| Adj No. of Lanes | 1 | 2 | 0 | 2 | 2 | 0 | 1 | 1 | 2 | 1 | 1 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 81 | 969 | 0 | 407 | 725 | 424 | 71 | 523 | 644 | 240 | 404 | 131 |
| Arrive On Green | 0.05 | 0.27 | 0.00 | 0.12 | 0.35 | 0.35 | 0.04 | 0.28 | 0.28 | 0.14 | 0.38 | 0.38 |
| Sat Flow, veh/h | 1774 | 3632 | 0 | 3442 | 2093 | 1225 | 1774 | 1863 | 1120 | 1774 | 1058 | 344 |
| Grp Volume(v), veh/h | 63 | 499 | 0 | 316 | 364 | 324 | 53 | 326 | 296 | 200 | 0 | 167 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 0 | 1721 | 1770 | 1549 | 1774 | 1863 | 560 | 1774 | 0 | 1402 |
| Q Serve(g_s), s | 3.3 | 11.2 | 0.0 | 8.4 | 15.9 | 16.2 | 2.8 | 14.3 | 20.3 | 10.3 | 0.0 | 7.8 |
| Cycle Q Clear(g_c), s | 3.3 | 11.2 | 0.0 | 8.4 | 15.9 | 16.2 | 2.8 | 14.3 | 20.3 | 10.3 | 0.0 | 7.8 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 0.79 | 1.00 | | 1.00 | 1.00 | | 0.25 |
| Lane Grp Cap(c), veh/h | 81 | 969 | 0 | 407 | 613 | 536 | 71 | 523 | 644 | 240 | 0 | 535 |
| V/C Ratio(X) | 0.77 | 0.52 | 0.00 | 0.78 | 0.59 | 0.60 | 0.75 | 0.62 | 0.46 | 0.83 | 0.00 | 0.31 |
| Avail Cap(c_a), veh/h | 208 | 2018 | 0 | 734 | 1179 | 1032 | 189 | 675 | 735 | 463 | 0 | 732 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 44.3 | 28.8 | 0.0 | 40.2 | 25.3 | 25.4 | 44.6 | 29.4 | 23.0 | 39.6 | 0.0 | 20.4 |
| Incr Delay (d2), s/veh | 14.3 | 0.5 | 0.0 | 3.2 | 1.1 | 1.3 | 14.5 | 1.2 | 0.5 | 7.4 | 0.0 | 0.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.9 | 5.5 | 0.0 | 4.2 | 8.0 | 7.1 | 1.6 | 7.5 | 3.1 | 5.6 | 0.0 | 3.1 |
| LnGrp Delay(d),s/veh | 58.6 | 29.3 | 0.0 | 43.4 | 26.4 | 26.7 | 59.1 | 30.6 | 23.5 | 47.0 | 0.0 | 20.7 |
| LnGrp LOS | E | C | | D | C | C | E | C | C | D | | C |
| Approach Vol, veh/h | | 562 | | | 1004 | | | 675 | | | 367 | |
| Approach Delay, s/veh | | 32.6 | | | 31.8 | | | 29.7 | | | 35.0 | |
| Approach LOS | | C | | | C | | | C | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 15.1 | 31.2 | 7.7 | 39.8 | 8.3 | 38.0 | 17.2 | 30.4 |
| Change Period (Y+Rc), s | 4.0 | 5.5 | 4.0 | 4.0 | 4.0 | 5.5 | 4.5 | 4.0 |
| Max Green Setting (Gmax), s | 20.0 | 53.5 | 10.0 | 49.0 | 11.0 | 62.5 | 24.5 | 34.0 |
| Max Q Clear Time (g_c+I1), s | 10.4 | 13.2 | 4.8 | 9.8 | 5.3 | 18.2 | 12.3 | 22.3 |
| Green Ext Time (p_c), s | 0.7 | 4.0 | 0.0 | 1.3 | 0.0 | 5.7 | 0.4 | 4.1 |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2010 Ctrl Delay | | 31.9 | |
| HCM 2010 LOS | | C | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.7 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 1110 | 90 | 70 | 930 | 30 | 60 |
| Future Vol, veh/h | 1110 | 90 | 70 | 930 | 30 | 60 |
| Conflicting Peds, #/hr | 0 | 12 | 12 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 150 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1168 | 95 | 74 | 979 | 32 | 63 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 1275 | 0 | 1866 | 644 |
| Stage 1 | - | - | - | - | 1228 | - |
| Stage 2 | - | - | - | - | 638 | - |
| Critical Hdwy | - | - | 4.14 | - | 6.84 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 | - |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 | 3.32 |
| Pot Cap-1 Maneuver | - | - | 540 | - | 64 | 416 |
| Stage 1 | - | - | - | - | 240 | - |
| Stage 2 | - | - | - | - | 488 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 534 | - | 55 | 411 |
| Mov Cap-2 Maneuver | - | - | - | - | 55 | - |
| Stage 1 | - | - | - | - | 204 | - |
| Stage 2 | - | - | - | - | 488 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.9 | 84.8 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 130 | - | - | 534 | - |
| HCM Lane V/C Ratio | 0.729 | - | - | 0.138 | - |
| HCM Control Delay (s) | 84.8 | - | - | 12.8 | - |
| HCM Lane LOS | F | - | - | B | - |
| HCM 95th %tile Q(veh) | 4.2 | - | - | 0.5 | - |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 130 | 930 | 150 | 100 | 860 | 170 | 90 | 70 | 60 | 120 | 60 | 50 |
| Future Volume (veh/h) | 130 | 930 | 150 | 100 | 860 | 170 | 90 | 70 | 60 | 120 | 60 | 50 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.97 | 1.00 | | 0.97 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 137 | 979 | 153 | 105 | 905 | 179 | 95 | 74 | -13 | 126 | 63 | -7 |
| Adj No. of Lanes | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 159 | 1581 | 247 | 360 | 1874 | 371 | 116 | 134 | 114 | 148 | 168 | 0 |
| Arrive On Green | 0.09 | 0.52 | 0.52 | 0.20 | 0.64 | 0.64 | 0.07 | 0.07 | 0.00 | 0.08 | 0.09 | 0.00 |
| Sat Flow, veh/h | 1774 | 3052 | 477 | 1774 | 2929 | 579 | 1774 | 1863 | 1583 | 1774 | 1863 | 0 |
| Grp Volume(v), veh/h | 137 | 567 | 565 | 105 | 547 | 537 | 95 | 74 | -13 | 126 | 56 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1759 | 1774 | 1770 | 1738 | 1774 | 1863 | 1583 | 1774 | 1863 | 0 |
| Q Serve(g_s), s | 11.4 | 34.1 | 34.2 | 7.5 | 24.1 | 24.2 | 7.9 | 5.8 | 0.0 | 10.5 | 4.2 | 0.0 |
| Cycle Q Clear(g_c), s | 11.4 | 34.1 | 34.2 | 7.5 | 24.1 | 24.2 | 7.9 | 5.8 | 0.0 | 10.5 | 4.2 | 0.0 |
| Prop In Lane | 1.00 | | 0.27 | 1.00 | | 0.33 | 1.00 | | 1.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 159 | 917 | 911 | 360 | 1132 | 1112 | 116 | 134 | 114 | 148 | 168 | 0 |
| V/C Ratio(X) | 0.86 | 0.62 | 0.62 | 0.29 | 0.48 | 0.48 | 0.82 | 0.55 | -0.11 | 0.85 | 0.33 | 0.00 |
| Avail Cap(c_a), veh/h | 177 | 917 | 911 | 360 | 1132 | 1112 | 166 | 360 | 306 | 166 | 360 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.88 | 0.88 | 0.88 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 67.4 | 25.6 | 25.7 | 50.7 | 14.1 | 14.1 | 69.2 | 67.2 | 0.0 | 67.9 | 64.0 | 0.0 |
| Incr Delay (d2), s/veh | 28.5 | 3.1 | 3.2 | 0.1 | 1.3 | 1.3 | 13.3 | 4.9 | 0.0 | 28.1 | 1.6 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 6.9 | 17.3 | 17.4 | 3.7 | 12.1 | 11.9 | 4.3 | 3.1 | 0.0 | 6.3 | 2.3 | 0.0 |
| LnGrp Delay(d),s/veh | 95.9 | 28.8 | 28.8 | 50.8 | 15.4 | 15.4 | 82.5 | 72.2 | 0.0 | 95.9 | 65.7 | 0.0 |
| LnGrp LOS | F | C | C | D | B | B | F | E | | F | E | |
| Approach Vol, veh/h | | 1269 | | | 1189 | | | 156 | | | 182 | |
| Approach Delay, s/veh | | 36.1 | | | 18.5 | | | 84.5 | | | 86.6 | |
| Approach LOS | | D | | | B | | | F | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 35.7 | 83.0 | 13.8 | 17.5 | 17.4 | 101.3 | 16.5 | 14.8 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 4.0 | 4.0 | 4.0 | 5.3 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 12.0 | * 78 | 14.0 | 29.0 | 15.0 | 74.7 | 14.0 | 29.0 |
| Max Q Clear Time (g_c+I1), s | 9.5 | 36.2 | 9.9 | 6.2 | 13.4 | 26.2 | 12.5 | 7.8 |
| Green Ext Time (p_c), s | 0.0 | 31.0 | 0.0 | 0.3 | 0.0 | 33.5 | 0.0 | 0.4 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 34.6 |
| HCM 2010 LOS | C |

Notes



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 90 | 960 | 70 | 120 | 1000 | 50 | 90 | 40 | 90 | 30 | 20 | 50 |
| Future Volume (veh/h) | 90 | 960 | 70 | 120 | 1000 | 50 | 90 | 40 | 90 | 30 | 20 | 50 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.98 | 1.00 | | 0.97 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 95 | 1011 | 41 | 126 | 1053 | 39 | 95 | 42 | 58 | 32 | 21 | 37 |
| Adj No. of Lanes | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 453 | 2472 | 1088 | 170 | 1715 | 744 | 115 | 187 | 159 | 61 | 43 | 75 |
| Arrive On Green | 0.51 | 1.00 | 1.00 | 0.05 | 0.48 | 0.48 | 0.07 | 0.10 | 0.10 | 0.03 | 0.07 | 0.07 |
| Sat Flow, veh/h | 1774 | 3539 | 1557 | 3442 | 3539 | 1536 | 1774 | 1863 | 1579 | 1774 | 605 | 1065 |
| Grp Volume(v), veh/h | 95 | 1011 | 41 | 126 | 1053 | 39 | 95 | 42 | 58 | 32 | 0 | 58 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1557 | 1721 | 1770 | 1536 | 1774 | 1863 | 1579 | 1774 | 0 | 1670 |
| Q Serve(g_s), s | 4.4 | 0.0 | 0.0 | 5.4 | 32.7 | 1.6 | 7.9 | 3.1 | 5.1 | 2.7 | 0.0 | 5.0 |
| Cycle Q Clear(g_c), s | 4.4 | 0.0 | 0.0 | 5.4 | 32.7 | 1.6 | 7.9 | 3.1 | 5.1 | 2.7 | 0.0 | 5.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.64 |
| Lane Grp Cap(c), veh/h | 453 | 2472 | 1088 | 170 | 1715 | 744 | 115 | 187 | 159 | 61 | 0 | 118 |
| V/C Ratio(X) | 0.21 | 0.41 | 0.04 | 0.74 | 0.61 | 0.05 | 0.82 | 0.22 | 0.37 | 0.52 | 0.00 | 0.49 |
| Avail Cap(c_a), veh/h | 453 | 2472 | 1088 | 232 | 1715 | 744 | 141 | 508 | 430 | 83 | 0 | 401 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.82 | 0.82 | 0.82 | 0.81 | 0.81 | 0.81 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 28.4 | 0.0 | 0.0 | 70.3 | 28.4 | 13.5 | 69.3 | 62.1 | 63.0 | 71.2 | 0.0 | 67.1 |
| Incr Delay (d2), s/veh | 0.1 | 0.4 | 0.1 | 3.8 | 1.3 | 0.1 | 22.7 | 0.2 | 0.5 | 2.6 | 0.0 | 1.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.2 | 0.1 | 0.0 | 2.7 | 16.3 | 0.7 | 4.6 | 1.6 | 2.3 | 1.4 | 0.0 | 2.4 |
| LnGrp Delay(d),s/veh | 28.5 | 0.4 | 0.1 | 74.1 | 29.7 | 13.6 | 91.9 | 62.3 | 63.5 | 73.8 | 0.0 | 68.3 |
| LnGrp LOS | C | A | A | E | C | B | F | E | E | E | | E |
| Approach Vol, veh/h | | 1147 | | | 1218 | | | 195 | | | 90 | |
| Approach Delay, s/veh | | 2.7 | | | 33.8 | | | 77.1 | | | 70.3 | |
| Approach LOS | | A | | | C | | | E | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 11.5 | 110.0 | 13.9 | 14.6 | 43.6 | 78.0 | 9.3 | 19.2 |
| Change Period (Y+Rc), s | 4.1 | 5.3 | 4.1 | 4.0 | 5.3 | * 5.3 | 4.1 | * 4.1 |
| Max Green Setting (Gmax), s | 10.1 | 74.5 | 11.9 | 36.0 | 11.9 | * 73 | 7.0 | * 41 |
| Max Q Clear Time (g_c+I1), s | 7.4 | 2.0 | 9.9 | 7.0 | 6.4 | 34.7 | 4.7 | 7.1 |
| Green Ext Time (p_c), s | 0.0 | 41.7 | 0.0 | 0.2 | 0.0 | 28.0 | 0.0 | 0.2 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 24.8 |
| HCM 2010 LOS | C |

Notes

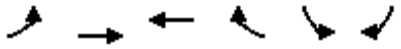


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 70 | 990 | 20 | 450 | 1100 | 120 | 20 | 40 | 380 | 190 | 50 | 50 |
| Future Volume (veh/h) | 70 | 990 | 20 | 450 | 1100 | 120 | 20 | 40 | 380 | 190 | 50 | 50 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.98 | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 0.99 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 74 | 1042 | 13 | 474 | 1158 | 125 | 21 | 42 | 137 | 200 | 53 | 14 |
| Adj No. of Lanes | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 393 | 1775 | 782 | 505 | 1479 | 659 | 253 | 208 | 176 | 221 | 133 | 35 |
| Arrive On Green | 0.15 | 0.34 | 0.34 | 0.29 | 0.84 | 0.84 | 0.14 | 0.11 | 0.11 | 0.12 | 0.09 | 0.09 |
| Sat Flow, veh/h | 1774 | 3539 | 1559 | 3442 | 3539 | 1576 | 1774 | 1863 | 1571 | 1774 | 1418 | 375 |
| Grp Volume(v), veh/h | 74 | 1042 | 13 | 474 | 1158 | 125 | 21 | 42 | 137 | 200 | 0 | 67 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1559 | 1721 | 1770 | 1576 | 1774 | 1863 | 1571 | 1774 | 0 | 1792 |
| Q Serve(g_s), s | 5.5 | 36.5 | 0.5 | 20.1 | 23.3 | 1.6 | 1.5 | 3.1 | 12.7 | 16.7 | 0.0 | 5.3 |
| Cycle Q Clear(g_c), s | 5.5 | 36.5 | 0.5 | 20.1 | 23.3 | 1.6 | 1.5 | 3.1 | 12.7 | 16.7 | 0.0 | 5.3 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.21 |
| Lane Grp Cap(c), veh/h | 393 | 1775 | 782 | 505 | 1479 | 659 | 253 | 208 | 176 | 221 | 0 | 168 |
| V/C Ratio(X) | 0.19 | 0.59 | 0.02 | 0.94 | 0.78 | 0.19 | 0.08 | 0.20 | 0.78 | 0.90 | 0.00 | 0.40 |
| Avail Cap(c_a), veh/h | 393 | 1775 | 782 | 505 | 1479 | 659 | 253 | 522 | 440 | 225 | 0 | 609 |
| HCM Platoon Ratio | 0.67 | 0.67 | 0.67 | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.91 | 0.91 | 0.91 | 0.84 | 0.84 | 0.84 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 52.0 | 36.9 | 8.7 | 52.3 | 9.1 | 3.4 | 55.8 | 60.5 | 64.8 | 64.8 | 0.0 | 64.0 |
| Incr Delay (d2), s/veh | 0.1 | 1.3 | 0.0 | 22.6 | 3.6 | 0.5 | 0.1 | 0.2 | 2.8 | 34.3 | 0.0 | 0.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.7 | 18.3 | 0.2 | 11.1 | 11.3 | 0.7 | 0.8 | 1.6 | 5.7 | 10.3 | 0.0 | 2.7 |
| LnGrp Delay(d),s/veh | 52.1 | 38.2 | 8.7 | 74.9 | 12.6 | 3.9 | 55.8 | 60.7 | 67.7 | 99.1 | 0.0 | 64.6 |
| LnGrp LOS | D | D | A | E | B | A | E | E | E | F | | E |
| Approach Vol, veh/h | | 1129 | | | 1757 | | | 200 | | | 267 | |
| Approach Delay, s/veh | | 38.8 | | | 28.8 | | | 65.0 | | | 90.4 | |
| Approach LOS | | D | | | C | | | E | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 26.0 | 80.5 | 25.4 | 18.0 | 38.5 | 68.0 | 22.7 | 20.8 |
| Change Period (Y+Rc), s | 4.0 | 5.3 | 4.0 | 4.0 | 5.3 | * 5.3 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 22.0 | 49.7 | 10.0 | 51.0 | 9.0 | * 63 | 19.0 | 42.0 |
| Max Q Clear Time (g_c+I2), s | 22.1 | 38.5 | 3.5 | 7.3 | 7.5 | 25.3 | 18.7 | 14.7 |
| Green Ext Time (p_c), s | 0.0 | 3.6 | 0.0 | 0.2 | 0.0 | 6.0 | 0.0 | 0.4 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 39.2 |
| HCM 2010 LOS | D |

Notes



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 150 | 1450 | 980 | 140 | 700 | 710 |
| Future Volume (veh/h) | 150 | 1450 | 980 | 140 | 700 | 710 |
| Number | 7 | 4 | 8 | 18 | 1 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 158 | 1526 | 1032 | 0 | 737 | 468 |
| Adj No. of Lanes | 2 | 2 | 3 | 1 | 1 | 2 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 204 | 1569 | 1801 | 561 | 881 | 1384 |
| Arrive On Green | 0.12 | 0.89 | 0.35 | 0.00 | 0.50 | 0.50 |
| Sat Flow, veh/h | 3442 | 3632 | 5253 | 1583 | 1774 | 2787 |
| Grp Volume(v), veh/h | 158 | 1526 | 1032 | 0 | 737 | 468 |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1770 | 1695 | 1583 | 1774 | 1393 |
| Q Serve(g_s), s | 6.7 | 53.2 | 24.7 | 0.0 | 53.7 | 15.2 |
| Cycle Q Clear(g_c), s | 6.7 | 53.2 | 24.7 | 0.0 | 53.7 | 15.2 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 204 | 1569 | 1801 | 561 | 881 | 1384 |
| V/C Ratio(X) | 0.77 | 0.97 | 0.57 | 0.00 | 0.84 | 0.34 |
| Avail Cap(c_a), veh/h | 344 | 1829 | 1966 | 612 | 881 | 1384 |
| HCM Platoon Ratio | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.62 | 0.62 | 1.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 65.1 | 7.7 | 39.3 | 0.0 | 32.5 | 22.8 |
| Incr Delay (d2), s/veh | 3.9 | 10.2 | 0.3 | 0.0 | 7.1 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.3 | 25.5 | 11.6 | 0.0 | 27.9 | 14.6 |
| LnGrp Delay(d),s/veh | 69.0 | 18.0 | 39.6 | 0.0 | 39.6 | 23.0 |
| LnGrp LOS | E | B | D | | D | C |
| Approach Vol, veh/h | | 1684 | 1032 | | 1205 | |
| Approach Delay, s/veh | | 22.7 | 39.6 | | 33.1 | |
| Approach LOS | | C | D | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | | | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | | | 71.1 | | 78.9 | 13.4 | 57.7 |
| Change Period (Y+Rc), s | | | | 4.5 | | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | | | | 77.5 | | 63.5 | 15.0 | 58.0 |
| Max Q Clear Time (g_c+I1), s | | | | 55.2 | | 55.7 | 8.7 | 26.7 |
| Green Ext Time (p_c), s | | | | 11.6 | | 3.1 | 0.2 | 7.7 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 30.4 |
| HCM 2010 LOS | C |



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 1540 | 610 | 0 | 1500 | 250 | 100 |
| Future Volume (veh/h) | 1540 | 610 | 0 | 1500 | 250 | 100 |
| Number | 4 | 14 | 3 | 8 | 5 | 12 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 0 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 1621 | 642 | 0 | 1579 | 263 | 105 |
| Adj No. of Lanes | 2 | 1 | 0 | 2 | 2 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 0 | 2 | 2 | 2 |
| Cap, veh/h | 1967 | 880 | 0 | 1967 | 1322 | 608 |
| Arrive On Green | 0.56 | 0.56 | 0.00 | 0.56 | 0.38 | 0.38 |
| Sat Flow, veh/h | 3632 | 1583 | 0 | 3725 | 3442 | 1583 |
| Grp Volume(v), veh/h | 1621 | 642 | 0 | 1579 | 263 | 105 |
| Grp Sat Flow(s),veh/h/ln | 1770 | 1583 | 0 | 1770 | 1721 | 1583 |
| Q Serve(g_s), s | 56.3 | 45.4 | 0.0 | 53.7 | 7.6 | 6.6 |
| Cycle Q Clear(g_c), s | 56.3 | 45.4 | 0.0 | 53.7 | 7.6 | 6.6 |
| Prop In Lane | | 1.00 | 0.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 1967 | 880 | 0 | 1967 | 1322 | 608 |
| V/C Ratio(X) | 0.82 | 0.73 | 0.00 | 0.80 | 0.20 | 0.17 |
| Avail Cap(c_a), veh/h | 2678 | 1198 | 0 | 2678 | 1322 | 608 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.87 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 27.3 | 24.9 | 0.0 | 26.7 | 30.8 | 30.5 |
| Incr Delay (d2), s/veh | 1.6 | 1.5 | 0.0 | 1.1 | 0.3 | 0.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 27.9 | 20.2 | 0.0 | 26.4 | 3.7 | 3.0 |
| LnGrp Delay(d),s/veh | 28.9 | 26.4 | 0.0 | 27.9 | 31.1 | 31.1 |
| LnGrp LOS | C | C | | C | C | C |
| Approach Vol, veh/h | 2263 | | | 1579 | 368 | |
| Approach Delay, s/veh | 28.2 | | | 27.9 | 31.1 | |
| Approach LOS | C | | | C | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | | | 8 |
| Phs Duration (G+Y+Rc), s | | 62.1 | | 87.9 | | | | 87.9 |
| Change Period (Y+Rc), s | | 4.5 | | 4.5 | | | | 4.5 |
| Max Green Setting (Gmax), s | | 27.5 | | 113.5 | | | | 113.5 |
| Max Q Clear Time (g_c+I1), s | | 9.6 | | 58.3 | | | | 55.7 |
| Green Ext Time (p_c), s | | 1.2 | | 25.1 | | | | 17.6 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 28.3 |
| HCM 2010 LOS | C |



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 1610 | 30 | 50 | 1460 | 40 | 50 |
| Future Volume (veh/h) | 1610 | 30 | 50 | 1460 | 40 | 50 |
| Number | 2 | 12 | 1 | 6 | 7 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 0.98 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 1695 | 26 | 53 | 1537 | 42 | 44 |
| Adj No. of Lanes | 2 | 1 | 1 | 2 | 1 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 2860 | 1253 | 68 | 3090 | 115 | 103 |
| Arrive On Green | 1.00 | 1.00 | 0.04 | 0.87 | 0.06 | 0.06 |
| Sat Flow, veh/h | 3632 | 1550 | 1774 | 3632 | 1774 | 1583 |
| Grp Volume(v), veh/h | 1695 | 26 | 53 | 1537 | 42 | 44 |
| Grp Sat Flow(s),veh/h/ln | 1770 | 1550 | 1774 | 1770 | 1774 | 1583 |
| Q Serve(g_s), s | 0.0 | 0.0 | 4.4 | 14.6 | 3.4 | 4.0 |
| Cycle Q Clear(g_c), s | 0.0 | 0.0 | 4.4 | 14.6 | 3.4 | 4.0 |
| Prop In Lane | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 2860 | 1253 | 68 | 3090 | 115 | 103 |
| V/C Ratio(X) | 0.59 | 0.02 | 0.78 | 0.50 | 0.37 | 0.43 |
| Avail Cap(c_a), veh/h | 2860 | 1253 | 142 | 3090 | 154 | 137 |
| HCM Platoon Ratio | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.73 | 0.73 | 0.51 | 0.51 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 0.0 | 0.0 | 71.5 | 2.1 | 67.2 | 67.5 |
| Incr Delay (d2), s/veh | 0.7 | 0.0 | 3.7 | 0.3 | 0.7 | 1.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.3 | 0.0 | 2.2 | 7.0 | 1.7 | 1.8 |
| LnGrp Delay(d),s/veh | 0.7 | 0.0 | 75.2 | 2.4 | 67.9 | 68.5 |
| LnGrp LOS | A | A | E | A | E | E |
| Approach Vol, veh/h | 1721 | | | 1590 | 86 | |
| Approach Delay, s/veh | 0.7 | | | 4.9 | 68.2 | |
| Approach LOS | A | | | A | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | | 6 | | |
| Phs Duration (G+Y+Rc), s | 9.7 | 126.5 | | 13.7 | | 136.3 | | |
| Change Period (Y+Rc), s | 4.0 | 5.3 | | 4.0 | | 5.3 | | |
| Max Green Setting (Gmax), s | 12.0 | 111.7 | | 13.0 | | 127.7 | | |
| Max Q Clear Time (g_c+I1), s | 6.4 | 2.0 | | 6.0 | | 16.6 | | |
| Green Ext Time (p_c), s | 0.0 | 11.5 | | 0.1 | | 9.4 | | |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 4.3 |
| HCM 2010 LOS | A |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 420 | 1030 | 210 | 80 | 800 | 180 | 310 | 630 | 200 | 330 | 270 | 400 |
| Future Volume (veh/h) | 420 | 1030 | 210 | 80 | 800 | 180 | 310 | 630 | 200 | 330 | 270 | 400 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 7 | 4 | 14 | 3 | 8 | 18 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 0.98 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 442 | 1084 | 213 | 84 | 842 | 100 | 326 | 663 | 175 | 347 | 284 | 0 |
| Adj No. of Lanes | 2 | 2 | 0 | 1 | 2 | 1 | 1 | 2 | 1 | 2 | 2 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 477 | 1089 | 213 | 235 | 1324 | 591 | 328 | 802 | 353 | 408 | 584 | 261 |
| Arrive On Green | 0.14 | 0.37 | 0.37 | 0.13 | 0.37 | 0.37 | 0.18 | 0.23 | 0.23 | 0.12 | 0.17 | 0.00 |
| Sat Flow, veh/h | 3442 | 2944 | 576 | 1774 | 3539 | 1580 | 1774 | 3539 | 1559 | 3442 | 3539 | 1583 |
| Grp Volume(v), veh/h | 442 | 650 | 647 | 84 | 842 | 100 | 326 | 663 | 175 | 347 | 284 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1770 | 1751 | 1774 | 1770 | 1580 | 1774 | 1770 | 1559 | 1721 | 1770 | 1583 |
| Q Serve(g_s), s | 16.5 | 47.5 | 48.0 | 5.6 | 25.4 | 5.5 | 23.9 | 23.2 | 9.4 | 12.8 | 9.5 | 0.0 |
| Cycle Q Clear(g_c), s | 16.5 | 47.5 | 48.0 | 5.6 | 25.4 | 5.5 | 23.9 | 23.2 | 9.4 | 12.8 | 9.5 | 0.0 |
| Prop In Lane | 1.00 | | 0.33 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 477 | 655 | 648 | 235 | 1324 | 591 | 328 | 802 | 353 | 408 | 584 | 261 |
| V/C Ratio(X) | 0.93 | 0.99 | 1.00 | 0.36 | 0.64 | 0.17 | 1.00 | 0.83 | 0.50 | 0.85 | 0.49 | 0.00 |
| Avail Cap(c_a), veh/h | 477 | 655 | 648 | 235 | 1324 | 591 | 328 | 1035 | 456 | 529 | 926 | 414 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.79 | 0.79 | 0.79 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 55.4 | 40.8 | 40.9 | 51.3 | 33.4 | 27.2 | 52.9 | 47.9 | 23.7 | 56.2 | 49.3 | 0.0 |
| Incr Delay (d2), s/veh | 20.8 | 29.5 | 31.3 | 0.9 | 2.3 | 0.6 | 48.4 | 4.4 | 1.1 | 10.0 | 0.6 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 9.2 | 28.5 | 28.8 | 2.8 | 12.8 | 2.5 | 16.1 | 11.8 | 4.1 | 6.7 | 4.7 | 0.0 |
| LnGrp Delay(d),s/veh | 76.1 | 70.3 | 72.2 | 52.3 | 35.8 | 27.8 | 101.3 | 52.3 | 24.8 | 66.1 | 49.9 | 0.0 |
| LnGrp LOS | E | E | E | D | D | C | F | D | C | E | D | |
| Approach Vol, veh/h | | 1739 | | | 1026 | | | 1164 | | | 631 | |
| Approach Delay, s/veh | | 72.5 | | | 36.3 | | | 61.9 | | | 58.8 | |
| Approach LOS | | E | | | D | | | E | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 22.5 | 53.4 | 20.0 | 34.0 | 22.0 | 53.9 | 28.0 | 26.1 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 4.6 | * 4.6 | 4.0 | 5.3 | 4.0 | 4.6 |
| Max Green Setting (Gmax), s | 6.3 | * 48 | 20.0 | * 38 | 18.0 | 36.1 | 24.0 | 34.0 |
| Max Q Clear Time (g_c+I1), s | 17.6 | 50.0 | 14.8 | 25.2 | 18.5 | 27.4 | 25.9 | 11.5 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | 0.6 | 4.1 | 0.0 | 4.1 | 0.0 | 1.7 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 59.8 |
| HCM 2010 LOS | E |

Notes



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 70 | 240 | 20 | 0 | 60 | 540 | 70 | 1710 | 0 | 650 | 1000 | 50 |
| Future Volume (veh/h) | 70 | 240 | 20 | 0 | 60 | 540 | 70 | 1710 | 0 | 650 | 1000 | 50 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1827 | 1827 | 1900 | 1827 | 1827 | 1827 | 1827 | 1827 | 1900 | 1827 | 1827 | 1900 |
| Adj Flow Rate, veh/h | 73 | 250 | 4 | 0 | 62 | 0 | 73 | 1781 | 0 | 677 | 1042 | 0 |
| Adj No. of Lanes | 1 | 2 | 0 | 1 | 1 | 1 | 1 | 2 | 0 | 2 | 2 | 0 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Cap, veh/h | 86 | 456 | 7 | 1 | 78 | 66 | 90 | 1884 | 0 | 715 | 2478 | 0 |
| Arrive On Green | 0.05 | 0.13 | 0.13 | 0.00 | 0.04 | 0.00 | 0.05 | 0.54 | 0.00 | 0.21 | 0.71 | 0.00 |
| Sat Flow, veh/h | 1740 | 3497 | 56 | 1740 | 1827 | 1553 | 1740 | 3563 | 0 | 3375 | 3563 | 0 |
| Grp Volume(v), veh/h | 73 | 124 | 130 | 0 | 62 | 0 | 73 | 1781 | 0 | 677 | 1042 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1740 | 1736 | 1817 | 1740 | 1827 | 1553 | 1740 | 1736 | 0 | 1688 | 1736 | 0 |
| Q Serve(g_s), s | 7.6 | 12.2 | 12.2 | 0.0 | 6.1 | 0.0 | 7.6 | 88.0 | 0.0 | 36.1 | 22.4 | 0.0 |
| Cycle Q Clear(g_c), s | 7.6 | 12.2 | 12.2 | 0.0 | 6.1 | 0.0 | 7.6 | 88.0 | 0.0 | 36.1 | 22.4 | 0.0 |
| Prop In Lane | 1.00 | | 0.03 | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 86 | 226 | 237 | 1 | 78 | 66 | 90 | 1884 | 0 | 715 | 2478 | 0 |
| V/C Ratio(X) | 0.85 | 0.55 | 0.55 | 0.00 | 0.79 | 0.00 | 0.81 | 0.95 | 0.00 | 0.95 | 0.42 | 0.00 |
| Avail Cap(c_a), veh/h | 86 | 226 | 237 | 48 | 100 | 85 | 153 | 1959 | 0 | 740 | 2478 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 86.1 | 74.3 | 74.3 | 0.0 | 86.6 | 0.0 | 85.7 | 39.2 | 0.0 | 70.9 | 10.7 | 0.0 |
| Incr Delay (d2), s/veh | 51.8 | 2.7 | 2.7 | 0.0 | 27.5 | 0.0 | 16.0 | 10.1 | 0.0 | 20.8 | 0.1 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 4.9 | 6.0 | 6.3 | 0.0 | 3.7 | 0.0 | 4.0 | 44.7 | 0.0 | 18.9 | 10.7 | 0.0 |
| LnGrp Delay(d),s/veh | 137.9 | 77.1 | 77.0 | 0.0 | 114.0 | 0.0 | 101.7 | 49.3 | 0.0 | 91.7 | 10.8 | 0.0 |
| LnGrp LOS | F | E | E | | F | | F | D | | F | B | |
| Approach Vol, veh/h | | 327 | | | 62 | | | 1854 | | | 1719 | |
| Approach Delay, s/veh | | 90.6 | | | 114.0 | | | 51.3 | | | 42.7 | |
| Approach LOS | | F | | | F | | | D | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 15.7 | 106.0 | 0.0 | 30.8 | 14.4 | 137.3 | 16.0 | 14.8 |
| Change Period (Y+Rc), s | 7.0 | 7.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 | 7.0 |
| Max Green Setting (Gmax), s | 10.0 | 103.0 | 5.0 | 14.0 | 16.0 | 129.0 | 9.0 | 10.0 |
| Max Q Clear Time (g_c+I1), s | 9.1 | 90.0 | 0.0 | 14.2 | 9.6 | 24.4 | 9.6 | 8.1 |
| Green Ext Time (p_c), s | 0.6 | 9.1 | 0.0 | 0.0 | 0.1 | 8.0 | 0.0 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 51.8 |
| HCM 2010 LOS | D |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 10 | 20 | 10 | 190 | 10 | 20 | 0 | 1750 | 600 | 10 | 1000 | 10 |
| Future Volume (veh/h) | 10 | 20 | 10 | 190 | 10 | 20 | 0 | 1750 | 600 | 10 | 1000 | 10 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 1 | 6 | 16 | 5 | 2 | 12 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 11 | 21 | 11 | 200 | 11 | 20 | 0 | 1842 | 598 | 11 | 1053 | 10 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 24 | 36 | 19 | 161 | 64 | 116 | 1 | 1442 | 1370 | 24 | 2911 | 28 |
| Arrive On Green | 0.01 | 0.03 | 0.03 | 0.09 | 0.11 | 0.11 | 0.00 | 0.77 | 0.77 | 0.01 | 0.81 | 0.81 |
| Sat Flow, veh/h | 1774 | 1153 | 604 | 1774 | 588 | 1069 | 1774 | 1863 | 1583 | 1774 | 3592 | 34 |
| Grp Volume(v), veh/h | 11 | 0 | 32 | 200 | 0 | 31 | 0 | 1842 | 598 | 11 | 519 | 544 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 0 | 1756 | 1774 | 0 | 1656 | 1774 | 1863 | 1583 | 1774 | 1770 | 1857 |
| Q Serve(g_s), s | 1.4 | 0.0 | 4.0 | 20.0 | 0.0 | 3.8 | 0.0 | 171.0 | 18.1 | 1.4 | 17.4 | 17.4 |
| Cycle Q Clear(g_c), s | 1.4 | 0.0 | 4.0 | 20.0 | 0.0 | 3.8 | 0.0 | 171.0 | 18.1 | 1.4 | 17.4 | 17.4 |
| Prop In Lane | 1.00 | | 0.34 | 1.00 | | 0.65 | 1.00 | | 1.00 | 1.00 | | 0.02 |
| Lane Grp Cap(c), veh/h | 24 | 0 | 55 | 161 | 0 | 180 | 1 | 1442 | 1370 | 24 | 1434 | 1505 |
| V/C Ratio(X) | 0.47 | 0.00 | 0.59 | 1.24 | 0.00 | 0.17 | 0.00 | 1.28 | 0.44 | 0.47 | 0.36 | 0.36 |
| Avail Cap(c_a), veh/h | 48 | 0 | 64 | 161 | 0 | 180 | 48 | 1442 | 1370 | 48 | 1434 | 1505 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 108.2 | 0.0 | 105.6 | 100.4 | 0.0 | 89.4 | 0.0 | 24.9 | 3.2 | 108.2 | 5.6 | 5.6 |
| Incr Delay (d2), s/veh | 13.5 | 0.0 | 9.7 | 151.5 | 0.0 | 0.5 | 0.0 | 130.1 | 0.2 | 13.5 | 0.2 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.8 | 0.0 | 2.1 | 16.5 | 0.0 | 1.7 | 0.0 | 139.1 | 7.9 | 0.8 | 8.4 | 8.8 |
| LnGrp Delay(d),s/veh | 121.7 | 0.0 | 115.3 | 251.9 | 0.0 | 89.9 | 0.0 | 155.1 | 3.5 | 121.7 | 5.8 | 5.8 |
| LnGrp LOS | F | | F | F | | F | | F | A | F | A | A |
| Approach Vol, veh/h | | 43 | | | 231 | | | 2440 | | | 1074 | |
| Approach Delay, s/veh | | 116.9 | | | 230.2 | | | 117.9 | | | 7.0 | |
| Approach LOS | | F | | | F | | | F | | | A | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 10.0 | 183.9 | 25.0 | 11.9 | 7.9 | 176.0 | 7.9 | 28.9 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 6.0 | 171.0 | 20.0 | 8.0 | 6.0 | 171.0 | 6.0 | 22.0 |
| Max Q Clear Time (g_c+I1), s | 10.0 | 19.4 | 22.0 | 6.0 | 3.4 | 173.0 | 3.4 | 5.8 |
| Green Ext Time (p_c), s | 0.0 | 7.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 93.3 |
| HCM 2010 LOS | F |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 300 | 30 | 120 | 80 | 390 | 30 | 1960 | 290 | 360 | 690 | 150 |
| Future Volume (veh/h) | 0 | 300 | 30 | 120 | 80 | 390 | 30 | 1960 | 290 | 360 | 690 | 150 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 0 | 316 | 32 | 105 | 113 | 411 | 32 | 2063 | 0 | 379 | 726 | 0 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 1 | 289 | 29 | 103 | 480 | 408 | 41 | 1730 | 866 | 300 | 2246 | 0 |
| Arrive On Green | 0.00 | 0.17 | 0.17 | 0.06 | 0.26 | 0.26 | 0.02 | 0.49 | 0.00 | 0.17 | 0.63 | 0.00 |
| Sat Flow, veh/h | 1774 | 1664 | 169 | 1774 | 1863 | 1583 | 1774 | 3539 | 1583 | 1774 | 3632 | 0 |
| Grp Volume(v), veh/h | 0 | 0 | 348 | 105 | 113 | 411 | 32 | 2063 | 0 | 379 | 726 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 0 | 1833 | 1774 | 1863 | 1583 | 1774 | 1770 | 1583 | 1774 | 1770 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 39.0 | 13.0 | 10.8 | 58.0 | 4.0 | 110.0 | 0.0 | 38.0 | 21.2 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 0.0 | 39.0 | 13.0 | 10.8 | 58.0 | 4.0 | 110.0 | 0.0 | 38.0 | 21.2 | 0.0 |
| Prop In Lane | 1.00 | | 0.09 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 1 | 0 | 318 | 103 | 480 | 408 | 41 | 1730 | 866 | 300 | 2246 | 0 |
| V/C Ratio(X) | 0.00 | 0.00 | 1.10 | 1.02 | 0.24 | 1.01 | 0.78 | 1.19 | 0.00 | 1.26 | 0.32 | 0.00 |
| Avail Cap(c_a), veh/h | 32 | 0 | 318 | 103 | 480 | 408 | 71 | 1730 | 866 | 300 | 2246 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 0.0 | 0.0 | 93.0 | 106.0 | 66.0 | 83.5 | 109.3 | 57.5 | 0.0 | 93.5 | 18.9 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 0.0 | 78.5 | 95.6 | 0.2 | 46.3 | 26.0 | 92.6 | 0.0 | 143.1 | 0.1 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 0.0 | 26.7 | 9.1 | 5.6 | 30.6 | 2.3 | 76.1 | 0.0 | 30.6 | 10.4 | 0.0 |
| LnGrp Delay(d),s/veh | 0.0 | 0.0 | 171.5 | 201.9 | 66.2 | 129.8 | 135.4 | 150.1 | 0.0 | 236.6 | 19.0 | 0.0 |
| LnGrp LOS | | | F | F | E | F | F | F | | F | B | |
| Approach Vol, veh/h | | 348 | | | 629 | | | 2095 | | | 1105 | |
| Approach Delay, s/veh | | 171.5 | | | 130.4 | | | 149.8 | | | 93.6 | |
| Approach LOS | | F | | | F | | | F | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 4.0 | 117.0 | 19.0 | 45.0 | 11.2 | 149.8 | 0.0 | 64.0 |
| Change Period (Y+Rc), s | 6.0 | 7.0 | 6.0 | 6.0 | 6.0 | 7.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 38.0 | 110.0 | 13.0 | 39.0 | 9.0 | 139.0 | 4.0 | 48.0 |
| Max Q Clear Time (g_c+I1), s | 10.0 | 112.0 | 15.0 | 41.0 | 6.0 | 23.2 | 0.0 | 60.0 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.8 | 0.0 | 0.0 |

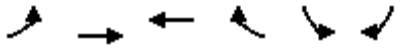
| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 133.8 |
| HCM 2010 LOS | F |

Notes

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 102 | 820 | 25 | 79 | 950 | 130 | 153 | 180 | 242 | 120 | 53 | 147 |
| Future Volume (veh/h) | 102 | 820 | 25 | 79 | 950 | 130 | 153 | 180 | 242 | 120 | 53 | 147 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 107 | 863 | 26 | 83 | 1000 | 137 | 161 | 189 | 255 | 126 | 56 | 155 |
| Adj No. of Lanes | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 139 | 1297 | 39 | 103 | 1094 | 150 | 195 | 618 | 553 | 158 | 581 | 520 |
| Arrive On Green | 0.08 | 0.37 | 0.37 | 0.06 | 0.35 | 0.35 | 0.11 | 0.35 | 0.35 | 0.09 | 0.33 | 0.32 |
| Sat Flow, veh/h | 1774 | 3508 | 106 | 1774 | 3128 | 428 | 1774 | 1770 | 1583 | 1774 | 1770 | 1583 |
| Grp Volume(v), veh/h | 107 | 435 | 454 | 83 | 565 | 572 | 161 | 189 | 255 | 126 | 56 | 155 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1844 | 1774 | 1770 | 1787 | 1774 | 1770 | 1583 | 1774 | 1770 | 1583 |
| Q Serve(g_s), s | 7.1 | 24.7 | 24.7 | 5.5 | 36.6 | 36.7 | 10.7 | 9.3 | 15.0 | 8.4 | 2.6 | 8.8 |
| Cycle Q Clear(g_c), s | 7.1 | 24.7 | 24.7 | 5.5 | 36.6 | 36.7 | 10.7 | 9.3 | 15.0 | 8.4 | 2.6 | 8.8 |
| Prop In Lane | 1.00 | | 0.06 | 1.00 | | 0.24 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 139 | 654 | 682 | 103 | 619 | 625 | 195 | 618 | 553 | 158 | 581 | 520 |
| V/C Ratio(X) | 0.77 | 0.67 | 0.67 | 0.80 | 0.91 | 0.91 | 0.82 | 0.31 | 0.46 | 0.80 | 0.10 | 0.30 |
| Avail Cap(c_a), veh/h | 192 | 737 | 768 | 103 | 649 | 655 | 237 | 618 | 553 | 163 | 581 | 520 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.61 | 0.61 | 0.61 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 54.2 | 31.6 | 31.6 | 55.8 | 37.3 | 37.4 | 52.3 | 28.4 | 30.5 | 53.6 | 27.9 | 30.2 |
| Incr Delay (d2), s/veh | 11.8 | 1.9 | 1.9 | 23.3 | 11.5 | 11.5 | 17.7 | 1.3 | 2.8 | 23.0 | 0.3 | 1.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.9 | 12.4 | 13.0 | 3.4 | 19.9 | 20.1 | 6.2 | 4.8 | 7.0 | 5.1 | 1.3 | 4.1 |
| LnGrp Delay(d),s/veh | 66.1 | 33.5 | 33.5 | 79.1 | 48.8 | 48.9 | 70.0 | 29.7 | 33.2 | 76.6 | 28.3 | 31.6 |
| LnGrp LOS | E | C | C | E | D | D | E | C | C | E | C | C |
| Approach Vol, veh/h | | 996 | | | 1220 | | | 605 | | | 337 | |
| Approach Delay, s/veh | | 37.0 | | | 50.9 | | | 41.9 | | | 47.9 | |
| Approach LOS | | D | | | D | | | D | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 14.7 | 45.9 | 11.0 | 48.4 | 17.2 | 43.4 | 13.4 | 46.0 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 10.5 | 35.5 | 6.5 | 49.5 | 15.5 | 30.5 | 12.5 | 43.5 |
| Max Q Clear Time (g_c+I1), s | 10.4 | 17.0 | 7.5 | 26.7 | 12.7 | 10.8 | 9.1 | 38.7 |
| Green Ext Time (p_c), s | 0.0 | 2.3 | 0.0 | 5.3 | 0.1 | 1.0 | 0.1 | 2.8 |

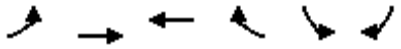
| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 44.5 |
| HCM 2010 LOS | D |



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 136 | 1046 | 1099 | 880 | 310 | 60 |
| Future Volume (veh/h) | 136 | 1046 | 1099 | 880 | 310 | 60 |
| Number | 7 | 4 | 8 | 18 | 1 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 143 | 1101 | 1157 | 926 | 326 | 63 |
| Adj No. of Lanes | 1 | 2 | 2 | 1 | 2 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 188 | 2298 | 1752 | 1186 | 874 | 402 |
| Arrive On Green | 0.11 | 0.65 | 0.49 | 0.49 | 0.25 | 0.25 |
| Sat Flow, veh/h | 1774 | 3632 | 3632 | 1583 | 3442 | 1583 |
| Grp Volume(v), veh/h | 143 | 1101 | 1157 | 926 | 326 | 63 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1770 | 1583 | 1721 | 1583 |
| Q Serve(g_s), s | 6.5 | 13.1 | 20.3 | 29.2 | 6.5 | 2.6 |
| Cycle Q Clear(g_c), s | 6.5 | 13.1 | 20.3 | 29.2 | 6.5 | 2.6 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 188 | 2298 | 1752 | 1186 | 874 | 402 |
| V/C Ratio(X) | 0.76 | 0.48 | 0.66 | 0.78 | 0.37 | 0.16 |
| Avail Cap(c_a), veh/h | 258 | 2612 | 1927 | 1264 | 874 | 402 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 35.9 | 7.4 | 15.7 | 6.3 | 25.4 | 24.0 |
| Incr Delay (d2), s/veh | 8.6 | 0.2 | 0.7 | 3.0 | 1.2 | 0.8 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.6 | 6.3 | 10.0 | 21.8 | 3.2 | 2.6 |
| LnGrp Delay(d),s/veh | 44.5 | 7.5 | 16.4 | 9.3 | 26.6 | 24.8 |
| LnGrp LOS | D | A | B | A | C | C |
| Approach Vol, veh/h | | 1244 | 2083 | | 389 | |
| Approach Delay, s/veh | | 11.8 | 13.3 | | 26.3 | |
| Approach LOS | | B | B | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | | | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | | | 57.7 | | 25.0 | 12.7 | 44.9 |
| Change Period (Y+Rc), s | | | | 4.5 | | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | | | | 60.5 | | 20.5 | 11.5 | 44.5 |
| Max Q Clear Time (g_c+I1), s | | | | 15.1 | | 8.5 | 8.5 | 31.2 |
| Green Ext Time (p_c), s | | | | 9.2 | | 1.0 | 0.1 | 9.2 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 14.1 |
| HCM 2010 LOS | B |



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 370 | 1056 | 1848 | 570 | 960 | 191 |
| Future Volume (veh/h) | 370 | 1056 | 1848 | 570 | 960 | 191 |
| Number | 5 | 2 | 6 | 16 | 3 | 18 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 389 | 1112 | 1945 | 600 | 1011 | 201 |
| Adj No. of Lanes | 1 | 3 | 2 | 1 | 2 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 319 | 3560 | 1746 | 781 | 849 | 391 |
| Arrive On Green | 0.18 | 0.70 | 0.49 | 0.49 | 0.25 | 0.25 |
| Sat Flow, veh/h | 1774 | 5253 | 3632 | 1583 | 3442 | 1583 |
| Grp Volume(v), veh/h | 389 | 1112 | 1945 | 600 | 1011 | 201 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1695 | 1770 | 1583 | 1721 | 1583 |
| Q Serve(g_s), s | 27.0 | 12.6 | 74.0 | 46.4 | 37.0 | 16.4 |
| Cycle Q Clear(g_c), s | 27.0 | 12.6 | 74.0 | 46.4 | 37.0 | 16.4 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 319 | 3560 | 1746 | 781 | 849 | 391 |
| V/C Ratio(X) | 1.22 | 0.31 | 1.11 | 0.77 | 1.19 | 0.51 |
| Avail Cap(c_a), veh/h | 319 | 3560 | 1746 | 781 | 849 | 391 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 61.5 | 8.6 | 38.0 | 31.0 | 56.5 | 48.8 |
| Incr Delay (d2), s/veh | 123.3 | 0.0 | 59.9 | 4.7 | 97.6 | 1.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 24.1 | 5.9 | 50.7 | 21.2 | 29.1 | 7.3 |
| LnGrp Delay(d),s/veh | 184.8 | 8.7 | 97.9 | 35.7 | 154.1 | 49.9 |
| LnGrp LOS | F | A | F | D | F | D |
| Approach Vol, veh/h | | 1501 | 2545 | | 1212 | |
| Approach Delay, s/veh | | 54.3 | 83.2 | | 136.8 | |
| Approach LOS | | D | F | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 109.0 | | | 31.0 | 78.0 | | 41.0 |
| Change Period (Y+Rc), s | | 4.5 | | | 4.5 | 4.5 | | 4.5 |
| Max Green Setting (Gmax), s | | 104.5 | | | 26.5 | 73.5 | | 36.5 |
| Max Q Clear Time (g_c+I1), s | | 14.6 | | | 29.0 | 76.0 | | 39.0 |
| Green Ext Time (p_c), s | | 9.4 | | | 0.0 | 0.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 87.3 |
| HCM 2010 LOS | F |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 488 | 1528 | 0 | 0 | 1858 | 1170 | 560 | 0 | 220 | 0 | 0 | 0 |
| Future Volume (veh/h) | 488 | 1528 | 0 | 0 | 1858 | 1170 | 560 | 0 | 220 | 0 | 0 | 0 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 7 | 4 | 14 | | | |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | | | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 0 | 0 | 1863 | 1863 | 1863 | 1863 | 1863 | | | |
| Adj Flow Rate, veh/h | 514 | 1608 | 0 | 0 | 2210 | 1063 | 589 | 0 | 232 | | | |
| Adj No. of Lanes | 2 | 3 | 0 | 0 | 2 | 1 | 2 | 0 | 1 | | | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | | | |
| Percent Heavy Veh, % | 2 | 2 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | | | |
| Cap, veh/h | 234 | 3082 | 0 | 0 | 1752 | 744 | 916 | 0 | 409 | | | |
| Arrive On Green | 0.07 | 0.61 | 0.00 | 0.00 | 0.47 | 0.47 | 0.26 | 0.00 | 0.26 | | | |
| Sat Flow, veh/h | 3442 | 5253 | 0 | 0 | 3725 | 1583 | 3548 | 0 | 1583 | | | |
| Grp Volume(v), veh/h | 514 | 1608 | 0 | 0 | 2210 | 1063 | 589 | 0 | 232 | | | |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1695 | 0 | 0 | 1863 | 1583 | 1774 | 0 | 1583 | | | |
| Q Serve(g_s), s | 4.0 | 10.7 | 0.0 | 0.0 | 27.7 | 27.7 | 8.7 | 0.0 | 7.5 | | | |
| Cycle Q Clear(g_c), s | 4.0 | 10.7 | 0.0 | 0.0 | 27.7 | 27.7 | 8.7 | 0.0 | 7.5 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 1.00 | 1.00 | | 1.00 | | | |
| Lane Grp Cap(c), veh/h | 234 | 3082 | 0 | 0 | 1752 | 744 | 916 | 0 | 409 | | | |
| V/C Ratio(X) | 2.20 | 0.52 | 0.00 | 0.00 | 1.26 | 1.43 | 0.64 | 0.00 | 0.57 | | | |
| Avail Cap(c_a), veh/h | 234 | 3082 | 0 | 0 | 1752 | 744 | 2789 | 0 | 1244 | | | |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | | | |
| Uniform Delay (d), s/veh | 27.5 | 6.7 | 0.0 | 0.0 | 15.6 | 15.6 | 19.4 | 0.0 | 19.0 | | | |
| Incr Delay (d2), s/veh | 553.6 | 0.2 | 0.0 | 0.0 | 122.5 | 200.3 | 0.8 | 0.0 | 1.2 | | | |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| %ile BackOfQ(50%),veh/ln | 19.8 | 5.0 | 0.0 | 0.0 | 43.9 | 53.4 | 4.4 | 0.0 | 6.7 | | | |
| LnGrp Delay(d),s/veh | 581.0 | 6.8 | 0.0 | 0.0 | 138.1 | 215.9 | 20.2 | 0.0 | 20.2 | | | |
| LnGrp LOS | F | A | | | F | F | C | | C | | | |
| Approach Vol, veh/h | | 2122 | | | 3273 | | | 821 | | | | |
| Approach Delay, s/veh | | 145.9 | | | 163.4 | | | 20.2 | | | | |
| Approach LOS | | F | | | F | | | C | | | | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | |
| Phs Duration (G+Y+Rc), s | | 39.7 | | 19.2 | 8.0 | 31.7 | | |
| Change Period (Y+Rc), s | | 5.3 | | 5.3 | 4.0 | 5.3 | | |
| Max Green Setting (Gmax), s | | 34.4 | | 45.0 | 4.0 | 26.4 | | |
| Max Q Clear Time (g_c+I1), s | | 12.7 | | 10.7 | 6.0 | 29.7 | | |
| Green Ext Time (p_c), s | | 11.5 | | 3.2 | 0.0 | 0.0 | | |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 138.5 |
| HCM 2010 LOS | F |

Notes

| Intersection | |
|---|---|
| Int Delay, s/veh | 163.9 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 105 | 533 | 50 | 113 | 553 | 40 |
| Future Vol, veh/h | 105 | 533 | 50 | 113 | 553 | 40 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 111 | 561 | 53 | 119 | 582 | 42 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1319 | 113 | 0 | 0 | 172 | 0 |
| Stage 1 | 113 | - | - | - | - | - |
| Stage 2 | 1206 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 173 | 940 | - | - | 1405 | - |
| Stage 1 | 912 | - | - | - | - | - |
| Stage 2 | 283 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | ~ 100 | 940 | - | - | 1405 | - |
| Mov Cap-2 Maneuver | ~ 100 | - | - | - | - | - |
| Stage 1 | 525 | - | - | - | - | - |
| Stage 2 | 283 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | $ 350 | 0 | 8.7 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 395 | 1405 | - |
| HCM Lane V/C Ratio | - | - | 1.7 | 0.414 | - |
| HCM Control Delay (s) | - | - | $ 350 | 9.4 | 0 |
| HCM Lane LOS | - | - | F | A | A |
| HCM 95th %tile Q(veh) | - | - | 40.8 | 2.1 | - |

| Notes | | | |
|---|---|---|---|
| ~: Volume exceeds capacity | $: Delay exceeds 300s | +: Computation Not Defined | *: All major volume in platoon |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 30 | 636 | 635 | 28 | 30 | 3 |
| Future Vol, veh/h | 30 | 636 | 635 | 28 | 30 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 32 | 669 | 668 | 29 | 32 | 3 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 697 | 0 | - | 0 | 1416 | 683 |
| Stage 1 | - | - | - | - | 683 | - |
| Stage 2 | - | - | - | - | 733 | - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | 899 | - | - | - | 151 | 449 |
| Stage 1 | - | - | - | - | 502 | - |
| Stage 2 | - | - | - | - | 475 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 899 | - | - | - | 146 | 449 |
| Mov Cap-2 Maneuver | - | - | - | - | 146 | - |
| Stage 1 | - | - | - | - | 484 | - |
| Stage 2 | - | - | - | - | 475 | - |

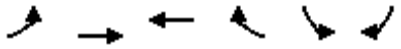
| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.4 | 0 | 34.6 |
| HCM LOS | | | D |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 899 | - | - | - | 156 |
| HCM Lane V/C Ratio | 0.035 | - | - | - | 0.223 |
| HCM Control Delay (s) | 9.2 | - | - | - | 34.6 |
| HCM Lane LOS | A | - | - | - | D |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 0.8 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 236 | 430 | 500 | 503 | 160 | 570 |
| Future Volume (veh/h) | 236 | 430 | 500 | 503 | 160 | 570 |
| Number | 4 | 14 | 3 | 8 | 5 | 12 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 248 | 453 | 526 | 529 | 168 | 600 |
| Adj No. of Lanes | 2 | 0 | 1 | 2 | 1 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 440 | 394 | 591 | 2243 | 464 | 941 |
| Arrive On Green | 0.25 | 0.24 | 0.33 | 0.63 | 0.26 | 0.26 |
| Sat Flow, veh/h | 1863 | 1583 | 1774 | 3632 | 1774 | 1583 |
| Grp Volume(v), veh/h | 248 | 453 | 526 | 529 | 168 | 600 |
| Grp Sat Flow(s),veh/h/ln | 1770 | 1583 | 1774 | 1770 | 1774 | 1583 |
| Q Serve(g_s), s | 9.4 | 19.0 | 21.5 | 4.9 | 5.9 | 18.9 |
| Cycle Q Clear(g_c), s | 9.4 | 19.0 | 21.5 | 4.9 | 5.9 | 18.9 |
| Prop In Lane | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 440 | 394 | 591 | 2243 | 464 | 941 |
| V/C Ratio(X) | 0.56 | 1.15 | 0.89 | 0.24 | 0.36 | 0.64 |
| Avail Cap(c_a), veh/h | 440 | 394 | 905 | 2870 | 464 | 941 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 25.1 | 29.0 | 24.2 | 6.0 | 23.0 | 10.1 |
| Incr Delay (d2), s/veh | 1.7 | 93.4 | 7.4 | 0.1 | 0.5 | 1.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 4.7 | 18.4 | 11.7 | 2.4 | 3.0 | 8.5 |
| LnGrp Delay(d),s/veh | 26.8 | 122.4 | 31.6 | 6.1 | 23.5 | 11.6 |
| LnGrp LOS | C | F | C | A | C | B |
| Approach Vol, veh/h | 701 | | | 1055 | 768 | |
| Approach Delay, s/veh | 88.6 | | | 18.8 | 14.2 | |
| Approach LOS | F | | | B | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | 3 | 4 | | | | 8 |
| Phs Duration (G+Y+Rc), s | | 24.0 | 29.4 | 23.0 | | | | 52.4 |
| Change Period (Y+Rc), s | | 4.5 | 4.5 | 4.5 | | | | 4.5 |
| Max Green Setting (Gmax), s | | 19.5 | 38.5 | 18.5 | | | | 61.5 |
| Max Q Clear Time (g_c+I1), s | | 20.9 | 23.5 | 21.0 | | | | 6.9 |
| Green Ext Time (p_c), s | | 0.0 | 1.5 | 0.0 | | | | 3.4 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 36.8 |
| HCM 2010 LOS | D |



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 26 | 780 | 980 | 109 | 210 | 15 |
| Future Volume (veh/h) | 26 | 780 | 980 | 109 | 210 | 15 |
| Number | 7 | 4 | 8 | 18 | 1 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 27 | 821 | 1032 | -9 | 221 | 1 |
| Adj No. of Lanes | 1 | 2 | 2 | 1 | 1 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 211 | 2347 | 1620 | 725 | 291 | 260 |
| Arrive On Green | 0.12 | 0.66 | 0.46 | 0.00 | 0.16 | 0.16 |
| Sat Flow, veh/h | 1774 | 3632 | 3632 | 1583 | 1774 | 1583 |
| Grp Volume(v), veh/h | 27 | 821 | 1032 | -9 | 221 | 1 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1770 | 1583 | 1774 | 1583 |
| Q Serve(g_s), s | 0.6 | 4.7 | 10.3 | 0.0 | 5.5 | 0.0 |
| Cycle Q Clear(g_c), s | 0.6 | 4.7 | 10.3 | 0.0 | 5.5 | 0.0 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 211 | 2347 | 1620 | 725 | 291 | 260 |
| V/C Ratio(X) | 0.13 | 0.35 | 0.64 | -0.01 | 0.76 | 0.00 |
| Avail Cap(c_a), veh/h | 345 | 4436 | 3442 | 1540 | 920 | 821 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 18.2 | 3.4 | 9.6 | 0.0 | 18.5 | 16.2 |
| Incr Delay (d2), s/veh | 0.3 | 0.1 | 0.4 | 0.0 | 4.1 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.3 | 2.3 | 5.1 | 0.0 | 3.0 | 0.0 |
| LnGrp Delay(d),s/veh | 18.5 | 3.5 | 10.0 | 0.0 | 22.5 | 16.2 |
| LnGrp LOS | B | A | B | | C | B |
| Approach Vol, veh/h | | 848 | 1023 | | 222 | |
| Approach Delay, s/veh | | 4.0 | 10.1 | | 22.5 | |
| Approach LOS | | A | B | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | | | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | | | 34.7 | | 11.6 | 9.5 | 25.2 |
| Change Period (Y+Rc), s | | | | 5.3 | | 4.0 | 4.5 | 5.3 |
| Max Green Setting (Gmax), s | | | | 56.7 | | 24.0 | 8.5 | 43.7 |
| Max Q Clear Time (g_c+I1), s | | | | 6.7 | | 7.5 | 2.6 | 12.3 |
| Green Ext Time (p_c), s | | | | 6.1 | | 0.6 | 0.0 | 7.6 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 8.9 |
| HCM 2010 LOS | A |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 33 | 977 | 30 | 500 | 1134 | 100 | 20 | 280 | 480 | 100 | 620 | 16 |
| Future Volume (veh/h) | 33 | 977 | 30 | 500 | 1134 | 100 | 20 | 280 | 480 | 100 | 620 | 16 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.96 | 1.00 | | 0.50 | 1.00 | | 0.79 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 35 | 1028 | -17 | 526 | 1194 | 98 | 21 | 295 | 428 | 105 | 653 | 16 |
| Adj No. of Lanes | 1 | 2 | 0 | 2 | 2 | 0 | 1 | 1 | 2 | 1 | 1 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 47 | 1153 | 0 | 558 | 1523 | 125 | 35 | 604 | 903 | 134 | 682 | 17 |
| Arrive On Green | 0.03 | 0.33 | 0.00 | 0.16 | 0.46 | 0.45 | 0.02 | 0.32 | 0.32 | 0.08 | 0.38 | 0.38 |
| Sat Flow, veh/h | 1774 | 3632 | 0 | 3442 | 3300 | 270 | 1774 | 1863 | 1392 | 1774 | 1798 | 44 |
| Grp Volume(v), veh/h | 35 | 1011 | 0 | 526 | 639 | 653 | 21 | 295 | 428 | 105 | 0 | 669 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 0 | 1721 | 1770 | 1801 | 1774 | 1863 | 696 | 1774 | 0 | 1842 |
| Q Serve(g_s), s | 2.8 | 38.3 | 0.0 | 21.4 | 43.2 | 43.5 | 1.7 | 18.0 | 32.4 | 8.3 | 0.0 | 50.2 |
| Cycle Q Clear(g_c), s | 2.8 | 38.3 | 0.0 | 21.4 | 43.2 | 43.5 | 1.7 | 18.0 | 32.4 | 8.3 | 0.0 | 50.2 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 0.15 | 1.00 | | 1.00 | 1.00 | | 0.02 |
| Lane Grp Cap(c), veh/h | 47 | 1153 | 0 | 558 | 817 | 831 | 35 | 604 | 903 | 134 | 0 | 699 |
| V/C Ratio(X) | 0.75 | 0.88 | 0.00 | 0.94 | 0.78 | 0.79 | 0.60 | 0.49 | 0.47 | 0.78 | 0.00 | 0.96 |
| Avail Cap(c_a), veh/h | 100 | 1247 | 0 | 558 | 817 | 831 | 63 | 604 | 903 | 213 | 0 | 727 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 68.6 | 45.2 | 0.0 | 58.8 | 32.2 | 32.4 | 69.0 | 38.5 | 27.1 | 64.5 | 0.0 | 42.9 |
| Incr Delay (d2), s/veh | 20.9 | 7.1 | 0.0 | 24.7 | 5.1 | 5.1 | 15.1 | 0.6 | 0.4 | 9.6 | 0.0 | 22.9 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.6 | 19.8 | 0.0 | 12.1 | 22.3 | 22.8 | 1.0 | 9.4 | 6.2 | 4.4 | 0.0 | 29.9 |
| LnGrp Delay(d),s/veh | 89.5 | 52.3 | 0.0 | 83.5 | 37.3 | 37.5 | 84.1 | 39.1 | 27.4 | 74.1 | 0.0 | 65.8 |
| LnGrp LOS | F | D | | F | D | D | F | D | C | E | | E |
| Approach Vol, veh/h | | 1046 | | | 1818 | | | 744 | | | 774 | |
| Approach Delay, s/veh | | 53.5 | | | 50.8 | | | 33.7 | | | 67.0 | |
| Approach LOS | | D | | | D | | | C | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 27.0 | 50.2 | 6.8 | 57.9 | 7.7 | 69.5 | 14.7 | 50.0 |
| Change Period (Y+Rc), s | 4.0 | 5.5 | 4.0 | 4.0 | 4.0 | 5.5 | 4.5 | 4.0 |
| Max Green Setting (Gmax), s | 23.0 | 48.5 | 5.0 | 56.0 | 8.0 | 63.5 | 16.5 | 44.0 |
| Max Q Clear Time (g_c+I1), s | 23.4 | 40.3 | 3.7 | 52.2 | 4.8 | 45.5 | 10.3 | 34.4 |
| Green Ext Time (p_c), s | 0.0 | 4.5 | 0.0 | 1.6 | 0.0 | 9.2 | 0.1 | 3.8 |

| Intersection Summary | | |
|---|---|---|
| HCM 2010 Ctrl Delay | | 51.4 |
| HCM 2010 LOS | | D |

| Intersection | |
|---|---|
| Int Delay, s/veh | 16.5 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 1507 | 50 | 10 | 1731 | 30 | 80 |
| Future Vol, veh/h | 1507 | 50 | 10 | 1731 | 30 | 80 |
| Conflicting Peds, #/hr | 0 | 1 | 1 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 150 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1586 | 53 | 11 | 1822 | 32 | 84 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 1640 | 0 | 2547 | 821 |
| Stage 1 | - | - | - | - | 1614 | - |
| Stage 2 | - | - | - | - | 933 | - |
| Critical Hdwy | - | - | 4.14 | - | 6.84 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 | - |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 | 3.32 |
| Pot Cap-1 Maneuver | - | - | 391 | - | ~ 22 | 318 |
| Stage 1 | - | - | - | - | 148 | - |
| Stage 2 | - | - | - | - | 343 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 391 | - | ~ 21 | 318 |
| Mov Cap-2 Maneuver | - | - | - | - | ~ 21 | - |
| Stage 1 | - | - | - | - | 144 | - |
| Stage 2 | - | - | - | - | 343 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.1 | $ 510.6 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 65 | - | - | 391 | - |
| HCM Lane V/C Ratio | 1.781 | - | - | 0.027 | - |
| HCM Control Delay (s) | $ 510.6 | - | - | 14.5 | - |
| HCM Lane LOS | F | - | - | B | - |
| HCM 95th %tile Q(veh) | 10.5 | - | - | 0.1 | - |

| Notes | | | |
|---|---|---|---|
| ~: Volume exceeds capacity | $: Delay exceeds 300s | +: Computation Not Defined | *: All major volume in platoon |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 80 | 1403 | 124 | 50 | 1280 | 60 | 231 | 120 | 80 | 160 | 160 | 250 |
| Future Volume (veh/h) | 80 | 1403 | 124 | 50 | 1280 | 60 | 231 | 120 | 80 | 160 | 160 | 250 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.98 | 1.00 | | 0.99 | 1.00 | | 0.99 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 84 | 1477 | 126 | 53 | 1347 | 63 | 243 | 126 | 8 | 168 | 168 | 203 |
| Adj No. of Lanes | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 105 | 1550 | 131 | 202 | 1836 | 86 | 232 | 457 | 385 | 193 | 171 | 206 |
| Arrive On Green | 0.06 | 0.47 | 0.46 | 0.11 | 0.53 | 0.52 | 0.13 | 0.25 | 0.25 | 0.11 | 0.22 | 0.22 |
| Sat Flow, veh/h | 1774 | 3302 | 280 | 1774 | 3439 | 161 | 1774 | 1863 | 1570 | 1774 | 765 | 924 |
| Grp Volume(v), veh/h | 84 | 787 | 816 | 53 | 692 | 718 | 243 | 126 | 8 | 168 | 0 | 371 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1813 | 1774 | 1770 | 1830 | 1774 | 1863 | 1570 | 1774 | 0 | 1689 |
| Q Serve(g_s), s | 6.1 | 55.3 | 56.5 | 3.5 | 38.9 | 39.2 | 17.0 | 7.1 | 0.4 | 12.1 | 0.0 | 28.4 |
| Cycle Q Clear(g_c), s | 6.1 | 55.3 | 56.5 | 3.5 | 38.9 | 39.2 | 17.0 | 7.1 | 0.4 | 12.1 | 0.0 | 28.4 |
| Prop In Lane | 1.00 | | 0.15 | 1.00 | | 0.09 | 1.00 | | 1.00 | 1.00 | | 0.55 |
| Lane Grp Cap(c), veh/h | 105 | 830 | 851 | 202 | 945 | 977 | 232 | 457 | 385 | 193 | 0 | 377 |
| V/C Ratio(X) | 0.80 | 0.95 | 0.96 | 0.26 | 0.73 | 0.74 | 1.05 | 0.28 | 0.02 | 0.87 | 0.00 | 0.98 |
| Avail Cap(c_a), veh/h | 109 | 830 | 851 | 202 | 945 | 977 | 232 | 457 | 385 | 218 | 0 | 377 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.82 | 0.82 | 0.82 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 60.4 | 33.0 | 33.4 | 52.6 | 23.2 | 23.3 | 56.5 | 39.7 | 26.7 | 57.0 | 0.0 | 50.3 |
| Incr Delay (d2), s/veh | 29.8 | 20.9 | 22.4 | 0.2 | 4.1 | 4.0 | 72.1 | 0.5 | 0.0 | 25.3 | 0.0 | 42.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.9 | 31.7 | 33.4 | 1.7 | 19.9 | 20.9 | 13.0 | 3.7 | 0.2 | 7.3 | 0.0 | 17.7 |
| LnGrp Delay(d),s/veh | 90.2 | 53.9 | 55.8 | 52.8 | 27.3 | 27.3 | 128.6 | 40.2 | 26.7 | 82.3 | 0.0 | 92.4 |
| LnGrp LOS | F | D | E | D | C | C | F | D | C | F | | F |
| Approach Vol, veh/h | | 1687 | | | 1463 | | | 377 | | | 539 | |
| Approach Delay, s/veh | | 56.6 | | | 28.2 | | | 96.9 | | | 89.3 | |
| Approach LOS | | E | | | C | | | F | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 20.4 | 65.0 | 21.0 | 33.0 | 11.7 | 73.7 | 18.1 | 35.9 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 4.0 | 4.0 | 4.0 | 5.3 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 7.0 | * 60 | 17.0 | 29.0 | 8.0 | 58.7 | 16.0 | 30.0 |
| Max Q Clear Time (g_c+I1), s | 5.5 | 58.5 | 19.0 | 30.4 | 8.1 | 41.2 | 14.1 | 9.1 |
| Green Ext Time (p_c), s | 0.0 | 1.2 | 0.0 | 0.0 | 0.0 | 16.4 | 0.0 | 0.9 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 54.5 |
| HCM 2010 LOS | D |

Notes



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 63 | 1428 | 143 | 110 | 1277 | 50 | 81 | 20 | 60 | 20 | 10 | 31 |
| Future Volume (veh/h) | 63 | 1428 | 143 | 110 | 1277 | 50 | 81 | 20 | 60 | 20 | 10 | 31 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 66 | 1503 | 118 | 116 | 1344 | 39 | 85 | 21 | 26 | 21 | 11 | 17 |
| Adj No. of Lanes | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 498 | 2535 | 1134 | 159 | 1672 | 748 | 107 | 157 | 133 | 52 | 36 | 55 |
| Arrive On Green | 0.56 | 1.00 | 1.00 | 0.05 | 0.47 | 0.47 | 0.06 | 0.08 | 0.08 | 0.03 | 0.05 | 0.05 |
| Sat Flow, veh/h | 1774 | 3539 | 1583 | 3442 | 3539 | 1583 | 1774 | 1863 | 1583 | 1774 | 661 | 1022 |
| Grp Volume(v), veh/h | 66 | 1503 | 118 | 116 | 1344 | 39 | 85 | 21 | 26 | 21 | 0 | 28 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1583 | 1721 | 1770 | 1583 | 1774 | 1863 | 1583 | 1774 | 0 | 1682 |
| Q Serve(g_s), s | 2.3 | 0.0 | 0.0 | 4.3 | 42.0 | 1.4 | 6.1 | 1.4 | 2.0 | 1.5 | 0.0 | 2.1 |
| Cycle Q Clear(g_c), s | 2.3 | 0.0 | 0.0 | 4.3 | 42.0 | 1.4 | 6.1 | 1.4 | 2.0 | 1.5 | 0.0 | 2.1 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.61 |
| Lane Grp Cap(c), veh/h | 498 | 2535 | 1134 | 159 | 1672 | 748 | 107 | 157 | 133 | 52 | 0 | 91 |
| V/C Ratio(X) | 0.13 | 0.59 | 0.10 | 0.73 | 0.80 | 0.05 | 0.79 | 0.13 | 0.19 | 0.40 | 0.00 | 0.31 |
| Avail Cap(c_a), veh/h | 498 | 2535 | 1134 | 159 | 1672 | 748 | 123 | 543 | 462 | 97 | 0 | 466 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.31 | 0.31 | 0.31 | 0.73 | 0.73 | 0.73 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 21.0 | 0.0 | 0.0 | 61.2 | 29.2 | 11.6 | 60.3 | 55.1 | 55.4 | 62.0 | 0.0 | 59.2 |
| Incr Delay (d2), s/veh | 0.0 | 0.3 | 0.1 | 10.3 | 3.1 | 0.1 | 22.2 | 0.1 | 0.3 | 1.9 | 0.0 | 0.7 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.1 | 0.1 | 0.0 | 2.3 | 21.1 | 0.6 | 3.7 | 0.7 | 0.9 | 0.8 | 0.0 | 1.0 |
| LnGrp Delay(d),s/veh | 21.0 | 0.3 | 0.1 | 71.5 | 32.3 | 11.7 | 82.5 | 55.3 | 55.7 | 63.8 | 0.0 | 59.9 |
| LnGrp LOS | C | A | A | E | C | B | F | E | E | E | | E |
| Approach Vol, veh/h | | 1687 | | | 1499 | | | 132 | | | 49 | |
| Approach Delay, s/veh | | 1.1 | | | 34.8 | | | 72.9 | | | 61.6 | |
| Approach LOS | | A | | | C | | | E | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 10.0 | 97.1 | 11.9 | 11.0 | 41.7 | 65.4 | 7.8 | 15.1 |
| Change Period (Y+Rc), s | 4.1 | 5.3 | 4.1 | 4.0 | 5.3 | * 5.3 | 4.1 | * 4.1 |
| Max Green Setting (Gmax), s | 5.9 | 61.7 | 8.9 | 36.0 | 7.5 | * 60 | 7.0 | * 38 |
| Max Q Clear Time (g_c+I1), s | 6.3 | 2.0 | 8.1 | 4.1 | 4.3 | 44.0 | 3.5 | 4.0 |
| Green Ext Time (p_c), s | 0.0 | 53.2 | 0.0 | 0.1 | 0.0 | 14.9 | 0.0 | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 19.8 |
| HCM 2010 LOS | B |

Notes

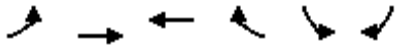


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 80 | 1330 | 49 | 450 | 1361 | 40 | 20 | 40 | 370 | 110 | 40 | 56 |
| Future Volume (veh/h) | 80 | 1330 | 49 | 450 | 1361 | 40 | 20 | 40 | 370 | 110 | 40 | 56 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 84 | 1400 | 44 | 474 | 1433 | 41 | 21 | 42 | 126 | 116 | 42 | 20 |
| Adj No. of Lanes | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 467 | 2110 | 943 | 424 | 1579 | 706 | 114 | 193 | 164 | 96 | 112 | 53 |
| Arrive On Green | 0.26 | 0.60 | 0.60 | 0.12 | 0.45 | 0.45 | 0.06 | 0.10 | 0.10 | 0.05 | 0.09 | 0.09 |
| Sat Flow, veh/h | 1774 | 3539 | 1583 | 3442 | 3539 | 1582 | 1774 | 1863 | 1579 | 1774 | 1193 | 568 |
| Grp Volume(v), veh/h | 84 | 1400 | 44 | 474 | 1433 | 41 | 21 | 42 | 126 | 116 | 0 | 62 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1583 | 1721 | 1770 | 1582 | 1774 | 1863 | 1579 | 1774 | 0 | 1761 |
| Q Serve(g_s), s | 4.8 | 34.4 | 1.0 | 16.0 | 49.0 | 1.4 | 1.5 | 2.7 | 10.1 | 7.0 | 0.0 | 4.3 |
| Cycle Q Clear(g_c), s | 4.8 | 34.4 | 1.0 | 16.0 | 49.0 | 1.4 | 1.5 | 2.7 | 10.1 | 7.0 | 0.0 | 4.3 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.32 |
| Lane Grp Cap(c), veh/h | 467 | 2110 | 943 | 424 | 1579 | 706 | 114 | 193 | 164 | 96 | 0 | 165 |
| V/C Ratio(X) | 0.18 | 0.66 | 0.05 | 1.12 | 0.91 | 0.06 | 0.18 | 0.22 | 0.77 | 1.21 | 0.00 | 0.38 |
| Avail Cap(c_a), veh/h | 467 | 2110 | 943 | 424 | 1579 | 706 | 114 | 602 | 510 | 96 | 0 | 569 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.75 | 0.75 | 0.75 | 0.39 | 0.39 | 0.39 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 37.1 | 17.5 | 4.5 | 57.0 | 33.5 | 11.7 | 57.6 | 53.4 | 56.7 | 61.5 | 0.0 | 55.3 |
| Incr Delay (d2), s/veh | 0.1 | 1.2 | 0.1 | 66.3 | 4.0 | 0.1 | 0.3 | 0.2 | 2.8 | 160.6 | 0.0 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.3 | 17.1 | 0.4 | 11.5 | 24.8 | 0.6 | 0.7 | 1.4 | 4.6 | 7.7 | 0.0 | 2.1 |
| LnGrp Delay(d),s/veh | 37.1 | 18.8 | 4.5 | 123.3 | 37.5 | 11.7 | 57.9 | 53.6 | 59.6 | 222.1 | 0.0 | 55.9 |
| LnGrp LOS | D | B | A | F | D | B | E | D | E | F | | E |
| Approach Vol, veh/h | | 1528 | | | 1948 | | | 189 | | | 178 | |
| Approach Delay, s/veh | | 19.4 | | | 57.8 | | | 58.1 | | | 164.2 | |
| Approach LOS | | B | | | E | | | E | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 20.0 | 81.5 | 12.3 | 16.2 | 39.5 | 62.0 | 11.0 | 17.5 |
| Change Period (Y+Rc), s | 4.0 | 5.3 | 4.0 | 4.0 | 5.3 | * 5.3 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 16.0 | 47.7 | 7.0 | 42.0 | 7.0 | * 57 | 7.0 | 42.0 |
| Max Q Clear Time (g_c+I1), s | 18.0 | 36.4 | 3.5 | 6.3 | 6.8 | 51.0 | 9.0 | 12.1 |
| Green Ext Time (p_c), s | 0.0 | 5.1 | 0.0 | 0.2 | 0.0 | 3.3 | 0.0 | 0.4 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 47.5 |
| HCM 2010 LOS | D |

Notes



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 340 | 1470 | 961 | 100 | 480 | 920 |
| Future Volume (veh/h) | 340 | 1470 | 961 | 100 | 480 | 920 |
| Number | 7 | 4 | 8 | 18 | 1 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 358 | 1547 | 1012 | 0 | 505 | 689 |
| Adj No. of Lanes | 2 | 2 | 3 | 1 | 2 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 428 | 1563 | 1444 | 450 | 1692 | 778 |
| Arrive On Green | 0.12 | 0.44 | 0.28 | 0.00 | 0.49 | 0.49 |
| Sat Flow, veh/h | 3442 | 3632 | 5253 | 1583 | 3442 | 1583 |
| Grp Volume(v), veh/h | 358 | 1547 | 1012 | 0 | 505 | 689 |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1770 | 1695 | 1583 | 1721 | 1583 |
| Q Serve(g_s), s | 12.2 | 52.0 | 21.3 | 0.0 | 10.5 | 47.0 |
| Cycle Q Clear(g_c), s | 12.2 | 52.0 | 21.3 | 0.0 | 10.5 | 47.0 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 428 | 1563 | 1444 | 450 | 1692 | 778 |
| V/C Ratio(X) | 0.84 | 0.99 | 0.70 | 0.00 | 0.30 | 0.89 |
| Avail Cap(c_a), veh/h | 470 | 1563 | 1444 | 450 | 1692 | 778 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.39 | 0.39 | 1.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 51.3 | 33.2 | 38.4 | 0.0 | 18.2 | 27.4 |
| Incr Delay (d2), s/veh | 4.9 | 11.8 | 1.5 | 0.0 | 0.1 | 11.9 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 6.1 | 27.9 | 10.2 | 0.0 | 5.0 | 37.0 |
| LnGrp Delay(d),s/veh | 56.2 | 45.1 | 39.9 | 0.0 | 18.3 | 39.3 |
| LnGrp LOS | E | D | D | | B | D |
| Approach Vol, veh/h | | 1905 | 1012 | | 1194 | |
| Approach Delay, s/veh | | 47.2 | 39.9 | | 30.4 | |
| Approach LOS | | D | D | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | | | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | | | 57.0 | | 63.0 | 18.9 | 38.1 |
| Change Period (Y+Rc), s | | | | 4.5 | | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | | | | 52.5 | | 58.5 | 15.9 | 32.1 |
| Max Q Clear Time (g_c+I1), s | | | | 54.0 | | 49.0 | 14.2 | 23.3 |
| Green Ext Time (p_c), s | | | | 0.0 | | 3.3 | 0.2 | 4.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 40.5 |
| HCM 2010 LOS | D |



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 1221 | 729 | 0 | 1685 | 146 | 30 |
| Future Volume (veh/h) | 1221 | 729 | 0 | 1685 | 146 | 30 |
| Number | 4 | 14 | 3 | 8 | 5 | 12 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 0 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 1285 | 767 | 0 | 1774 | 154 | 32 |
| Adj No. of Lanes | 2 | 1 | 0 | 2 | 2 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 0 | 2 | 2 | 2 |
| Cap, veh/h | 2086 | 933 | 0 | 2086 | 1183 | 544 |
| Arrive On Green | 0.59 | 0.59 | 0.00 | 0.59 | 0.34 | 0.34 |
| Sat Flow, veh/h | 3632 | 1583 | 0 | 3725 | 3442 | 1583 |
| Grp Volume(v), veh/h | 1285 | 767 | 0 | 1774 | 154 | 32 |
| Grp Sat Flow(s),veh/h/ln | 1770 | 1583 | 0 | 1770 | 1721 | 1583 |
| Q Serve(g_s), s | 28.1 | 46.3 | 0.0 | 49.5 | 3.7 | 1.6 |
| Cycle Q Clear(g_c), s | 28.1 | 46.3 | 0.0 | 49.5 | 3.7 | 1.6 |
| Prop In Lane | | 1.00 | 0.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 2086 | 933 | 0 | 2086 | 1183 | 544 |
| V/C Ratio(X) | 0.62 | 0.82 | 0.00 | 0.85 | 0.13 | 0.06 |
| Avail Cap(c_a), veh/h | 2654 | 1188 | 0 | 2654 | 1183 | 544 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.83 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 15.9 | 19.6 | 0.0 | 20.3 | 27.0 | 26.4 |
| Incr Delay (d2), s/veh | 0.3 | 3.8 | 0.0 | 1.9 | 0.2 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 13.7 | 21.0 | 0.0 | 24.4 | 1.8 | 0.7 |
| LnGrp Delay(d),s/veh | 16.2 | 23.4 | 0.0 | 22.2 | 27.3 | 26.6 |
| LnGrp LOS | B | C | | C | C | C |
| Approach Vol, veh/h | 2052 | | | 1774 | 186 | |
| Approach Delay, s/veh | 18.9 | | | 22.2 | 27.2 | |
| Approach LOS | B | | | C | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | | | 8 |
| Phs Duration (G+Y+Rc), s | | 45.3 | | 74.7 | | | | 74.7 |
| Change Period (Y+Rc), s | | 4.5 | | 4.5 | | | | 4.5 |
| Max Green Setting (Gmax), s | | 21.5 | | 89.5 | | | | 89.5 |
| Max Q Clear Time (g_c+I1), s | | 5.7 | | 48.3 | | | | 51.5 |
| Green Ext Time (p_c), s | | 0.5 | | 17.8 | | | | 18.7 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 20.7 |
| HCM 2010 LOS | C |



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 1211 | 40 | 20 | 1665 | 20 | 10 |
| Future Volume (veh/h) | 1211 | 40 | 20 | 1665 | 20 | 10 |
| Number | 2 | 12 | 1 | 6 | 7 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 1275 | 36 | 21 | 1753 | 21 | 2 |
| Adj No. of Lanes | 2 | 1 | 1 | 2 | 1 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 2987 | 1335 | 36 | 3168 | 77 | 69 |
| Arrive On Green | 0.84 | 0.84 | 0.02 | 0.90 | 0.04 | 0.04 |
| Sat Flow, veh/h | 3632 | 1582 | 1774 | 3632 | 1774 | 1583 |
| Grp Volume(v), veh/h | 1275 | 36 | 21 | 1753 | 21 | 2 |
| Grp Sat Flow(s),veh/h/ln | 1770 | 1582 | 1774 | 1770 | 1774 | 1583 |
| Q Serve(g_s), s | 11.4 | 0.5 | 1.5 | 13.4 | 1.5 | 0.2 |
| Cycle Q Clear(g_c), s | 11.4 | 0.5 | 1.5 | 13.4 | 1.5 | 0.2 |
| Prop In Lane | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 2987 | 1335 | 36 | 3168 | 77 | 69 |
| V/C Ratio(X) | 0.43 | 0.03 | 0.58 | 0.55 | 0.27 | 0.03 |
| Avail Cap(c_a), veh/h | 2987 | 1335 | 96 | 3168 | 177 | 158 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.86 | 0.86 | 0.37 | 0.37 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 2.5 | 1.6 | 63.1 | 1.4 | 60.2 | 59.6 |
| Incr Delay (d2), s/veh | 0.4 | 0.0 | 2.0 | 0.3 | 0.7 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 5.6 | 0.2 | 0.8 | 6.4 | 0.7 | 0.1 |
| LnGrp Delay(d),s/veh | 2.9 | 1.7 | 65.1 | 1.7 | 60.9 | 59.6 |
| LnGrp LOS | A | A | E | A | E | E |
| Approach Vol, veh/h | 1311 | | | 1774 | 23 | |
| Approach Delay, s/veh | 2.8 | | | 2.4 | 60.8 | |
| Approach LOS | A | | | A | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | | 6 | | |
| Phs Duration (G+Y+Rc), s | 6.7 | 113.7 | | 9.6 | | 120.4 | | |
| Change Period (Y+Rc), s | 4.0 | 5.3 | | 4.0 | | 5.3 | | |
| Max Green Setting (Gmax), s | 7.0 | 96.7 | | 13.0 | | 107.7 | | |
| Max Q Clear Time (g_c+I1), s | 3.5 | 13.4 | | 3.5 | | 15.4 | | |
| Green Ext Time (p_c), s | 0.0 | 6.9 | | 0.0 | | 12.3 | | |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 3.0 |
| HCM 2010 LOS | A |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 281 | 765 | 175 | 80 | 884 | 220 | 183 | 130 | 60 | 270 | 260 | 628 |
| Future Volume (veh/h) | 281 | 765 | 175 | 80 | 884 | 220 | 183 | 130 | 60 | 270 | 260 | 628 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 7 | 4 | 14 | 3 | 8 | 18 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 0.99 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 296 | 805 | 176 | 84 | 931 | 143 | 193 | 137 | 27 | 284 | 274 | 0 |
| Adj No. of Lanes | 2 | 2 | 0 | 1 | 2 | 1 | 1 | 2 | 1 | 2 | 2 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 318 | 1044 | 228 | 478 | 1941 | 857 | 217 | 312 | 138 | 494 | 403 | 180 |
| Arrive On Green | 0.18 | 0.72 | 0.70 | 0.27 | 0.55 | 0.55 | 0.12 | 0.09 | 0.09 | 0.14 | 0.11 | 0.00 |
| Sat Flow, veh/h | 3442 | 2889 | 632 | 1774 | 3539 | 1562 | 1774 | 3539 | 1573 | 3442 | 3539 | 1583 |
| Grp Volume(v), veh/h | 296 | 493 | 488 | 84 | 931 | 143 | 193 | 137 | 27 | 284 | 274 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1770 | 1751 | 1774 | 1770 | 1562 | 1774 | 1770 | 1573 | 1721 | 1770 | 1583 |
| Q Serve(g_s), s | 11.0 | 22.7 | 23.0 | 4.7 | 21.0 | 5.9 | 13.9 | 4.8 | 1.7 | 10.0 | 9.7 | 0.0 |
| Cycle Q Clear(g_c), s | 11.0 | 22.7 | 23.0 | 4.7 | 21.0 | 5.9 | 13.9 | 4.8 | 1.7 | 10.0 | 9.7 | 0.0 |
| Prop In Lane | 1.00 | | 0.36 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 318 | 640 | 633 | 478 | 1941 | 857 | 217 | 312 | 138 | 494 | 403 | 180 |
| V/C Ratio(X) | 0.93 | 0.77 | 0.77 | 0.18 | 0.48 | 0.17 | 0.89 | 0.44 | 0.20 | 0.57 | 0.68 | 0.00 |
| Avail Cap(c_a), veh/h | 318 | 640 | 633 | 478 | 1941 | 857 | 218 | 1171 | 520 | 494 | 1198 | 536 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.91 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 52.6 | 14.6 | 15.1 | 36.4 | 18.0 | 14.6 | 56.2 | 56.2 | 37.1 | 52.0 | 55.3 | 0.0 |
| Incr Delay (d2), s/veh | 31.3 | 8.0 | 8.1 | 0.2 | 0.9 | 0.4 | 32.7 | 1.0 | 0.7 | 1.6 | 2.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 6.6 | 12.1 | 12.1 | 2.3 | 10.4 | 2.6 | 8.8 | 2.4 | 0.8 | 4.9 | 4.8 | 0.0 |
| LnGrp Delay(d),s/veh | 83.9 | 22.7 | 23.2 | 36.6 | 18.8 | 15.0 | 88.9 | 57.2 | 37.8 | 53.6 | 57.4 | 0.0 |
| LnGrp LOS | F | C | C | D | B | B | F | E | D | D | E | |
| Approach Vol, veh/h | | 1277 | | | 1158 | | | 357 | | | 558 | |
| Approach Delay, s/veh | | 37.0 | | | 19.7 | | | 72.9 | | | 55.4 | |
| Approach LOS | | D | | | B | | | E | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 10.3 | 51.0 | 23.3 | 15.4 | 16.0 | 75.3 | 19.9 | 18.8 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 4.6 | * 4.6 | 4.0 | 5.3 | 4.0 | 4.6 |
| Max Green Setting (Gmax), s | 7.0 | * 46 | 17.0 | * 42 | 12.0 | 40.7 | 16.0 | 43.4 |
| Max Q Clear Time (g_c+I1), s | 6.7 | 25.0 | 12.0 | 6.8 | 13.0 | 23.0 | 15.9 | 11.7 |
| Green Ext Time (p_c), s | 0.0 | 7.1 | 0.4 | 0.9 | 0.0 | 7.3 | 0.0 | 1.8 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 37.9 |
| HCM 2010 LOS | D |

Notes



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 40 | 60 | 50 | 0 | 180 | 623 | 50 | 583 | 0 | 345 | 1025 | 60 |
| Future Volume (veh/h) | 40 | 60 | 50 | 0 | 180 | 623 | 50 | 583 | 0 | 345 | 1025 | 60 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1759 | 1759 | 1900 | 1759 | 1759 | 1759 | 1759 | 1759 | 1900 | 1759 | 1759 | 1900 |
| Adj Flow Rate, veh/h | 41 | 62 | 36 | 0 | 186 | 0 | 52 | 601 | 0 | 356 | 1057 | 0 |
| Adj No. of Lanes | 1 | 2 | 0 | 1 | 1 | 1 | 1 | 2 | 0 | 2 | 2 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Cap, veh/h | 139 | 670 | 361 | 2 | 314 | 202 | 101 | 1064 | 0 | 614 | 1495 | 0 |
| Arrive On Green | 0.08 | 0.32 | 0.28 | 0.00 | 0.18 | 0.00 | 0.06 | 0.32 | 0.00 | 0.19 | 0.45 | 0.00 |
| Sat Flow, veh/h | 1675 | 2100 | 1131 | 1675 | 1759 | 1495 | 1675 | 3431 | 0 | 3250 | 3431 | 0 |
| Grp Volume(v), veh/h | 41 | 48 | 50 | 0 | 186 | 0 | 52 | 601 | 0 | 356 | 1057 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1675 | 1671 | 1560 | 1675 | 1759 | 1495 | 1675 | 1671 | 0 | 1625 | 1671 | 0 |
| Q Serve(g_s), s | 1.6 | 1.4 | 1.6 | 0.0 | 6.7 | 0.0 | 2.1 | 10.3 | 0.0 | 6.9 | 17.7 | 0.0 |
| Cycle Q Clear(g_c), s | 1.6 | 1.4 | 1.6 | 0.0 | 6.7 | 0.0 | 2.1 | 10.3 | 0.0 | 6.9 | 17.7 | 0.0 |
| Prop In Lane | 1.00 | | 0.72 | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 139 | 533 | 498 | 2 | 314 | 202 | 101 | 1064 | 0 | 614 | 1495 | 0 |
| V/C Ratio(X) | 0.30 | 0.09 | 0.10 | 0.00 | 0.59 | 0.00 | 0.52 | 0.56 | 0.00 | 0.58 | 0.71 | 0.00 |
| Avail Cap(c_a), veh/h | 363 | 1184 | 1105 | 194 | 1069 | 843 | 363 | 3819 | 0 | 1786 | 4931 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 29.8 | 16.5 | 17.3 | 0.0 | 26.1 | 0.0 | 31.5 | 19.6 | 0.0 | 25.5 | 15.5 | 0.0 |
| Incr Delay (d2), s/veh | 1.2 | 0.1 | 0.1 | 0.0 | 1.8 | 0.0 | 4.0 | 0.5 | 0.0 | 0.9 | 0.6 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.8 | 0.7 | 0.7 | 0.0 | 3.4 | 0.0 | 1.1 | 4.8 | 0.0 | 3.1 | 8.2 | 0.0 |
| LnGrp Delay(d),s/veh | 31.0 | 16.6 | 17.4 | 0.0 | 27.9 | 0.0 | 35.6 | 20.1 | 0.0 | 26.4 | 16.1 | 0.0 |
| LnGrp LOS | C | B | B | | C | | D | C | | C | B | |
| Approach Vol, veh/h | | 139 | | | 186 | | | 653 | | | 1413 | |
| Approach Delay, s/veh | | 21.1 | | | 27.9 | | | 21.3 | | | 18.7 | |
| Approach LOS | | C | | | C | | | C | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 17.1 | 26.0 | 0.0 | 26.1 | 8.2 | 34.9 | 9.7 | 16.3 |
| Change Period (Y+Rc), s | 7.0 | 7.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 | 7.0 |
| Max Green Setting (Gmax), s | 35.0 | 76.0 | 5.0 | 46.0 | 14.0 | 99.0 | 12.0 | 39.0 |
| Max Q Clear Time (g_c+I1), s | 19.7 | 12.3 | 0.0 | 3.6 | 4.1 | 19.7 | 3.6 | 8.7 |
| Green Ext Time (p_c), s | 1.2 | 3.9 | 0.0 | 0.5 | 0.0 | 8.2 | 0.0 | 0.9 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 20.3 |
| HCM 2010 LOS | C |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 10 | 10 | 0 | 550 | 10 | 10 | 10 | 613 | 180 | 10 | 1055 | 10 |
| Future Volume (veh/h) | 10 | 10 | 0 | 550 | 10 | 10 | 10 | 613 | 180 | 10 | 1055 | 10 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 1 | 6 | 16 | 5 | 2 | 12 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1845 | 1845 | 1900 | 1845 | 1845 | 1900 | 1845 | 1845 | 1845 | 1845 | 1845 | 1900 |
| Adj Flow Rate, veh/h | 10 | 10 | 0 | 561 | 10 | 9 | 10 | 626 | 151 | 10 | 1077 | 9 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Cap, veh/h | 47 | 58 | 0 | 629 | 325 | 293 | 47 | 733 | 1184 | 47 | 1415 | 12 |
| Arrive On Green | 0.03 | 0.03 | 0.00 | 0.36 | 0.36 | 0.35 | 0.03 | 0.40 | 0.40 | 0.03 | 0.40 | 0.39 |
| Sat Flow, veh/h | 1757 | 1845 | 0 | 1757 | 896 | 806 | 1757 | 1845 | 1568 | 1757 | 3562 | 30 |
| Grp Volume(v), veh/h | 10 | 10 | 0 | 561 | 0 | 19 | 10 | 626 | 151 | 10 | 530 | 556 |
| Grp Sat Flow(s),veh/h/ln | 1757 | 1845 | 0 | 1757 | 0 | 1702 | 1757 | 1845 | 1568 | 1757 | 1752 | 1839 |
| Q Serve(g_s), s | 0.5 | 0.5 | 0.0 | 25.8 | 0.0 | 0.6 | 0.5 | 26.5 | 2.2 | 0.5 | 22.4 | 22.4 |
| Cycle Q Clear(g_c), s | 0.5 | 0.5 | 0.0 | 25.8 | 0.0 | 0.6 | 0.5 | 26.5 | 2.2 | 0.5 | 22.4 | 22.4 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 0.47 | 1.00 | | 1.00 | 1.00 | | 0.02 |
| Lane Grp Cap(c), veh/h | 47 | 58 | 0 | 629 | 0 | 618 | 47 | 733 | 1184 | 47 | 696 | 730 |
| V/C Ratio(X) | 0.21 | 0.17 | 0.00 | 0.89 | 0.00 | 0.03 | 0.21 | 0.85 | 0.13 | 0.21 | 0.76 | 0.76 |
| Avail Cap(c_a), veh/h | 144 | 216 | 0 | 1910 | 0 | 1910 | 144 | 2134 | 2375 | 144 | 2028 | 2128 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 40.8 | 40.4 | 0.0 | 25.9 | 0.0 | 17.7 | 40.8 | 23.5 | 2.8 | 40.8 | 22.3 | 22.3 |
| Incr Delay (d2), s/veh | 2.3 | 1.4 | 0.0 | 4.7 | 0.0 | 0.0 | 2.3 | 3.0 | 0.0 | 2.3 | 1.8 | 1.7 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.3 | 0.3 | 0.0 | 13.3 | 0.0 | 0.3 | 0.3 | 14.0 | 1.0 | 0.3 | 11.1 | 11.6 |
| LnGrp Delay(d),s/veh | 43.0 | 41.7 | 0.0 | 30.6 | 0.0 | 17.7 | 43.0 | 26.5 | 2.9 | 43.0 | 24.0 | 24.0 |
| LnGrp LOS | D | D | | C | | B | D | C | A | D | C | C |
| Approach Vol, veh/h | | 20 | | | 580 | | | 787 | | | 1096 | |
| Approach Delay, s/veh | | 42.4 | | | 30.2 | | | 22.2 | | | 24.2 | |
| Approach LOS | | D | | | C | | | C | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 6.3 | 38.0 | 34.6 | 6.7 | 6.3 | 38.0 | 6.3 | 35.0 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 6.0 | 98.0 | 92.0 | 9.0 | 6.0 | 98.0 | 6.0 | 95.0 |
| Max Q Clear Time (g_c+I1), s | 2.5 | 24.4 | 27.8 | 2.5 | 2.5 | 28.5 | 2.5 | 2.6 |
| Green Ext Time (p_c), s | 0.0 | 7.3 | 1.8 | 0.0 | 0.0 | 4.5 | 0.0 | 0.1 |

| Intersection Summary | | |
|---|---|---|
| HCM 2010 Ctrl Delay | | 25.1 |
| HCM 2010 LOS | | C |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 10 | 30 | 30 | 280 | 120 | 380 | 30 | 413 | 260 | 270 | 1325 | 10 |
| Future Volume (veh/h) | 10 | 30 | 30 | 280 | 120 | 380 | 30 | 413 | 260 | 270 | 1325 | 10 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1827 | 1827 | 1900 | 1827 | 1827 | 1827 | 1827 | 1827 | 1827 | 1827 | 1827 | 1900 |
| Adj Flow Rate, veh/h | 10 | 31 | 31 | 206 | 239 | 392 | 31 | 426 | 0 | 278 | 1366 | 0 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Cap, veh/h | 48 | 143 | 143 | 268 | 544 | 462 | 70 | 1160 | 744 | 341 | 1700 | 0 |
| Arrive On Green | 0.03 | 0.17 | 0.15 | 0.15 | 0.30 | 0.30 | 0.04 | 0.33 | 0.00 | 0.20 | 0.49 | 0.00 |
| Sat Flow, veh/h | 1740 | 839 | 839 | 1740 | 1827 | 1553 | 1740 | 3471 | 1553 | 1740 | 3563 | 0 |
| Grp Volume(v), veh/h | 10 | 0 | 62 | 206 | 239 | 392 | 31 | 426 | 0 | 278 | 1366 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1740 | 0 | 1679 | 1740 | 1827 | 1553 | 1740 | 1736 | 1553 | 1740 | 1736 | 0 |
| Q Serve(g_s), s | 0.6 | 0.0 | 3.5 | 12.6 | 11.7 | 26.2 | 1.9 | 10.3 | 0.0 | 16.9 | 36.6 | 0.0 |
| Cycle Q Clear(g_c), s | 0.6 | 0.0 | 3.5 | 12.6 | 11.7 | 26.2 | 1.9 | 10.3 | 0.0 | 16.9 | 36.6 | 0.0 |
| Prop In Lane | 1.00 | | 0.50 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 48 | 0 | 287 | 268 | 544 | 462 | 70 | 1160 | 744 | 341 | 1700 | 0 |
| V/C Ratio(X) | 0.21 | 0.00 | 0.22 | 0.77 | 0.44 | 0.85 | 0.44 | 0.37 | 0.00 | 0.82 | 0.80 | 0.00 |
| Avail Cap(c_a), veh/h | 110 | 0 | 668 | 661 | 1305 | 1109 | 173 | 2197 | 1208 | 834 | 3515 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 52.6 | 0.0 | 39.9 | 44.9 | 31.4 | 36.5 | 51.9 | 27.9 | 0.0 | 42.5 | 23.7 | 0.0 |
| Incr Delay (d2), s/veh | 2.1 | 0.0 | 0.4 | 4.6 | 0.6 | 4.4 | 4.3 | 0.2 | 0.0 | 4.8 | 0.9 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.3 | 0.0 | 1.7 | 6.4 | 6.0 | 11.7 | 1.0 | 4.9 | 0.0 | 8.6 | 17.7 | 0.0 |
| LnGrp Delay(d),s/veh | 54.7 | 0.0 | 40.3 | 49.4 | 31.9 | 40.9 | 56.2 | 28.1 | 0.0 | 47.3 | 24.7 | 0.0 |
| LnGrp LOS | D | | D | D | C | D | E | C | | D | C | |
| Approach Vol, veh/h | | 72 | | | 837 | | | 457 | | | 1644 | |
| Approach Delay, s/veh | | 42.3 | | | 40.4 | | | 30.0 | | | 28.5 | |
| Approach LOS | | D | | | D | | | C | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 15.7 | 41.0 | 21.1 | 22.9 | 8.5 | 58.2 | 7.1 | 36.9 |
| Change Period (Y+Rc), s | 6.0 | 7.0 | 6.0 | 6.0 | 6.0 | 7.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 9.0 | 67.0 | 40.0 | 42.0 | 9.0 | 109.0 | 5.0 | 77.0 |
| Max Q Clear Time (g_c+I1), s | 8.9 | 12.3 | 14.6 | 5.5 | 3.9 | 38.6 | 2.6 | 28.2 |
| Green Ext Time (p_c), s | 0.8 | 2.6 | 0.5 | 0.3 | 0.0 | 12.5 | 0.0 | 2.7 |

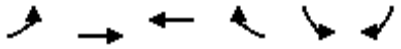
| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 32.4 |
| HCM 2010 LOS | C |

Notes

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 179 | 310 | 74 | 185 | 730 | 190 | 82 | 142 | 338 | 120 | 99 | 164 |
| Future Volume (veh/h) | 179 | 310 | 74 | 185 | 730 | 190 | 82 | 142 | 338 | 120 | 99 | 164 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 188 | 326 | 78 | 195 | 768 | 200 | 86 | 149 | 356 | 126 | 104 | 173 |
| Adj No. of Lanes | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 222 | 901 | 213 | 197 | 841 | 219 | 115 | 619 | 553 | 159 | 662 | 592 |
| Arrive On Green | 0.13 | 0.32 | 0.31 | 0.11 | 0.30 | 0.30 | 0.06 | 0.35 | 0.35 | 0.09 | 0.37 | 0.37 |
| Sat Flow, veh/h | 1774 | 2843 | 671 | 1774 | 2780 | 724 | 1774 | 1770 | 1583 | 1774 | 1770 | 1583 |
| Grp Volume(v), veh/h | 188 | 201 | 203 | 195 | 489 | 479 | 86 | 149 | 356 | 126 | 104 | 173 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1744 | 1774 | 1770 | 1735 | 1774 | 1770 | 1583 | 1774 | 1770 | 1583 |
| Q Serve(g_s), s | 12.4 | 10.5 | 10.8 | 13.2 | 31.9 | 31.9 | 5.7 | 7.2 | 22.7 | 8.4 | 4.7 | 9.3 |
| Cycle Q Clear(g_c), s | 12.4 | 10.5 | 10.8 | 13.2 | 31.9 | 31.9 | 5.7 | 7.2 | 22.7 | 8.4 | 4.7 | 9.3 |
| Prop In Lane | 1.00 | | 0.38 | 1.00 | | 0.42 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 222 | 561 | 553 | 197 | 535 | 525 | 115 | 619 | 553 | 159 | 662 | 592 |
| V/C Ratio(X) | 0.85 | 0.36 | 0.37 | 0.99 | 0.91 | 0.91 | 0.75 | 0.24 | 0.64 | 0.79 | 0.16 | 0.29 |
| Avail Cap(c_a), veh/h | 251 | 615 | 606 | 197 | 560 | 549 | 136 | 619 | 553 | 179 | 662 | 592 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.54 | 0.54 | 0.54 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 51.4 | 31.6 | 31.8 | 53.3 | 40.3 | 40.4 | 55.1 | 27.7 | 33.0 | 53.6 | 25.0 | 26.6 |
| Incr Delay (d2), s/veh | 20.9 | 0.4 | 0.4 | 44.9 | 11.7 | 11.9 | 17.0 | 0.9 | 5.7 | 19.4 | 0.5 | 1.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 7.4 | 5.2 | 5.3 | 8.9 | 17.4 | 17.0 | 3.3 | 3.7 | 10.8 | 5.0 | 2.4 | 4.3 |
| LnGrp Delay(d),s/veh | 72.2 | 32.0 | 32.2 | 98.2 | 52.0 | 52.3 | 72.1 | 28.6 | 38.6 | 73.0 | 25.5 | 27.8 |
| LnGrp LOS | E | C | C | F | D | D | E | C | D | E | C | C |
| Approach Vol, veh/h | | 592 | | | 1163 | | | 591 | | | 403 | |
| Approach Delay, s/veh | | 44.8 | | | 59.9 | | | 41.0 | | | 41.3 | |
| Approach LOS | | D | | | E | | | D | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 14.7 | 45.9 | 17.3 | 42.0 | 11.8 | 48.9 | 19.0 | 40.3 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 11.6 | 36.4 | 12.8 | 41.2 | 8.7 | 39.3 | 16.5 | 37.5 |
| Max Q Clear Time (g_c+I1), s | 10.4 | 24.7 | 15.2 | 12.8 | 7.7 | 11.3 | 14.4 | 33.9 |
| Green Ext Time (p_c), s | 0.0 | 2.3 | 0.0 | 2.2 | 0.0 | 1.5 | 0.1 | 1.9 |

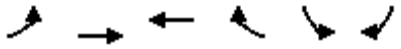
| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 49.9 |
| HCM 2010 LOS | D |



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 171 | 597 | 945 | 660 | 1000 | 160 |
| Future Volume (veh/h) | 171 | 597 | 945 | 660 | 1000 | 160 |
| Number | 7 | 4 | 8 | 18 | 1 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 180 | 628 | 995 | 695 | 1053 | 168 |
| Adj No. of Lanes | 1 | 2 | 2 | 1 | 2 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 219 | 1746 | 1181 | 1216 | 1495 | 688 |
| Arrive On Green | 0.12 | 0.49 | 0.33 | 0.33 | 0.43 | 0.43 |
| Sat Flow, veh/h | 1774 | 3632 | 3632 | 1583 | 3442 | 1583 |
| Grp Volume(v), veh/h | 180 | 628 | 995 | 695 | 1053 | 168 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1770 | 1583 | 1721 | 1583 |
| Q Serve(g_s), s | 10.9 | 12.1 | 28.8 | 20.0 | 27.6 | 7.4 |
| Cycle Q Clear(g_c), s | 10.9 | 12.1 | 28.8 | 20.0 | 27.6 | 7.4 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 219 | 1746 | 1181 | 1216 | 1495 | 688 |
| V/C Ratio(X) | 0.82 | 0.36 | 0.84 | 0.57 | 0.70 | 0.24 |
| Avail Cap(c_a), veh/h | 321 | 2050 | 1281 | 1261 | 1495 | 688 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 47.3 | 17.3 | 34.1 | 5.3 | 25.5 | 19.8 |
| Incr Delay (d2), s/veh | 10.5 | 0.1 | 4.9 | 0.6 | 2.8 | 0.8 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 6.0 | 5.9 | 14.9 | 21.2 | 13.6 | 8.2 |
| LnGrp Delay(d),s/veh | 57.8 | 17.4 | 39.1 | 5.9 | 28.3 | 20.6 |
| LnGrp LOS | E | B | D | A | C | C |
| Approach Vol, veh/h | | 808 | 1690 | | 1221 | |
| Approach Delay, s/veh | | 26.4 | 25.4 | | 27.2 | |
| Approach LOS | | C | C | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | | | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | | | 58.5 | | 52.0 | 17.6 | 40.9 |
| Change Period (Y+Rc), s | | | | 4.5 | | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | | | | 63.5 | | 47.5 | 19.5 | 39.5 |
| Max Q Clear Time (g_c+I1), s | | | | 14.1 | | 29.6 | 12.9 | 30.8 |
| Green Ext Time (p_c), s | | | | 4.4 | | 4.6 | 0.2 | 5.6 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 26.2 |
| HCM 2010 LOS | C |



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 550 | 1027 | 954 | 280 | 1560 | 651 |
| Future Volume (veh/h) | 550 | 1027 | 954 | 280 | 1560 | 651 |
| Number | 5 | 2 | 6 | 16 | 3 | 18 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 561 | 1048 | 973 | 286 | 1592 | 664 |
| Adj No. of Lanes | 1 | 3 | 2 | 1 | 2 | 1 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 427 | 2950 | 1104 | 494 | 1255 | 578 |
| Arrive On Green | 0.24 | 0.58 | 0.31 | 0.31 | 0.36 | 0.36 |
| Sat Flow, veh/h | 1774 | 5253 | 3632 | 1583 | 3442 | 1583 |
| Grp Volume(v), veh/h | 561 | 1048 | 973 | 286 | 1592 | 664 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1695 | 1770 | 1583 | 1721 | 1583 |
| Q Serve(g_s), s | 35.0 | 15.8 | 37.9 | 22.0 | 53.0 | 53.0 |
| Cycle Q Clear(g_c), s | 35.0 | 15.8 | 37.9 | 22.0 | 53.0 | 53.0 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 427 | 2950 | 1104 | 494 | 1255 | 578 |
| V/C Ratio(X) | 1.31 | 0.36 | 0.88 | 0.58 | 1.27 | 1.15 |
| Avail Cap(c_a), veh/h | 427 | 3115 | 1218 | 545 | 1255 | 578 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 55.2 | 16.1 | 47.5 | 42.0 | 46.2 | 46.2 |
| Incr Delay (d2), s/veh | 156.7 | 0.1 | 7.3 | 1.3 | 127.1 | 86.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 35.7 | 7.4 | 19.6 | 9.8 | 47.3 | 36.9 |
| LnGrp Delay(d),s/veh | 211.8 | 16.2 | 54.8 | 43.3 | 173.3 | 132.3 |
| LnGrp LOS | F | B | D | D | F | F |
| Approach Vol, veh/h | | 1609 | 1259 | | 2256 | |
| Approach Delay, s/veh | | 84.4 | 52.2 | | 161.2 | |
| Approach LOS | | F | D | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 88.3 | | | 39.0 | 49.3 | | 57.0 |
| Change Period (Y+Rc), s | | 4.5 | | | 4.5 | 4.5 | | 4.5 |
| Max Green Setting (Gmax), s | | 88.5 | | | 34.5 | 49.5 | | 52.5 |
| Max Q Clear Time (g_c+I1), s | | 17.8 | | | 37.0 | 39.9 | | 55.0 |
| Green Ext Time (p_c), s | | 8.6 | | | 0.0 | 4.9 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 110.3 |
| HCM 2010 LOS | F |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 771 | 1836 | 0 | 0 | 534 | 1120 | 700 | 0 | 410 | 0 | 0 | 0 |
| Future Volume (veh/h) | 771 | 1836 | 0 | 0 | 534 | 1120 | 700 | 0 | 410 | 0 | 0 | 0 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 7 | 4 | 14 | | | |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | | | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 0 | 0 | 1863 | 1863 | 1863 | 1863 | 1863 | | | |
| Adj Flow Rate, veh/h | 812 | 1933 | 0 | 0 | 562 | 1179 | 737 | 0 | 432 | | | |
| Adj No. of Lanes | 2 | 3 | 0 | 0 | 1 | 2 | 2 | 0 | 1 | | | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | | | |
| Percent Heavy Veh, % | 2 | 2 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | | | |
| Cap, veh/h | 854 | 3287 | 0 | 0 | 691 | 1175 | 1062 | 0 | 474 | | | |
| Arrive On Green | 0.25 | 0.65 | 0.00 | 0.00 | 0.37 | 0.37 | 0.30 | 0.00 | 0.30 | | | |
| Sat Flow, veh/h | 3442 | 5253 | 0 | 0 | 1863 | 3167 | 3548 | 0 | 1583 | | | |
| Grp Volume(v), veh/h | 812 | 1933 | 0 | 0 | 562 | 1179 | 737 | 0 | 432 | | | |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1695 | 0 | 0 | 1863 | 1583 | 1774 | 0 | 1583 | | | |
| Q Serve(g_s), s | 34.2 | 31.9 | 0.0 | 0.0 | 40.0 | 54.6 | 27.0 | 0.0 | 38.7 | | | |
| Cycle Q Clear(g_c), s | 34.2 | 31.9 | 0.0 | 0.0 | 40.0 | 54.6 | 27.0 | 0.0 | 38.7 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 1.00 | 1.00 | | 1.00 | | | |
| Lane Grp Cap(c), veh/h | 854 | 3287 | 0 | 0 | 691 | 1175 | 1062 | 0 | 474 | | | |
| V/C Ratio(X) | 0.95 | 0.59 | 0.00 | 0.00 | 0.81 | 1.00 | 0.69 | 0.00 | 0.91 | | | |
| Avail Cap(c_a), veh/h | 866 | 3305 | 0 | 0 | 691 | 1175 | 1119 | 0 | 499 | | | |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | | | |
| Uniform Delay (d), s/veh | 54.4 | 14.8 | 0.0 | 0.0 | 41.6 | 46.2 | 45.6 | 0.0 | 49.7 | | | |
| Incr Delay (d2), s/veh | 19.6 | 0.3 | 0.0 | 0.0 | 7.3 | 27.0 | 1.8 | 0.0 | 20.5 | | | |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| %ile BackOfQ(50%),veh/ln | 18.6 | 14.9 | 0.0 | 0.0 | 22.0 | 28.2 | 13.5 | 0.0 | 32.7 | | | |
| LnGrp Delay(d),s/veh | 74.0 | 15.1 | 0.0 | 0.0 | 49.0 | 73.2 | 47.4 | 0.0 | 70.1 | | | |
| LnGrp LOS | E | B | | | D | F | D | | E | | | |
| Approach Vol, veh/h | | 2745 | | | 1741 | | | 1169 | | | | |
| Approach Delay, s/veh | | 32.5 | | | 65.4 | | | 55.8 | | | | |
| Approach LOS | | C | | | E | | | E | | | | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | |
| Phs Duration (G+Y+Rc), s | | 99.1 | | 48.0 | 40.5 | 58.6 | | |
| Change Period (Y+Rc), s | | 5.3 | | 5.3 | 4.0 | 5.3 | | |
| Max Green Setting (Gmax), s | | 94.3 | | 45.1 | 37.0 | 53.3 | | |
| Max Q Clear Time (g_c+I1), s | | 33.9 | | 40.7 | 36.2 | 56.6 | | |
| Green Ext Time (p_c), s | | 23.9 | | 2.0 | 0.3 | 0.0 | | |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 47.5 |
| HCM 2010 LOS | D |

Notes

| Intersection | |
|---|---|
| Int Delay, s/veh | 118.8 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 66 | 564 | 110 | 108 | 560 | 60 |
| Future Vol, veh/h | 66 | 564 | 110 | 108 | 560 | 60 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 69 | 594 | 116 | 114 | 589 | 63 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1414 | 173 | 0 | 0 | 230 | 0 |
| Stage 1 | 173 | - | - | - | - | - |
| Stage 2 | 1241 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 152 | 871 | - | - | 1338 | - |
| Stage 1 | 857 | - | - | - | - | - |
| Stage 2 | 273 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 83 | 871 | - | - | 1338 | - |
| Mov Cap-2 Maneuver | 83 | - | - | - | - | - |
| Stage 1 | 466 | - | - | - | - | - |
| Stage 2 | 273 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 268.2 | 0 | 8.8 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 437 | 1338 | - |
| HCM Lane V/C Ratio | - | - | 1.518 | 0.441 | - |
| HCM Control Delay (s) | - | - | 268.2 | 9.8 | 0 |
| HCM Lane LOS | - | - | F | A | A |
| HCM 95th %tile Q(veh) | - | - | 35.3 | 2.3 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 40 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 90 | 578 | 612 | 76 | 163 | 18 |
| Future Vol, veh/h | 90 | 578 | 612 | 76 | 163 | 18 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 95 | 608 | 644 | 80 | 172 | 19 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 724 | 0 | - | 0 | 1482 | 684 |
| Stage 1 | - | - | - | - | 684 | - |
| Stage 2 | - | - | - | - | 798 | - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | 879 | - | - | - | ~ 138 | 449 |
| Stage 1 | - | - | - | - | 501 | - |
| Stage 2 | - | - | - | - | 443 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 879 | - | - | - | ~ 116 | 449 |
| Mov Cap-2 Maneuver | - | - | - | - | ~ 116 | - |
| Stage 1 | - | - | - | - | 419 | - |
| Stage 2 | - | - | - | - | 443 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 1.3 | 0 | $ 335.2 |
| HCM LOS | | | F |

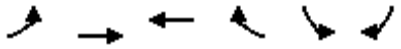
| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 879 | - | - | - | 125 |
| HCM Lane V/C Ratio | 0.108 | - | - | - | 1.524 |
| HCM Control Delay (s) | 9.6 | 0 | - | - | $ 335.2 |
| HCM Lane LOS | A | A | - | - | F |
| HCM 95th %tile Q(veh) | 0.4 | - | - | - | 13.5 |

| Notes | | | |
|---|---|---|---|
| ~: Volume exceeds capacity | $: Delay exceeds 300s | +: Computation Not Defined | *: All major volume in platoon |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 621 | 120 | 100 | 488 | 100 | 200 |
| Future Volume (veh/h) | 621 | 120 | 100 | 488 | 100 | 200 |
| Number | 4 | 14 | 3 | 8 | 5 | 12 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 654 | 126 | 105 | 514 | 105 | 211 |
| Adj No. of Lanes | 2 | 0 | 1 | 2 | 1 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 1109 | 213 | 182 | 2071 | 353 | 477 |
| Arrive On Green | 0.37 | 0.36 | 0.10 | 0.59 | 0.20 | 0.20 |
| Sat Flow, veh/h | 3055 | 570 | 1774 | 3632 | 1774 | 1583 |
| Grp Volume(v), veh/h | 390 | 390 | 105 | 514 | 105 | 211 |
| Grp Sat Flow(s),veh/h/ln | 1770 | 1762 | 1774 | 1770 | 1774 | 1583 |
| Q Serve(g_s), s | 6.6 | 6.6 | 2.1 | 2.6 | 1.9 | 4.0 |
| Cycle Q Clear(g_c), s | 6.6 | 6.6 | 2.1 | 2.6 | 1.9 | 4.0 |
| Prop In Lane | | 0.32 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 662 | 660 | 182 | 2071 | 353 | 477 |
| V/C Ratio(X) | 0.59 | 0.59 | 0.58 | 0.25 | 0.30 | 0.44 |
| Avail Cap(c_a), veh/h | 1769 | 1762 | 767 | 5451 | 1198 | 1232 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 9.3 | 9.4 | 15.8 | 3.7 | 12.6 | 10.4 |
| Incr Delay (d2), s/veh | 0.8 | 0.8 | 2.9 | 0.1 | 0.5 | 0.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.3 | 3.3 | 1.2 | 1.2 | 0.9 | 1.8 |
| LnGrp Delay(d),s/veh | 10.1 | 10.2 | 18.7 | 3.8 | 13.1 | 11.1 |
| LnGrp LOS | B | B | B | A | B | B |
| Approach Vol, veh/h | 780 | | | 619 | 316 | |
| Approach Delay, s/veh | 10.2 | | | 6.3 | 11.7 | |
| Approach LOS | B | | | A | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | 3 | 4 | | | | 8 |
| Phs Duration (G+Y+Rc), s | | 11.4 | 7.8 | 17.9 | | | | 25.7 |
| Change Period (Y+Rc), s | | 4.5 | 4.5 | 4.5 | | | | 4.5 |
| Max Green Setting (Gmax), s | | 24.5 | 15.5 | 36.5 | | | | 56.5 |
| Max Q Clear Time (g_c+I1), s | | 6.0 | 4.1 | 8.6 | | | | 4.6 |
| Green Ext Time (p_c), s | | 0.9 | 0.2 | 4.8 | | | | 3.3 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 9.1 |
| HCM 2010 LOS | A |



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 78 | 744 | 576 | 327 | 182 | 12 |
| Future Volume (veh/h) | 78 | 744 | 576 | 327 | 182 | 12 |
| Number | 7 | 4 | 8 | 18 | 1 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 82 | 783 | 606 | 220 | 192 | -2 |
| Adj No. of Lanes | 1 | 2 | 2 | 1 | 1 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 277 | 2217 | 1263 | 565 | 261 | 233 |
| Arrive On Green | 0.16 | 0.63 | 0.36 | 0.36 | 0.15 | 0.00 |
| Sat Flow, veh/h | 1774 | 3632 | 3632 | 1583 | 1774 | 1583 |
| Grp Volume(v), veh/h | 82 | 783 | 606 | 220 | 192 | -2 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1770 | 1583 | 1774 | 1583 |
| Q Serve(g_s), s | 1.4 | 3.7 | 4.7 | 3.7 | 3.7 | 0.0 |
| Cycle Q Clear(g_c), s | 1.4 | 3.7 | 4.7 | 3.7 | 3.7 | 0.0 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 277 | 2217 | 1263 | 565 | 261 | 233 |
| V/C Ratio(X) | 0.30 | 0.35 | 0.48 | 0.39 | 0.74 | -0.01 |
| Avail Cap(c_a), veh/h | 855 | 5820 | 3713 | 1661 | 1207 | 1077 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 13.2 | 3.2 | 8.8 | 8.5 | 14.4 | 0.0 |
| Incr Delay (d2), s/veh | 0.6 | 0.1 | 0.3 | 0.4 | 4.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.8 | 1.8 | 2.3 | 1.7 | 2.1 | 0.0 |
| LnGrp Delay(d),s/veh | 13.8 | 3.3 | 9.1 | 8.9 | 18.4 | 0.0 |
| LnGrp LOS | B | A | A | A | B | |
| Approach Vol, veh/h | | 865 | 826 | | 190 | |
| Approach Delay, s/veh | | 4.3 | 9.0 | | 18.6 | |
| Approach LOS | | A | A | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | | | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | | | 26.1 | | 9.2 | 9.5 | 16.6 |
| Change Period (Y+Rc), s | | | | 5.3 | | 4.0 | 4.5 | 5.3 |
| Max Green Setting (Gmax), s | | | | 56.7 | | 24.0 | 16.5 | 35.7 |
| Max Q Clear Time (g_c+I1), s | | | | 5.7 | | 5.7 | 3.4 | 6.7 |
| Green Ext Time (p_c), s | | | | 5.8 | | 0.5 | 0.1 | 4.6 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 7.8 |
| HCM 2010 LOS | A |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 75 | 821 | 30 | 300 | 795 | 250 | 50 | 310 | 520 | 190 | 120 | 58 |
| Future Volume (veh/h) | 75 | 821 | 30 | 300 | 795 | 250 | 50 | 310 | 520 | 190 | 120 | 58 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.95 | 1.00 | | 0.49 | 1.00 | | 0.77 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 79 | 864 | -17 | 316 | 837 | 256 | 53 | 326 | 470 | 200 | 126 | 60 |
| Adj No. of Lanes | 1 | 2 | 0 | 2 | 2 | 0 | 1 | 1 | 2 | 1 | 1 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 100 | 1188 | 0 | 385 | 1030 | 315 | 68 | 530 | 697 | 238 | 409 | 195 |
| Arrive On Green | 0.06 | 0.34 | 0.00 | 0.11 | 0.39 | 0.38 | 0.04 | 0.28 | 0.28 | 0.13 | 0.38 | 0.38 |
| Sat Flow, veh/h | 1774 | 3632 | 0 | 3442 | 2634 | 805 | 1774 | 1863 | 1353 | 1774 | 1078 | 513 |
| Grp Volume(v), veh/h | 79 | 847 | 0 | 316 | 562 | 531 | 53 | 326 | 470 | 200 | 0 | 186 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 0 | 1721 | 1770 | 1669 | 1774 | 1863 | 676 | 1774 | 0 | 1591 |
| Q Serve(g_s), s | 5.3 | 25.0 | 0.0 | 10.7 | 33.9 | 34.0 | 3.5 | 18.1 | 34.0 | 13.1 | 0.0 | 9.8 |
| Cycle Q Clear(g_c), s | 5.3 | 25.0 | 0.0 | 10.7 | 33.9 | 34.0 | 3.5 | 18.1 | 34.0 | 13.1 | 0.0 | 9.8 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 0.48 | 1.00 | | 1.00 | 1.00 | | 0.32 |
| Lane Grp Cap(c), veh/h | 100 | 1188 | 0 | 385 | 692 | 652 | 68 | 530 | 697 | 238 | 0 | 604 |
| V/C Ratio(X) | 0.79 | 0.71 | 0.00 | 0.82 | 0.81 | 0.81 | 0.77 | 0.61 | 0.67 | 0.84 | 0.00 | 0.31 |
| Avail Cap(c_a), veh/h | 163 | 1629 | 0 | 576 | 948 | 894 | 149 | 530 | 697 | 371 | 0 | 652 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 55.6 | 34.6 | 0.0 | 51.9 | 32.5 | 32.9 | 56.9 | 37.1 | 33.3 | 50.5 | 0.0 | 26.0 |
| Incr Delay (d2), s/veh | 12.6 | 1.1 | 0.0 | 5.9 | 4.3 | 4.6 | 16.8 | 2.1 | 2.6 | 9.8 | 0.0 | 0.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.9 | 12.4 | 0.0 | 5.4 | 17.4 | 16.5 | 2.1 | 9.6 | 7.2 | 7.1 | 0.0 | 4.3 |
| LnGrp Delay(d),s/veh | 68.2 | 35.7 | 0.0 | 57.7 | 36.7 | 37.4 | 73.7 | 39.2 | 35.8 | 60.3 | 0.0 | 26.3 |
| LnGrp LOS | E | D | | E | D | D | E | D | D | E | | C |
| Approach Vol, veh/h | | 926 | | | 1409 | | | 849 | | | 386 | |
| Approach Delay, s/veh | | 38.5 | | | 41.7 | | | 39.5 | | | 43.9 | |
| Approach LOS | | D | | | D | | | D | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 17.4 | 44.1 | 8.6 | 49.4 | 10.8 | 50.7 | 20.0 | 38.0 |
| Change Period (Y+Rc), s | 4.0 | 5.5 | 4.0 | 4.0 | 4.0 | 5.5 | 4.5 | 4.0 |
| Max Green Setting (Gmax), s | 20.0 | 53.5 | 10.0 | 49.0 | 11.0 | 62.5 | 24.5 | 34.0 |
| Max Q Clear Time (g_c+I1), s | 12.7 | 27.0 | 5.5 | 11.8 | 7.3 | 36.0 | 15.1 | 36.0 |
| Green Ext Time (p_c), s | 0.6 | 7.0 | 0.0 | 1.3 | 0.0 | 9.2 | 0.4 | 0.0 |

| Intersection Summary | | |
|---|---|---|
| HCM 2010 Ctrl Delay | | 40.6 |
| HCM 2010 LOS | | D |

| Intersection | |
|---|---|
| Int Delay, s/veh | 13.5 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 1441 | 90 | 70 | 1315 | 30 | 60 |
| Future Vol, veh/h | 1441 | 90 | 70 | 1315 | 30 | 60 |
| Conflicting Peds, #/hr | 0 | 1 | 1 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 150 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1517 | 95 | 74 | 1384 | 32 | 63 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 1613 | 0 | 2406 | 807 |
| Stage 1 | - | - | - | - | 1566 | - |
| Stage 2 | - | - | - | - | 840 | - |
| Critical Hdwy | - | - | 4.14 | - | 6.84 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 | - |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 | 3.32 |
| Pot Cap-1 Maneuver | - | - | 400 | - | ~ 28 | 324 |
| Stage 1 | - | - | - | - | 158 | - |
| Stage 2 | - | - | - | - | 384 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 400 | - | ~ 23 | 324 |
| Mov Cap-2 Maneuver | - | - | - | - | ~ 23 | - |
| Stage 1 | - | - | - | - | 129 | - |
| Stage 2 | - | - | - | - | 384 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.8 | $ 439.4 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 60 | - | - | 400 | - |
| HCM Lane V/C Ratio | 1.579 | - | - | 0.184 | - |
| HCM Control Delay (s) | $ 439.4 | - | - | 16 | - |
| HCM Lane LOS | F | - | - | C | - |
| HCM 95th %tile Q(veh) | 8.5 | - | - | 0.7 | - |

| Notes | | | |
|---|---|---|---|
| ~: Volume exceeds capacity | $: Delay exceeds 300s | +: Computation Not Defined | *: All major volume in platoon |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 130 | 1251 | 159 | 100 | 1241 | 170 | 94 | 70 | 60 | 120 | 60 | 50 |
| Future Volume (veh/h) | 130 | 1251 | 159 | 100 | 1241 | 170 | 94 | 70 | 60 | 120 | 60 | 50 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.98 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 137 | 1317 | 162 | 105 | 1306 | 179 | 99 | 74 | -13 | 126 | 63 | -7 |
| Adj No. of Lanes | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 159 | 1672 | 205 | 346 | 2001 | 272 | 120 | 148 | 126 | 148 | 177 | 0 |
| Arrive On Green | 0.09 | 0.53 | 0.52 | 0.20 | 0.64 | 0.63 | 0.07 | 0.08 | 0.00 | 0.08 | 0.10 | 0.00 |
| Sat Flow, veh/h | 1774 | 3175 | 388 | 1774 | 3121 | 425 | 1774 | 1863 | 1583 | 1774 | 1863 | 0 |
| Grp Volume(v), veh/h | 137 | 731 | 748 | 105 | 736 | 749 | 99 | 74 | -13 | 126 | 56 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1793 | 1774 | 1770 | 1776 | 1774 | 1863 | 1583 | 1774 | 1863 | 0 |
| Q Serve(g_s), s | 11.4 | 50.0 | 50.9 | 7.6 | 38.4 | 39.4 | 8.3 | 5.7 | 0.0 | 10.5 | 4.2 | 0.0 |
| Cycle Q Clear(g_c), s | 11.4 | 50.0 | 50.9 | 7.6 | 38.4 | 39.4 | 8.3 | 5.7 | 0.0 | 10.5 | 4.2 | 0.0 |
| Prop In Lane | 1.00 | | 0.22 | 1.00 | | 0.24 | 1.00 | | 1.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 159 | 932 | 944 | 346 | 1135 | 1139 | 120 | 148 | 126 | 148 | 177 | 0 |
| V/C Ratio(X) | 0.86 | 0.78 | 0.79 | 0.30 | 0.65 | 0.66 | 0.83 | 0.50 | -0.10 | 0.85 | 0.32 | 0.00 |
| Avail Cap(c_a), veh/h | 177 | 932 | 944 | 346 | 1135 | 1139 | 166 | 360 | 306 | 166 | 360 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.74 | 0.74 | 0.74 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 67.4 | 28.6 | 29.0 | 51.6 | 16.5 | 16.8 | 69.1 | 66.2 | 0.0 | 67.9 | 63.3 | 0.0 |
| Incr Delay (d2), s/veh | 28.5 | 6.6 | 6.8 | 0.1 | 2.1 | 2.2 | 15.5 | 3.7 | 0.0 | 28.1 | 1.4 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 6.9 | 26.1 | 26.9 | 3.7 | 19.3 | 19.9 | 4.6 | 3.1 | 0.0 | 6.3 | 2.2 | 0.0 |
| LnGrp Delay(d),s/veh | 95.9 | 35.2 | 35.7 | 51.8 | 18.7 | 19.0 | 84.5 | 69.8 | 0.0 | 95.9 | 64.7 | 0.0 |
| LnGrp LOS | F | D | D | D | B | B | F | E | | F | E | |
| Approach Vol, veh/h | | 1616 | | | 1590 | | | 160 | | | 182 | |
| Approach Delay, s/veh | | 40.6 | | | 21.0 | | | 84.6 | | | 86.3 | |
| Approach LOS | | D | | | C | | | F | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 34.6 | 83.0 | 14.1 | 18.3 | 17.4 | 100.2 | 16.5 | 15.9 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 4.0 | 4.0 | 4.0 | 5.3 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 12.0 | * 78 | 14.0 | 29.0 | 15.0 | 74.7 | 14.0 | 29.0 |
| Max Q Clear Time (g_c+I1), s | 9.6 | 52.9 | 10.3 | 6.2 | 13.4 | 41.4 | 12.5 | 7.7 |
| Green Ext Time (p_c), s | 0.0 | 23.1 | 0.0 | 0.3 | 0.0 | 30.6 | 0.0 | 0.4 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 36.2 |
| HCM 2010 LOS | D |

Notes



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 93 | 1276 | 73 | 120 | 1374 | 50 | 94 | 40 | 90 | 30 | 20 | 54 |
| Future Volume (veh/h) | 93 | 1276 | 73 | 120 | 1374 | 50 | 94 | 40 | 90 | 30 | 20 | 54 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 98 | 1343 | 44 | 126 | 1446 | 39 | 99 | 42 | 58 | 32 | 21 | 41 |
| Adj No. of Lanes | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 454 | 2503 | 1120 | 173 | 1746 | 781 | 121 | 187 | 159 | 62 | 38 | 75 |
| Arrive On Green | 0.51 | 1.00 | 1.00 | 0.05 | 0.49 | 0.49 | 0.07 | 0.10 | 0.10 | 0.04 | 0.07 | 0.07 |
| Sat Flow, veh/h | 1774 | 3539 | 1583 | 3442 | 3539 | 1583 | 1774 | 1863 | 1583 | 1774 | 565 | 1103 |
| Grp Volume(v), veh/h | 98 | 1343 | 44 | 126 | 1446 | 39 | 99 | 42 | 58 | 32 | 0 | 62 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1583 | 1721 | 1770 | 1583 | 1774 | 1863 | 1583 | 1774 | 0 | 1668 |
| Q Serve(g_s), s | 4.5 | 0.0 | 0.0 | 5.4 | 52.5 | 1.5 | 8.3 | 3.1 | 5.1 | 2.7 | 0.0 | 5.4 |
| Cycle Q Clear(g_c), s | 4.5 | 0.0 | 0.0 | 5.4 | 52.5 | 1.5 | 8.3 | 3.1 | 5.1 | 2.7 | 0.0 | 5.4 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.66 |
| Lane Grp Cap(c), veh/h | 454 | 2503 | 1120 | 173 | 1746 | 781 | 121 | 187 | 159 | 62 | 0 | 113 |
| V/C Ratio(X) | 0.22 | 0.54 | 0.04 | 0.73 | 0.83 | 0.05 | 0.82 | 0.23 | 0.37 | 0.51 | 0.00 | 0.55 |
| Avail Cap(c_a), veh/h | 454 | 2503 | 1120 | 234 | 1746 | 781 | 142 | 508 | 432 | 84 | 0 | 400 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.69 | 0.69 | 0.69 | 0.65 | 0.65 | 0.65 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 28.3 | 0.0 | 0.0 | 70.2 | 32.6 | 12.4 | 69.0 | 62.1 | 63.0 | 71.1 | 0.0 | 67.7 |
| Incr Delay (d2), s/veh | 0.1 | 0.6 | 0.0 | 2.7 | 3.1 | 0.1 | 23.3 | 0.2 | 0.5 | 2.4 | 0.0 | 1.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.2 | 0.2 | 0.0 | 2.6 | 26.3 | 0.7 | 4.9 | 1.6 | 2.3 | 1.3 | 0.0 | 2.5 |
| LnGrp Delay(d),s/veh | 28.4 | 0.6 | 0.0 | 73.0 | 35.7 | 12.4 | 92.3 | 62.4 | 63.6 | 73.6 | 0.0 | 69.2 |
| LnGrp LOS | C | A | A | E | D | B | F | E | E | E | | E |
| Approach Vol, veh/h | | 1485 | | | 1611 | | | 199 | | | 94 | |
| Approach Delay, s/veh | | 2.4 | | | 38.0 | | | 77.6 | | | 70.7 | |
| Approach LOS | | A | | | D | | | E | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 11.5 | 110.1 | 14.2 | 14.2 | 43.6 | 78.0 | 9.3 | 19.1 |
| Change Period (Y+Rc), s | 4.1 | 5.3 | 4.1 | 4.0 | 5.3 | * 5.3 | 4.1 | * 4.1 |
| Max Green Setting (Gmax), s | 10.1 | 74.5 | 11.9 | 36.0 | 11.9 | * 73 | 7.0 | * 41 |
| Max Q Clear Time (g_c+I1), s | 7.4 | 2.0 | 10.3 | 7.4 | 6.5 | 54.5 | 4.7 | 7.1 |
| Green Ext Time (p_c), s | 0.0 | 56.8 | 0.0 | 0.2 | 0.0 | 17.1 | 0.0 | 0.2 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 25.6 |
| HCM 2010 LOS | C |

Notes

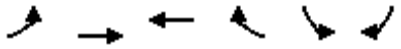


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 82 | 1277 | 37 | 450 | 1427 | 120 | 50 | 40 | 380 | 190 | 50 | 66 |
| Future Volume (veh/h) | 82 | 1277 | 37 | 450 | 1427 | 120 | 50 | 40 | 380 | 190 | 50 | 66 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 86 | 1344 | 31 | 474 | 1502 | 125 | 53 | 42 | 137 | 200 | 53 | 30 |
| Adj No. of Lanes | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 426 | 1871 | 837 | 505 | 1510 | 675 | 230 | 195 | 165 | 201 | 98 | 56 |
| Arrive On Green | 0.32 | 0.70 | 0.70 | 0.29 | 0.85 | 0.85 | 0.13 | 0.10 | 0.10 | 0.11 | 0.09 | 0.09 |
| Sat Flow, veh/h | 1774 | 3539 | 1582 | 3442 | 3539 | 1581 | 1774 | 1863 | 1579 | 1774 | 1117 | 632 |
| Grp Volume(v), veh/h | 86 | 1344 | 31 | 474 | 1502 | 125 | 53 | 42 | 137 | 200 | 0 | 83 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1582 | 1721 | 1770 | 1581 | 1774 | 1863 | 1579 | 1774 | 0 | 1749 |
| Q Serve(g_s), s | 5.3 | 34.2 | 0.5 | 20.1 | 61.7 | 1.4 | 4.0 | 3.1 | 12.8 | 16.9 | 0.0 | 6.8 |
| Cycle Q Clear(g_c), s | 5.3 | 34.2 | 0.5 | 20.1 | 61.7 | 1.4 | 4.0 | 3.1 | 12.8 | 16.9 | 0.0 | 6.8 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.36 |
| Lane Grp Cap(c), veh/h | 426 | 1871 | 837 | 505 | 1510 | 675 | 230 | 195 | 165 | 201 | 0 | 154 |
| V/C Ratio(X) | 0.20 | 0.72 | 0.04 | 0.94 | 0.99 | 0.19 | 0.23 | 0.22 | 0.83 | 0.99 | 0.00 | 0.54 |
| Avail Cap(c_a), veh/h | 426 | 1871 | 837 | 505 | 1510 | 675 | 230 | 546 | 463 | 201 | 0 | 595 |
| HCM Platoon Ratio | 1.33 | 1.33 | 1.33 | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.82 | 0.82 | 0.82 | 0.57 | 0.57 | 0.57 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 40.6 | 15.6 | 3.5 | 52.3 | 10.8 | 3.0 | 58.5 | 61.5 | 65.8 | 66.5 | 0.0 | 65.5 |
| Incr Delay (d2), s/veh | 0.1 | 2.0 | 0.1 | 17.1 | 16.2 | 0.3 | 0.2 | 0.2 | 4.0 | 61.8 | 0.0 | 1.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.6 | 16.8 | 0.2 | 10.7 | 31.4 | 0.7 | 2.0 | 1.6 | 5.8 | 11.7 | 0.0 | 3.3 |
| LnGrp Delay(d),s/veh | 40.7 | 17.5 | 3.6 | 69.4 | 27.1 | 3.3 | 58.7 | 61.7 | 69.9 | 128.3 | 0.0 | 66.6 |
| LnGrp LOS | D | B | A | E | C | A | E | E | E | F | | E |
| Approach Vol, veh/h | | 1461 | | | 2101 | | | 232 | | | 283 | |
| Approach Delay, s/veh | | 18.6 | | | 35.2 | | | 65.8 | | | 110.2 | |
| Approach LOS | | B | | | D | | | E | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 26.0 | 83.3 | 23.5 | 17.2 | 41.3 | 68.0 | 21.0 | 19.7 |
| Change Period (Y+Rc), s | 4.0 | 5.3 | 4.0 | 4.0 | 5.3 | * 5.3 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 22.0 | 49.7 | 10.0 | 51.0 | 9.0 | * 63 | 17.0 | 44.0 |
| Max Q Clear Time (g_c+I1), s | 22.1 | 36.2 | 6.0 | 8.8 | 7.3 | 63.7 | 18.9 | 14.8 |
| Green Ext Time (p_c), s | 0.0 | 5.4 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | 0.4 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 36.2 |
| HCM 2010 LOS | D |

Notes



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 208 | 1679 | 1277 | 140 | 700 | 710 |
| Future Volume (veh/h) | 208 | 1679 | 1277 | 140 | 700 | 710 |
| Number | 7 | 4 | 8 | 18 | 1 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 219 | 1767 | 1344 | 0 | 737 | 468 |
| Adj No. of Lanes | 2 | 2 | 3 | 1 | 2 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 274 | 1765 | 1996 | 621 | 1542 | 709 |
| Arrive On Green | 0.16 | 1.00 | 0.39 | 0.00 | 0.45 | 0.45 |
| Sat Flow, veh/h | 3442 | 3632 | 5253 | 1583 | 3442 | 1583 |
| Grp Volume(v), veh/h | 219 | 1767 | 1344 | 0 | 737 | 468 |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1770 | 1695 | 1583 | 1721 | 1583 |
| Q Serve(g_s), s | 9.2 | 74.8 | 32.7 | 0.0 | 22.6 | 34.7 |
| Cycle Q Clear(g_c), s | 9.2 | 74.8 | 32.7 | 0.0 | 22.6 | 34.7 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 274 | 1765 | 1996 | 621 | 1542 | 709 |
| V/C Ratio(X) | 0.80 | 1.00 | 0.67 | 0.00 | 0.48 | 0.66 |
| Avail Cap(c_a), veh/h | 356 | 1840 | 1996 | 621 | 1542 | 709 |
| HCM Platoon Ratio | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.45 | 0.45 | 1.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 61.9 | 0.2 | 37.6 | 0.0 | 29.1 | 32.4 |
| Incr Delay (d2), s/veh | 4.5 | 14.2 | 0.9 | 0.0 | 0.2 | 2.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 4.6 | 3.6 | 15.5 | 0.0 | 10.8 | 30.6 |
| LnGrp Delay(d),s/veh | 66.4 | 14.4 | 38.5 | 0.0 | 29.3 | 34.7 |
| LnGrp LOS | E | F | D | | C | C |
| Approach Vol, veh/h | | 1986 | 1344 | | 1205 | |
| Approach Delay, s/veh | | 20.2 | 38.5 | | 31.4 | |
| Approach LOS | | C | D | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | | | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | | | 80.4 | | 69.6 | 15.9 | 64.4 |
| Change Period (Y+Rc), s | | | | 4.5 | | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | | | | 77.5 | | 63.5 | 15.0 | 58.0 |
| Max Q Clear Time (g_c+I1), s | | | | 76.8 | | 36.7 | 11.2 | 34.7 |
| Green Ext Time (p_c), s | | | | 0.6 | | 4.6 | 0.2 | 9.7 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 28.6 |
| HCM 2010 LOS | C |



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 1706 | 673 | 0 | 1721 | 326 | 100 |
| Future Volume (veh/h) | 1706 | 673 | 0 | 1721 | 326 | 100 |
| Number | 4 | 14 | 3 | 8 | 5 | 12 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 0 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 1796 | 708 | 0 | 1812 | 343 | 105 |
| Adj No. of Lanes | 2 | 1 | 0 | 2 | 2 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 0 | 2 | 2 | 2 |
| Cap, veh/h | 2164 | 968 | 0 | 2164 | 1154 | 531 |
| Arrive On Green | 0.61 | 0.61 | 0.00 | 0.61 | 0.34 | 0.34 |
| Sat Flow, veh/h | 3632 | 1583 | 0 | 3725 | 3442 | 1583 |
| Grp Volume(v), veh/h | 1796 | 708 | 0 | 1812 | 343 | 105 |
| Grp Sat Flow(s),veh/h/ln | 1770 | 1583 | 0 | 1770 | 1721 | 1583 |
| Q Serve(g_s), s | 60.1 | 47.1 | 0.0 | 61.2 | 11.0 | 7.1 |
| Cycle Q Clear(g_c), s | 60.1 | 47.1 | 0.0 | 61.2 | 11.0 | 7.1 |
| Prop In Lane | | 1.00 | 0.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 2164 | 968 | 0 | 2164 | 1154 | 531 |
| V/C Ratio(X) | 0.83 | 0.73 | 0.00 | 0.84 | 0.30 | 0.20 |
| Avail Cap(c_a), veh/h | 2690 | 1203 | 0 | 2690 | 1154 | 531 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.82 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 23.0 | 20.5 | 0.0 | 23.2 | 36.8 | 35.5 |
| Incr Delay (d2), s/veh | 1.9 | 1.8 | 0.0 | 1.7 | 0.7 | 0.8 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 29.8 | 20.9 | 0.0 | 30.2 | 5.3 | 3.2 |
| LnGrp Delay(d),s/veh | 24.9 | 22.3 | 0.0 | 24.9 | 37.5 | 36.3 |
| LnGrp LOS | C | C | | C | D | D |
| Approach Vol, veh/h | 2504 | | | 1812 | 448 | |
| Approach Delay, s/veh | 24.1 | | | 24.9 | 37.2 | |
| Approach LOS | C | | | C | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | | | 8 |
| Phs Duration (G+Y+Rc), s | | 54.3 | | 95.7 | | | | 95.7 |
| Change Period (Y+Rc), s | | 4.5 | | 4.5 | | | | 4.5 |
| Max Green Setting (Gmax), s | | 27.5 | | 113.5 | | | | 113.5 |
| Max Q Clear Time (g_c+I1), s | | 13.0 | | 62.1 | | | | 63.2 |
| Green Ext Time (p_c), s | | 1.4 | | 29.2 | | | | 21.9 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 25.7 |
| HCM 2010 LOS | C |



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 1776 | 30 | 50 | 1681 | 40 | 50 |
| Future Volume (veh/h) | 1776 | 30 | 50 | 1681 | 40 | 50 |
| Number | 2 | 12 | 1 | 6 | 7 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 1869 | 26 | 53 | 1769 | 42 | 44 |
| Adj No. of Lanes | 2 | 1 | 1 | 2 | 1 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 2891 | 1293 | 68 | 3121 | 115 | 103 |
| Arrive On Green | 1.00 | 1.00 | 0.04 | 0.88 | 0.06 | 0.06 |
| Sat Flow, veh/h | 3632 | 1582 | 1774 | 3632 | 1774 | 1583 |
| Grp Volume(v), veh/h | 1869 | 26 | 53 | 1769 | 42 | 44 |
| Grp Sat Flow(s),veh/h/ln | 1770 | 1582 | 1774 | 1770 | 1774 | 1583 |
| Q Serve(g_s), s | 0.0 | 0.0 | 4.4 | 17.7 | 3.4 | 4.0 |
| Cycle Q Clear(g_c), s | 0.0 | 0.0 | 4.4 | 17.7 | 3.4 | 4.0 |
| Prop In Lane | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 2891 | 1293 | 68 | 3121 | 115 | 103 |
| V/C Ratio(X) | 0.65 | 0.02 | 0.78 | 0.57 | 0.37 | 0.43 |
| Avail Cap(c_a), veh/h | 2891 | 1293 | 142 | 3121 | 154 | 137 |
| HCM Platoon Ratio | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.69 | 0.69 | 0.24 | 0.24 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 0.0 | 0.0 | 71.5 | 2.1 | 67.2 | 67.5 |
| Incr Delay (d2), s/veh | 0.8 | 0.0 | 1.8 | 0.2 | 0.7 | 1.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.3 | 0.0 | 2.2 | 8.4 | 1.7 | 1.8 |
| LnGrp Delay(d),s/veh | 0.8 | 0.0 | 73.3 | 2.3 | 67.9 | 68.5 |
| LnGrp LOS | A | A | E | A | E | E |
| Approach Vol, veh/h | 1895 | | | 1822 | 86 | |
| Approach Delay, s/veh | 0.8 | | | 4.3 | 68.2 | |
| Approach LOS | A | | | A | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | | 6 | | |
| Phs Duration (G+Y+Rc), s | 9.7 | 126.5 | | 13.7 | | 136.3 | | |
| Change Period (Y+Rc), s | 4.0 | 5.3 | | 4.0 | | 5.3 | | |
| Max Green Setting (Gmax), s | 12.0 | 111.7 | | 13.0 | | 127.7 | | |
| Max Q Clear Time (g_c+I1), s | 6.4 | 2.0 | | 6.0 | | 19.7 | | |
| Green Ext Time (p_c), s | 0.0 | 14.3 | | 0.1 | | 12.5 | | |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 4.0 |
| HCM 2010 LOS | A |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 482 | 1105 | 239 | 80 | 899 | 180 | 348 | 630 | 200 | 330 | 270 | 484 |
| Future Volume (veh/h) | 482 | 1105 | 239 | 80 | 899 | 180 | 348 | 630 | 200 | 330 | 270 | 484 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 7 | 4 | 14 | 3 | 8 | 18 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 507 | 1163 | 244 | 84 | 946 | 100 | 366 | 663 | 175 | 347 | 284 | 0 |
| Adj No. of Lanes | 2 | 2 | 0 | 1 | 2 | 1 | 1 | 2 | 1 | 2 | 2 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 477 | 1108 | 231 | 237 | 1362 | 601 | 328 | 815 | 364 | 408 | 598 | 268 |
| Arrive On Green | 0.14 | 0.38 | 0.37 | 0.13 | 0.38 | 0.38 | 0.18 | 0.23 | 0.23 | 0.12 | 0.17 | 0.00 |
| Sat Flow, veh/h | 3442 | 2917 | 608 | 1774 | 3539 | 1561 | 1774 | 3539 | 1579 | 3442 | 3539 | 1583 |
| Grp Volume(v), veh/h | 507 | 702 | 705 | 84 | 946 | 100 | 366 | 663 | 175 | 347 | 284 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1770 | 1755 | 1774 | 1770 | 1561 | 1774 | 1770 | 1579 | 1721 | 1770 | 1583 |
| Q Serve(g_s), s | 18.0 | 49.4 | 49.4 | 5.6 | 29.2 | 5.5 | 24.0 | 23.1 | 9.1 | 12.8 | 9.4 | 0.0 |
| Cycle Q Clear(g_c), s | 18.0 | 49.4 | 49.4 | 5.6 | 29.2 | 5.5 | 24.0 | 23.1 | 9.1 | 12.8 | 9.4 | 0.0 |
| Prop In Lane | 1.00 | | 0.35 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 477 | 672 | 667 | 237 | 1362 | 601 | 328 | 815 | 364 | 408 | 598 | 268 |
| V/C Ratio(X) | 1.06 | 1.04 | 1.06 | 0.36 | 0.69 | 0.17 | 1.12 | 0.81 | 0.48 | 0.85 | 0.47 | 0.00 |
| Avail Cap(c_a), veh/h | 477 | 672 | 667 | 237 | 1362 | 601 | 328 | 1051 | 469 | 529 | 942 | 421 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.74 | 0.74 | 0.74 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 56.0 | 40.3 | 40.5 | 51.2 | 33.6 | 26.3 | 53.0 | 47.4 | 23.0 | 56.2 | 48.8 | 0.0 |
| Incr Delay (d2), s/veh | 53.6 | 42.1 | 46.0 | 0.9 | 2.9 | 0.6 | 85.3 | 3.9 | 1.0 | 10.0 | 0.6 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 12.1 | 32.0 | 32.4 | 2.8 | 14.7 | 2.5 | 19.5 | 11.7 | 4.0 | 6.7 | 4.7 | 0.0 |
| LnGrp Delay(d),s/veh | 109.6 | 82.4 | 86.6 | 52.1 | 36.5 | 26.9 | 138.3 | 51.3 | 23.9 | 66.1 | 49.4 | 0.0 |
| LnGrp LOS | F | F | F | D | D | C | F | D | C | E | D | |
| Approach Vol, veh/h | | 1914 | | | 1130 | | | 1204 | | | 631 | |
| Approach Delay, s/veh | | 91.1 | | | 36.8 | | | 73.7 | | | 58.6 | |
| Approach LOS | | F | | | D | | | E | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 22.6 | 53.4 | 20.0 | 33.9 | 22.0 | 54.0 | 28.0 | 26.0 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 4.6 | * 4.6 | 4.0 | 5.3 | 4.0 | 4.6 |
| Max Green Setting (Gmax), s | 6.3 | * 48 | 20.0 | * 38 | 18.0 | 36.1 | 24.0 | 34.0 |
| Max Q Clear Time (g_c+I1), s | 17.6 | 51.4 | 14.8 | 25.1 | 20.0 | 31.2 | 26.0 | 11.4 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | 0.6 | 4.1 | 0.0 | 2.9 | 0.0 | 1.7 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 70.1 |
| HCM 2010 LOS | E |

Notes



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 70 | 240 | 20 | 0 | 60 | 578 | 70 | 1748 | 0 | 679 | 1029 | 50 |
| Future Volume (veh/h) | 70 | 240 | 20 | 0 | 60 | 578 | 70 | 1748 | 0 | 679 | 1029 | 50 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1827 | 1827 | 1900 | 1827 | 1827 | 1827 | 1827 | 1827 | 1900 | 1827 | 1827 | 1900 |
| Adj Flow Rate, veh/h | 73 | 250 | 4 | 0 | 62 | 0 | 73 | 1821 | 0 | 707 | 1072 | 0 |
| Adj No. of Lanes | 1 | 2 | 0 | 1 | 1 | 1 | 1 | 2 | 0 | 2 | 2 | 0 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Cap, veh/h | 113 | 508 | 8 | 1 | 107 | 66 | 99 | 1938 | 0 | 781 | 2545 | 0 |
| Arrive On Green | 0.07 | 0.15 | 0.13 | 0.00 | 0.06 | 0.00 | 0.06 | 0.56 | 0.00 | 0.23 | 0.73 | 0.00 |
| Sat Flow, veh/h | 1740 | 3497 | 56 | 1740 | 1827 | 1553 | 1740 | 3563 | 0 | 3375 | 3563 | 0 |
| Grp Volume(v), veh/h | 73 | 124 | 130 | 0 | 62 | 0 | 73 | 1821 | 0 | 707 | 1072 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1740 | 1736 | 1817 | 1740 | 1827 | 1553 | 1740 | 1736 | 0 | 1688 | 1736 | 0 |
| Q Serve(g_s), s | 7.6 | 12.1 | 12.2 | 0.0 | 6.1 | 0.0 | 7.6 | 90.0 | 0.0 | 37.6 | 22.0 | 0.0 |
| Cycle Q Clear(g_c), s | 7.6 | 12.1 | 12.2 | 0.0 | 6.1 | 0.0 | 7.6 | 90.0 | 0.0 | 37.6 | 22.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.03 | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 113 | 252 | 264 | 1 | 107 | 66 | 99 | 1938 | 0 | 781 | 2545 | 0 |
| V/C Ratio(X) | 0.65 | 0.49 | 0.49 | 0.00 | 0.58 | 0.00 | 0.74 | 0.94 | 0.00 | 0.90 | 0.42 | 0.00 |
| Avail Cap(c_a), veh/h | 113 | 252 | 264 | 75 | 129 | 84 | 160 | 1993 | 0 | 786 | 2545 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 84.2 | 72.6 | 72.7 | 0.0 | 84.7 | 0.0 | 85.7 | 37.9 | 0.0 | 69.0 | 9.5 | 0.0 |
| Incr Delay (d2), s/veh | 12.0 | 1.5 | 1.4 | 0.0 | 4.9 | 0.0 | 10.4 | 9.3 | 0.0 | 13.9 | 0.1 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 4.0 | 5.9 | 6.2 | 0.0 | 3.2 | 0.0 | 4.0 | 45.5 | 0.0 | 19.1 | 10.5 | 0.0 |
| LnGrp Delay(d),s/veh | 96.2 | 74.1 | 74.1 | 0.0 | 89.6 | 0.0 | 96.1 | 47.2 | 0.0 | 82.9 | 9.6 | 0.0 |
| LnGrp LOS | F | E | E | | F | | F | D | | F | A | |
| Approach Vol, veh/h | | 327 | | | 62 | | | 1894 | | | 1779 | |
| Approach Delay, s/veh | | 79.1 | | | 89.6 | | | 49.0 | | | 38.7 | |
| Approach LOS | | E | | | F | | | D | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 16.7 | 107.1 | 0.0 | 30.8 | 14.5 | 139.4 | 16.0 | 14.8 |
| Change Period (Y+Rc), s | 7.0 | 7.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 | 7.0 |
| Max Green Setting (Gmax), s | 10.0 | 103.0 | 5.0 | 14.0 | 16.0 | 129.0 | 9.0 | 10.0 |
| Max Q Clear Time (g_c+I1), s | 9.6 | 92.0 | 0.0 | 14.2 | 9.6 | 24.0 | 9.6 | 8.1 |
| Green Ext Time (p_c), s | 0.1 | 8.1 | 0.0 | 0.0 | 0.1 | 8.4 | 0.0 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 47.6 |
| HCM 2010 LOS | D |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 10 | 20 | 10 | 190 | 20 | 20 | 0 | 1788 | 600 | 10 | 1029 | 10 |
| Future Volume (veh/h) | 10 | 20 | 10 | 190 | 20 | 20 | 0 | 1788 | 600 | 10 | 1029 | 10 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 1 | 6 | 16 | 5 | 2 | 12 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 11 | 21 | 11 | 200 | 21 | 20 | 0 | 1882 | 598 | 11 | 1083 | 10 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 32 | 41 | 22 | 169 | 99 | 94 | 1 | 1451 | 1384 | 32 | 2928 | 27 |
| Arrive On Green | 0.02 | 0.04 | 0.03 | 0.10 | 0.11 | 0.11 | 0.00 | 0.78 | 0.78 | 0.02 | 0.81 | 0.81 |
| Sat Flow, veh/h | 1774 | 1153 | 604 | 1774 | 878 | 837 | 1774 | 1863 | 1583 | 1774 | 3593 | 33 |
| Grp Volume(v), veh/h | 11 | 0 | 32 | 200 | 0 | 41 | 0 | 1882 | 598 | 11 | 533 | 560 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 0 | 1756 | 1774 | 0 | 1715 | 1774 | 1863 | 1583 | 1774 | 1770 | 1857 |
| Q Serve(g_s), s | 1.4 | 0.0 | 4.0 | 21.0 | 0.0 | 4.8 | 0.0 | 172.0 | 16.9 | 1.4 | 17.6 | 17.6 |
| Cycle Q Clear(g_c), s | 1.4 | 0.0 | 4.0 | 21.0 | 0.0 | 4.8 | 0.0 | 172.0 | 16.9 | 1.4 | 17.6 | 17.6 |
| Prop In Lane | 1.00 | | 0.34 | 1.00 | | 0.49 | 1.00 | | 1.00 | 1.00 | | 0.02 |
| Lane Grp Cap(c), veh/h | 32 | 0 | 63 | 169 | 0 | 194 | 1 | 1451 | 1384 | 32 | 1442 | 1513 |
| V/C Ratio(X) | 0.35 | 0.00 | 0.51 | 1.19 | 0.00 | 0.21 | 0.00 | 1.30 | 0.43 | 0.35 | 0.37 | 0.37 |
| Avail Cap(c_a), veh/h | 56 | 0 | 72 | 169 | 0 | 194 | 56 | 1451 | 1384 | 56 | 1442 | 1513 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 107.2 | 0.0 | 104.8 | 99.9 | 0.0 | 89.2 | 0.0 | 24.4 | 2.8 | 107.2 | 5.4 | 5.4 |
| Incr Delay (d2), s/veh | 6.4 | 0.0 | 6.3 | 127.9 | 0.0 | 0.5 | 0.0 | 138.9 | 0.2 | 6.4 | 0.2 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.7 | 0.0 | 2.0 | 16.3 | 0.0 | 2.3 | 0.0 | 143.4 | 7.4 | 0.7 | 8.7 | 9.1 |
| LnGrp Delay(d),s/veh | 113.6 | 0.0 | 111.1 | 227.9 | 0.0 | 89.8 | 0.0 | 163.3 | 3.0 | 113.6 | 5.6 | 5.6 |
| LnGrp LOS | F | | F | F | | F | | F | A | F | A | A |
| Approach Vol, veh/h | | 43 | | | 241 | | | 2480 | | | 1104 | |
| Approach Delay, s/veh | | 111.7 | | | 204.4 | | | 124.7 | | | 6.6 | |
| Approach LOS | | F | | | F | | | F | | | A | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 10.0 | 183.9 | 25.0 | 11.9 | 7.9 | 176.0 | 7.9 | 28.9 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 6.0 | 171.0 | 20.0 | 8.0 | 6.0 | 171.0 | 6.0 | 22.0 |
| Max Q Clear Time (g_c+I1), s | 10.0 | 19.6 | 23.0 | 6.0 | 3.4 | 174.0 | 3.4 | 6.8 |
| Green Ext Time (p_c), s | 0.0 | 7.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 95.8 |
| HCM 2010 LOS | F |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 300 | 30 | 120 | 80 | 390 | 30 | 1998 | 290 | 360 | 719 | 150 |
| Future Volume (veh/h) | 0 | 300 | 30 | 120 | 80 | 390 | 30 | 1998 | 290 | 360 | 719 | 150 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 0 | 316 | 32 | 105 | 113 | 411 | 32 | 2103 | 0 | 379 | 757 | 0 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 1 | 303 | 31 | 118 | 497 | 422 | 57 | 1777 | 894 | 315 | 2293 | 0 |
| Arrive On Green | 0.00 | 0.18 | 0.17 | 0.07 | 0.27 | 0.27 | 0.03 | 0.50 | 0.00 | 0.18 | 0.65 | 0.00 |
| Sat Flow, veh/h | 1774 | 1664 | 169 | 1774 | 1863 | 1583 | 1774 | 3539 | 1583 | 1774 | 3632 | 0 |
| Grp Volume(v), veh/h | 0 | 0 | 348 | 105 | 113 | 411 | 32 | 2103 | 0 | 379 | 757 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 0 | 1833 | 1774 | 1863 | 1583 | 1774 | 1770 | 1583 | 1774 | 1770 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 41.0 | 13.2 | 10.7 | 57.8 | 4.0 | 113.0 | 0.0 | 40.0 | 21.5 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 0.0 | 41.0 | 13.2 | 10.7 | 57.8 | 4.0 | 113.0 | 0.0 | 40.0 | 21.5 | 0.0 |
| Prop In Lane | 1.00 | | 0.09 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 1 | 0 | 334 | 118 | 497 | 422 | 57 | 1777 | 894 | 315 | 2293 | 0 |
| V/C Ratio(X) | 0.00 | 0.00 | 1.04 | 0.89 | 0.23 | 0.97 | 0.56 | 1.18 | 0.00 | 1.20 | 0.33 | 0.00 |
| Avail Cap(c_a), veh/h | 47 | 0 | 334 | 118 | 497 | 422 | 87 | 1777 | 894 | 315 | 2293 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 0.0 | 0.0 | 92.1 | 104.2 | 64.4 | 81.7 | 107.4 | 56.0 | 0.0 | 92.5 | 17.7 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 0.0 | 60.6 | 49.9 | 0.2 | 36.7 | 8.5 | 88.5 | 0.0 | 117.1 | 0.1 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 0.0 | 26.4 | 8.1 | 5.5 | 29.7 | 2.1 | 76.9 | 0.0 | 29.9 | 10.5 | 0.0 |
| LnGrp Delay(d),s/veh | 0.0 | 0.0 | 152.7 | 154.1 | 64.6 | 118.5 | 115.9 | 144.5 | 0.0 | 209.6 | 17.8 | 0.0 |
| LnGrp LOS | | | F | F | E | F | F | F | | F | B | |
| Approach Vol, veh/h | | 348 | | | 629 | | | 2135 | | | 1136 | |
| Approach Delay, s/veh | | 152.7 | | | 114.7 | | | 144.1 | | | 81.8 | |
| Approach LOS | | F | | | F | | | F | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 44.0 | 117.0 | 19.0 | 45.0 | 11.2 | 149.8 | 0.0 | 64.0 |
| Change Period (Y+Rc), s | 6.0 | 7.0 | 6.0 | 6.0 | 6.0 | 7.0 | 6.0 | 6.0 |
| Max Green Setting (Gmax), s | 38.0 | 110.0 | 13.0 | 39.0 | 9.0 | 139.0 | 4.0 | 48.0 |
| Max Q Clear Time (g_c+I1), s | 42.0 | 115.0 | 15.2 | 43.0 | 6.0 | 23.5 | 0.0 | 59.8 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.1 | 0.0 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 123.8 |
| HCM 2010 LOS | F |

Notes

# LANE LEVEL OF SERVICE

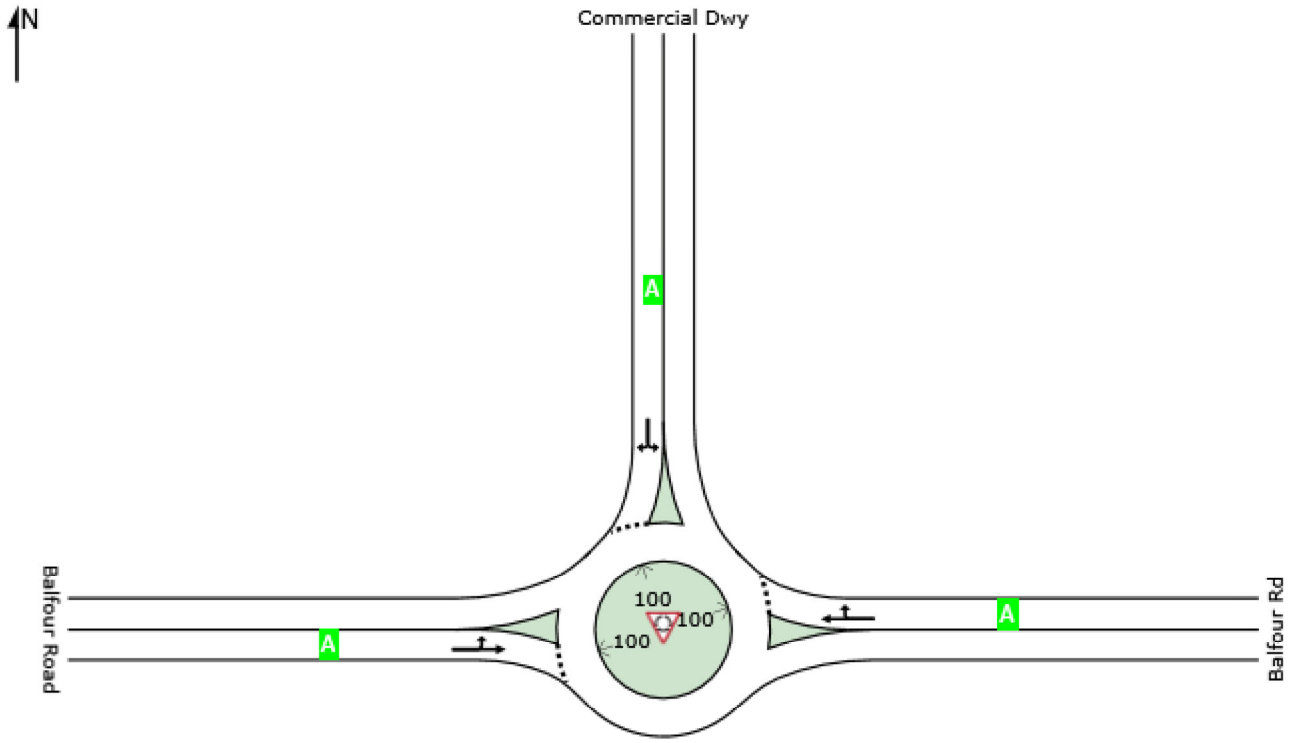
## Lane Level of Service

### Site: 6 [INT 6 - CU-PP_AM]

Vineyards at Deer Creek
Roundabout

**All Movement Classes**

| | East | North | West | Intersection |
|---|---|---|---|---|
| LOS | A | A | A | A |




Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

# MOVEMENT SUMMARY

## Site: 6 [INT 6 - CU-PP_AM]

Vineyards at Deer Creek
Roundabout

| Movement Performance - Vehicles | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mov ID | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance ft | Prop. Queued | Effective Stop Rate per veh | Average Speed mph |
| East: Balfour Rd | | | | | | | | | | | |
| 6 | T1 | 690 | 3.0 | 0.557 | 9.0 | LOS A | 4.7 | 121.0 | 0.24 | 0.09 | 33.2 |
| 16 | R2 | 30 | 3.0 | 0.557 | 9.0 | LOS A | 4.7 | 121.0 | 0.24 | 0.09 | 32.3 |
| Approach | | 721 | 3.0 | 0.557 | 9.0 | LOS A | 4.7 | 121.0 | 0.24 | 0.09 | 33.2 |
| North: Commercial Dwy | | | | | | | | | | | |
| 7 | L2 | 33 | 3.0 | 0.055 | 6.1 | LOS A | 0.2 | 5.3 | 0.59 | 0.53 | 32.2 |
| 14 | R2 | 3 | 3.0 | 0.055 | 6.1 | LOS A | 0.2 | 5.3 | 0.59 | 0.53 | 31.3 |
| Approach | | 36 | 3.0 | 0.055 | 6.1 | LOS A | 0.2 | 5.3 | 0.59 | 0.53 | 32.1 |
| West: Balfour Road | | | | | | | | | | | |
| 5 | L2 | 33 | 3.0 | 0.559 | 9.0 | LOS A | 4.8 | 122.1 | 0.25 | 0.09 | 33.1 |
| 2 | T1 | 691 | 3.0 | 0.559 | 9.0 | LOS A | 4.8 | 122.1 | 0.25 | 0.09 | 33.1 |
| Approach | | 724 | 3.0 | 0.559 | 9.0 | LOS A | 4.8 | 122.1 | 0.25 | 0.09 | 33.1 |
| All Vehicles | | 1480 | 3.0 | 0.559 | 8.9 | LOS A | 4.8 | 122.1 | 0.25 | 0.10 | 33.1 |

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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# LANE LEVEL OF SERVICE

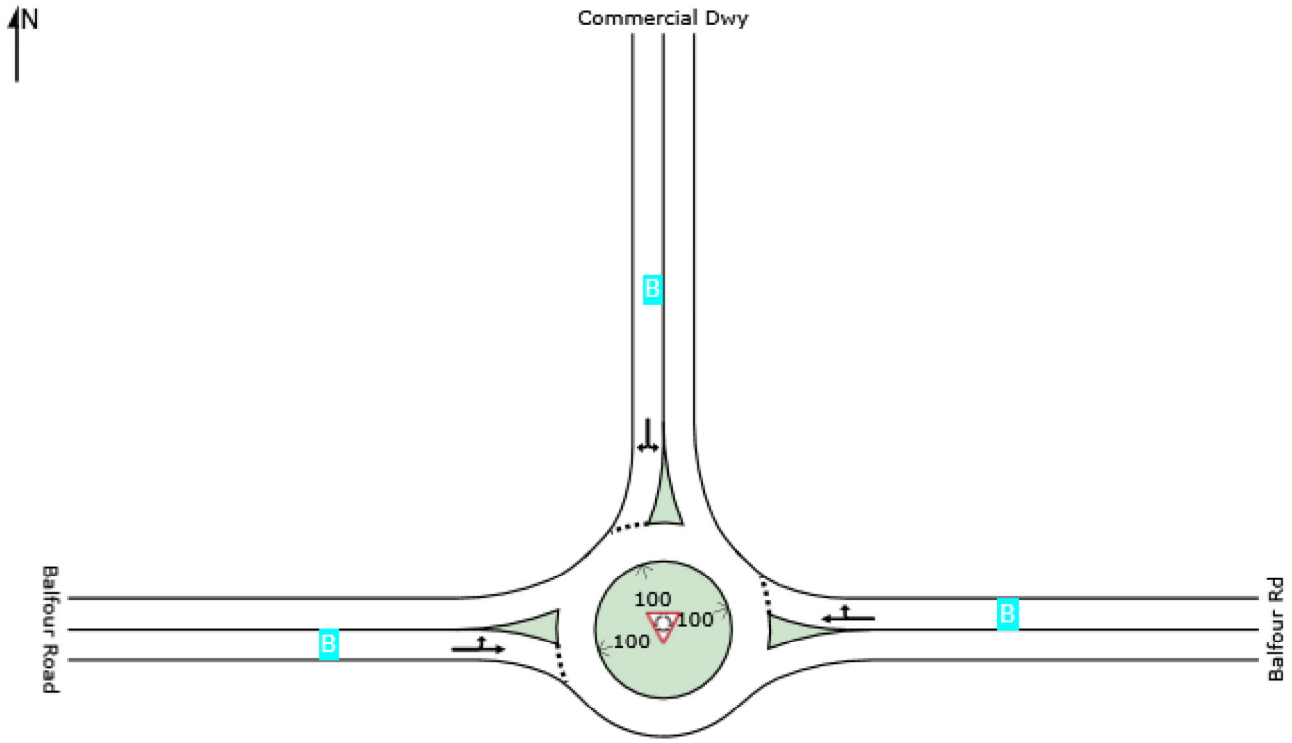
## Lane Level of Service

### Site: 6 [INT 6 - CU-PP_PM]

Vineyards at Deer Creek
Roundabout

**All Movement Classes**

| | East | North | West | Intersection |
|---|---|---|---|---|
| LOS | B | B | B | B |




Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

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# MOVEMENT SUMMARY

## Site: 6 [INT 6 - CU-PP_PM]

Vineyards at Deer Creek
Roundabout

| Movement Performance - Vehicles | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mov ID | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance ft | Prop. Queued | Effective Stop Rate per veh | Average Speed mph |
| East: Balfour Rd | | | | | | | | | | | |
| 6 | T1 | 796 | 3.0 | 0.726 | 14.1 | LOS B | 8.0 | 205.4 | 0.61 | 0.35 | 30.9 |
| 16 | R2 | 83 | 3.0 | 0.726 | 14.1 | LOS B | 8.0 | 205.4 | 0.61 | 0.35 | 30.1 |
| Approach | | 878 | 3.0 | 0.726 | 14.1 | LOS B | 8.0 | 205.4 | 0.61 | 0.35 | 30.8 |
| North: Commercial Dwy | | | | | | | | | | | |
| 7 | L2 | 177 | 3.0 | 0.339 | 11.0 | LOS B | 1.5 | 38.9 | 0.70 | 0.74 | 30.2 |
| 14 | R2 | 20 | 3.0 | 0.339 | 11.0 | LOS B | 1.5 | 38.9 | 0.70 | 0.74 | 29.4 |
| Approach | | 197 | 3.0 | 0.339 | 11.0 | LOS B | 1.5 | 38.9 | 0.70 | 0.74 | 30.1 |
| West: Balfour Road | | | | | | | | | | | |
| 5 | L2 | 98 | 3.0 | 0.653 | 12.4 | LOS B | 6.4 | 164.0 | 0.64 | 0.49 | 31.4 |
| 2 | T1 | 628 | 3.0 | 0.653 | 12.4 | LOS B | 6.4 | 164.0 | 0.64 | 0.49 | 31.3 |
| Approach | | 726 | 3.0 | 0.653 | 12.4 | LOS B | 6.4 | 164.0 | 0.64 | 0.49 | 31.3 |
| All Vehicles | | 1801 | 3.0 | 0.726 | 13.1 | LOS B | 8.0 | 205.4 | 0.63 | 0.45 | 30.9 |

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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# LANE LEVEL OF SERVICE

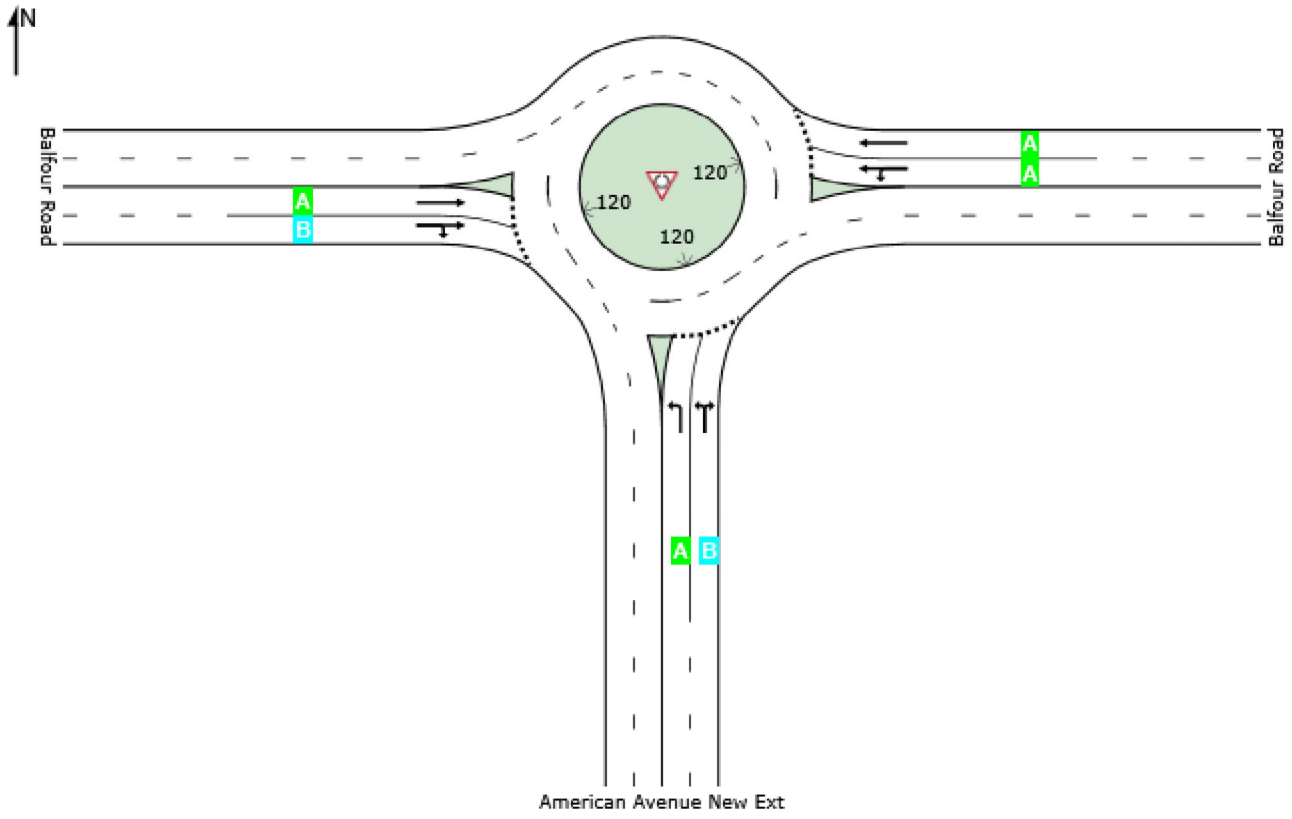
## Lane Level of Service

## Site: 7 [INT 7 - CU_PP_AM]

Vineyards at DeerCreek TIA
Roundabout

**All Movement Classes**

| | South | East | West | Intersection |
|---|---|---|---|---|
| LOS | A | A | B | A |




Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

# MOVEMENT SUMMARY

## Site: 7 [INT 7 - CU_PP_AM]

Vineyards at DeerCreek TIA
Roundabout

| Movement Performance - Vehicles | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mov ID | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance ft | Prop. Queued | Effective Stop Rate per veh | Average Speed mph |
| South: American Avenue New Ext | | | | | | | | | | | |
| 3 | L2 | 174 | 3.0 | 0.169 | 5.1 | LOS A | 0.7 | 17.4 | 0.39 | 0.28 | 33.0 |
| 18 | R2 | 620 | 3.0 | 0.563 | 10.2 | LOS B | 4.2 | 108.1 | 0.57 | 0.50 | 31.8 |
| Approach | | 793 | 3.0 | 0.563 | 9.1 | LOS A | 4.2 | 108.1 | 0.53 | 0.45 | 32.1 |
| East: Balfour Road | | | | | | | | | | | |
| 1 | L2 | 543 | 3.0 | 0.489 | 8.7 | LOS A | 2.9 | 74.1 | 0.46 | 0.32 | 31.4 |
| 6 | T1 | 547 | 3.0 | 0.462 | 7.9 | LOS A | 2.6 | 66.3 | 0.42 | 0.29 | 34.3 |
| Approach | | 1090 | 3.0 | 0.489 | 8.3 | LOS A | 2.9 | 74.1 | 0.44 | 0.30 | 32.7 |
| West: Balfour Road | | | | | | | | | | | |
| 2 | T1 | 257 | 3.0 | 0.328 | 8.5 | LOS A | 1.4 | 35.1 | 0.59 | 0.59 | 34.0 |
| 12 | R2 | 467 | 3.0 | 0.546 | 11.9 | LOS B | 4.0 | 102.1 | 0.69 | 0.82 | 31.1 |
| Approach | | 724 | 3.0 | 0.546 | 10.7 | LOS B | 4.0 | 102.1 | 0.65 | 0.74 | 32.1 |
| All Vehicles | | 2608 | 3.0 | 0.563 | 9.2 | LOS A | 4.2 | 108.1 | 0.52 | 0.47 | 32.3 |

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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# LANE LEVEL OF SERVICE

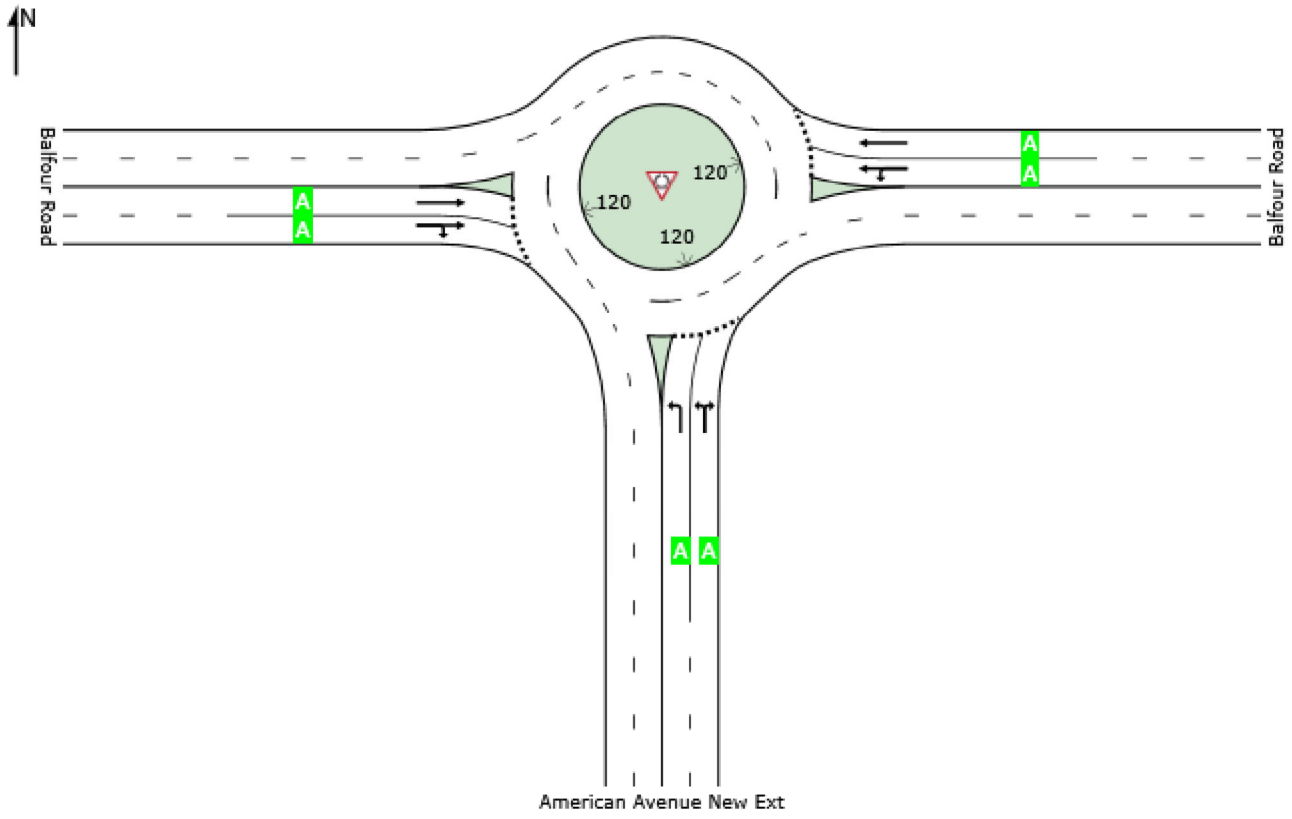
## Lane Level of Service

## Site: 7 [INT 7 - CU_PP_PM]

Vineyards at DeerCreek TIA
Roundabout

**All Movement Classes**

| | South | East | West | Intersection |
|---|---|---|---|---|
| LOS | A | A | A | A |




Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

# MOVEMENT SUMMARY

## Site: 7 [INT 7 - CU_PP_PM]

Vineyards at DeerCreek TIA
Roundabout

| Movement Performance - Vehicles | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mov ID | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance ft | Prop. Queued | Effective Stop Rate per veh | Average Speed mph |
| South: American Avenue New Ext | | | | | | | | | | | |
| 3 | L2 | 109 | 3.0 | 0.157 | 7.0 | LOS A | 0.6 | 14.6 | 0.57 | 0.57 | 32.1 |
| 18 | R2 | 217 | 3.0 | 0.285 | 8.0 | LOS A | 1.1 | 28.3 | 0.60 | 0.60 | 32.8 |
| Approach | | 326 | 3.0 | 0.285 | 7.7 | LOS A | 1.1 | 28.3 | 0.59 | 0.59 | 32.6 |
| East: Balfour Road | | | | | | | | | | | |
| 1 | L2 | 109 | 3.0 | 0.361 | 6.6 | LOS A | 1.9 | 48.0 | 0.31 | 0.17 | 34.4 |
| 6 | T1 | 770 | 3.0 | 0.361 | 6.4 | LOS A | 1.9 | 48.0 | 0.30 | 0.17 | 34.7 |
| Approach | | 878 | 3.0 | 0.361 | 6.4 | LOS A | 1.9 | 48.0 | 0.30 | 0.17 | 34.7 |
| West: Balfour Road | | | | | | | | | | | |
| 2 | T1 | 675 | 3.0 | 0.331 | 6.1 | LOS A | 1.7 | 42.4 | 0.29 | 0.16 | 35.2 |
| 12 | R2 | 130 | 3.0 | 0.331 | 5.9 | LOS A | 1.6 | 41.4 | 0.28 | 0.15 | 34.0 |
| Approach | | 805 | 3.0 | 0.331 | 6.1 | LOS A | 1.7 | 42.4 | 0.29 | 0.16 | 35.0 |
| All Vehicles | | 2010 | 3.0 | 0.361 | 6.5 | LOS A | 1.9 | 48.0 | 0.34 | 0.23 | 34.5 |

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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# LANE LEVEL OF SERVICE

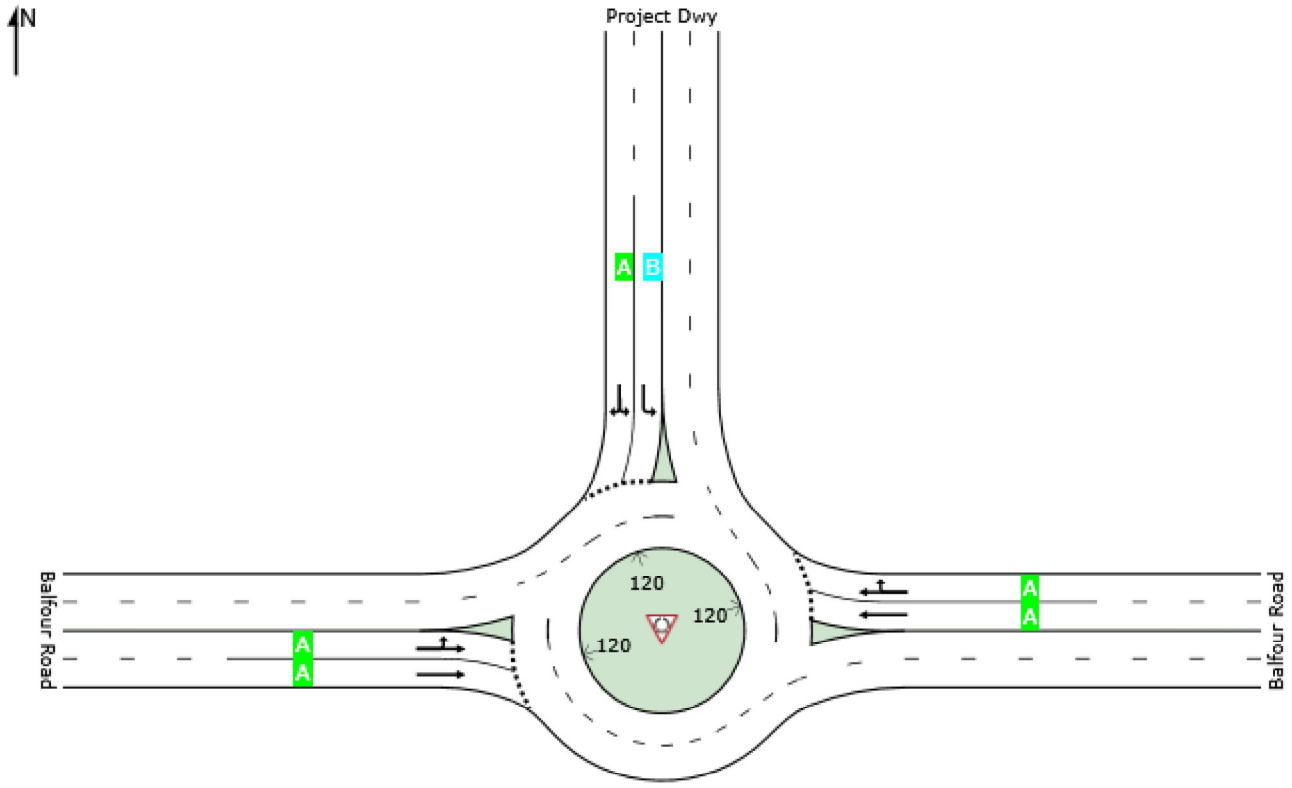
## Lane Level of Service

## Site: 7 [INT 8 - CU_PP_AM]

Vineyards at DeerCreek TIA
Roundabout

**All Movement Classes**

| | East | North | West | Intersection |
|---|---|---|---|---|
| LOS | A | B | A | A |




Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

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# MOVEMENT SUMMARY

## Site: 7 [INT 8 - CU_PP_AM]

Vineyards at DeerCreek TIA
Roundabout

| Movement Performance - Vehicles | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mov ID | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance ft | Prop. Queued | Effective Stop Rate per veh | Average Speed mph |
| East: Balfour Road | | | | | | | | | | | |
| 6 | T1 | 1065 | 3.0 | 0.452 | 7.3 | LOS A | 2.8 | 72.4 | 0.16 | 0.06 | 34.6 |
| 16 | R2 | 118 | 3.0 | 0.452 | 7.1 | LOS A | 2.8 | 70.5 | 0.16 | 0.05 | 33.4 |
| Approach | | 1184 | 3.0 | 0.452 | 7.2 | LOS A | 2.8 | 72.4 | 0.16 | 0.05 | 34.5 |
| North: Project Dwy | | | | | | | | | | | |
| 7 | L2 | 228 | 3.0 | 0.240 | 10.5 | LOS B | 0.8 | 21.4 | 0.68 | 0.68 | 30.8 |
| 14 | R2 | 16 | 3.0 | 0.240 | 9.9 | LOS A | 0.8 | 21.3 | 0.67 | 0.67 | 30.0 |
| Approach | | 245 | 3.0 | 0.240 | 10.5 | LOS B | 0.8 | 21.4 | 0.68 | 0.68 | 30.7 |
| West: Balfour Road | | | | | | | | | | | |
| 5 | L2 | 28 | 3.0 | 0.401 | 7.7 | LOS A | 2.1 | 52.6 | 0.46 | 0.35 | 34.4 |
| 2 | T1 | 848 | 3.0 | 0.401 | 7.5 | LOS A | 2.1 | 52.6 | 0.45 | 0.34 | 34.4 |
| Approach | | 876 | 3.0 | 0.401 | 7.5 | LOS A | 2.1 | 52.6 | 0.45 | 0.34 | 34.4 |
| All Vehicles | | 2304 | 3.0 | 0.452 | 7.7 | LOS A | 2.8 | 72.4 | 0.33 | 0.23 | 34.0 |

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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# LANE LEVEL OF SERVICE

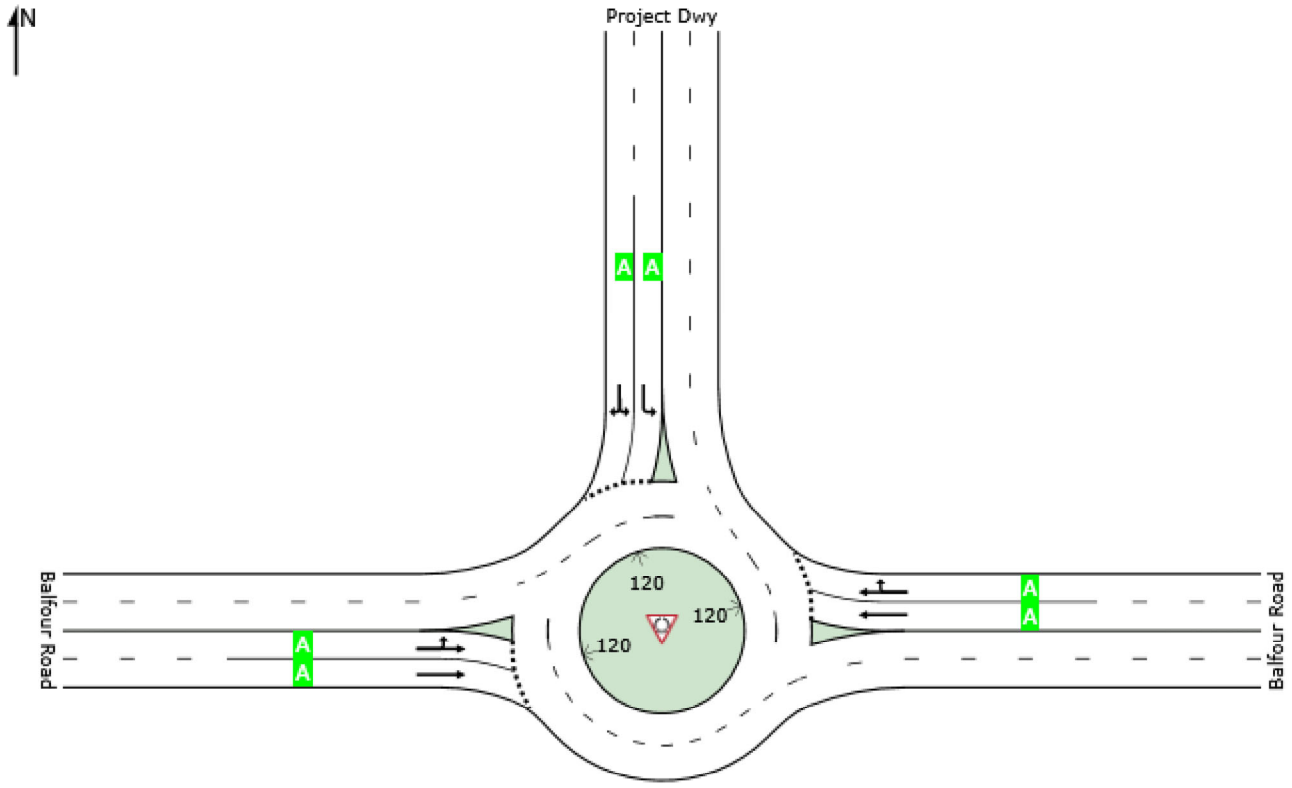
## Lane Level of Service

## Site: 7 [INT 8 - CU_PP_PM]

Vineyards at DeerCreek TIA
Roundabout

**All Movement Classes**

| | East | North | West | Intersection |
|---|---|---|---|---|
| LOS | A | A | A | A |




Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

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# MOVEMENT SUMMARY

## Site: 7 [INT 8 - CU_PP_PM]

Vineyards at DeerCreek TIA
Roundabout

| Movement Performance - Vehicles | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mov ID | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance ft | Prop. Queued | Effective Stop Rate per veh | Average Speed mph |
| East: Balfour Road | | | | | | | | | | | |
| 6 | T1 | 735 | 3.0 | 0.465 | 7.8 | LOS A | 2.8 | 72.7 | 0.31 | 0.16 | 34.3 |
| 16 | R2 | 422 | 3.0 | 0.465 | 7.6 | LOS A | 2.8 | 71.0 | 0.30 | 0.15 | 33.1 |
| Approach | | 1157 | 3.0 | 0.465 | 7.7 | LOS A | 2.8 | 72.7 | 0.30 | 0.16 | 33.9 |
| North: Project Dwy | | | | | | | | | | | |
| 7 | L2 | 198 | 3.0 | 0.153 | 7.0 | LOS A | 0.5 | 14.0 | 0.58 | 0.58 | 32.3 |
| 14 | R2 | 13 | 3.0 | 0.153 | 6.6 | LOS A | 0.5 | 13.9 | 0.57 | 0.57 | 31.3 |
| Approach | | 211 | 3.0 | 0.153 | 6.9 | LOS A | 0.5 | 14.0 | 0.58 | 0.58 | 32.2 |
| West: Balfour Road | | | | | | | | | | | |
| 5 | L2 | 85 | 3.0 | 0.398 | 7.5 | LOS A | 2.1 | 52.8 | 0.43 | 0.31 | 34.1 |
| 2 | T1 | 809 | 3.0 | 0.398 | 7.3 | LOS A | 2.1 | 52.8 | 0.42 | 0.30 | 34.3 |
| Approach | | 893 | 3.0 | 0.398 | 7.3 | LOS A | 2.1 | 52.8 | 0.42 | 0.30 | 34.3 |
| All Vehicles | | 2261 | 3.0 | 0.465 | 7.5 | LOS A | 2.8 | 72.7 | 0.38 | 0.25 | 33.9 |

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

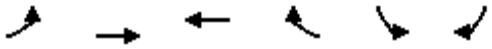
**SIDRA INTERSECTION 7.0 | Copyright © 2000-2017 Akcelik and Associates Pty Ltd | sidrasolutions.com**



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 66 | 564 | 110 | 108 | 560 | 60 |
| Future Volume (veh/h) | 66 | 564 | 110 | 108 | 560 | 60 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1900 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 69 | 594 | 116 | 114 | 589 | 63 |
| Adj No. of Lanes | 1 | 1 | 1 | 0 | 1 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 468 | 1001 | 146 | 144 | 653 | 1124 |
| Arrive On Green | 0.26 | 0.26 | 0.17 | 0.17 | 0.37 | 0.60 |
| Sat Flow, veh/h | 1774 | 1583 | 864 | 849 | 1774 | 1863 |
| Grp Volume(v), veh/h | 69 | 594 | 0 | 230 | 589 | 63 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1583 | 0 | 1713 | 1774 | 1863 |
| Q Serve(g_s), s | 2.0 | 15.0 | 0.0 | 8.7 | 21.3 | 0.9 |
| Cycle Q Clear(g_c), s | 2.0 | 15.0 | 0.0 | 8.7 | 21.3 | 0.9 |
| Prop In Lane | 1.00 | 1.00 | | 0.50 | 1.00 | |
| Lane Grp Cap(c), veh/h | 468 | 1001 | 0 | 290 | 653 | 1124 |
| V/C Ratio(X) | 0.15 | 0.59 | 0.00 | 0.79 | 0.90 | 0.06 |
| Avail Cap(c_a), veh/h | 536 | 1061 | 0 | 492 | 954 | 1660 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 19.1 | 7.4 | 0.0 | 27.1 | 20.3 | 5.5 |
| Incr Delay (d2), s/veh | 0.1 | 0.8 | 0.0 | 4.9 | 8.5 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.0 | 6.7 | 0.0 | 4.5 | 11.9 | 0.5 |
| LnGrp Delay(d),s/veh | 19.3 | 8.2 | 0.0 | 32.0 | 28.8 | 5.5 |
| LnGrp LOS | B | A | | C | C | A |
| Approach Vol, veh/h | 663 | | 230 | | | 652 |
| Approach Delay, s/veh | 9.3 | | 32.0 | | | 26.6 |
| Approach LOS | A | | C | | | C |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 29.5 | 16.0 | | | | 45.5 | | 22.4 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | | | | 4.5 | | 4.5 |
| Max Green Setting (Gmax), s | 36.5 | 19.5 | | | | 60.5 | | 20.5 |
| Max Q Clear Time (g_c+I1), s | 23.3 | 10.7 | | | | 2.9 | | 17.0 |
| Green Ext Time (p_c), s | 1.6 | 0.7 | | | | 0.3 | | 0.9 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 20.0 |
| HCM 2010 LOS | B |



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 90 | 578 | 612 | 76 | 163 | 18 |
| Future Volume (veh/h) | 90 | 578 | 612 | 76 | 163 | 18 |
| Number | 7 | 4 | 8 | 18 | 1 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 95 | 608 | 644 | 80 | 172 | 19 |
| Adj No. of Lanes | 1 | 1 | 1 | 1 | 1 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 142 | 1182 | 831 | 706 | 265 | 237 |
| Arrive On Green | 0.08 | 0.63 | 0.45 | 0.45 | 0.15 | 0.15 |
| Sat Flow, veh/h | 1774 | 1863 | 1863 | 1583 | 1774 | 1583 |
| Grp Volume(v), veh/h | 95 | 608 | 644 | 80 | 172 | 19 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1863 | 1863 | 1583 | 1774 | 1583 |
| Q Serve(g_s), s | 2.2 | 7.4 | 12.2 | 1.2 | 3.8 | 0.4 |
| Cycle Q Clear(g_c), s | 2.2 | 7.4 | 12.2 | 1.2 | 3.8 | 0.4 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 142 | 1182 | 831 | 706 | 265 | 237 |
| V/C Ratio(X) | 0.67 | 0.51 | 0.77 | 0.11 | 0.65 | 0.08 |
| Avail Cap(c_a), veh/h | 447 | 2751 | 2080 | 1768 | 831 | 742 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 18.6 | 4.1 | 9.8 | 6.7 | 16.7 | 15.2 |
| Incr Delay (d2), s/veh | 5.3 | 0.3 | 1.6 | 0.1 | 2.7 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.3 | 3.8 | 6.4 | 0.5 | 2.1 | 0.4 |
| LnGrp Delay(d),s/veh | 24.0 | 4.5 | 11.3 | 6.8 | 19.3 | 15.4 |
| LnGrp LOS | C | A | B | A | B | B |
| Approach Vol, veh/h | | 703 | 724 | | 191 | |
| Approach Delay, s/veh | | 7.1 | 10.8 | | 18.9 | |
| Approach LOS | | A | B | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | | | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | | | 30.9 | | 10.7 | 7.8 | 23.1 |
| Change Period (Y+Rc), s | | | | 4.5 | | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | | | | 61.5 | | 19.5 | 10.5 | 46.5 |
| Max Q Clear Time (g_c+I1), s | | | | 9.4 | | 5.8 | 4.2 | 14.2 |
| Green Ext Time (p_c), s | | | | 4.1 | | 0.4 | 0.1 | 4.4 |

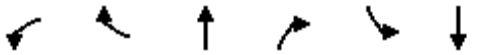
| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 10.2 |
| HCM 2010 LOS | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 482 | 1105 | 239 | 80 | 899 | 180 | 348 | 630 | 200 | 330 | 270 | 484 |
| Future Volume (veh/h) | 482 | 1105 | 239 | 80 | 899 | 180 | 348 | 630 | 200 | 330 | 270 | 484 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 7 | 4 | 14 | 3 | 8 | 18 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 507 | 1163 | 244 | 84 | 946 | 100 | 366 | 663 | 175 | 347 | 284 | 0 |
| Adj No. of Lanes | 2 | 2 | 0 | 1 | 2 | 1 | 2 | 2 | 0 | 2 | 2 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 558 | 1288 | 268 | 309 | 1641 | 724 | 397 | 729 | 192 | 371 | 920 | 412 |
| Arrive On Green | 0.16 | 0.44 | 0.43 | 0.17 | 0.46 | 0.46 | 0.12 | 0.26 | 0.26 | 0.11 | 0.26 | 0.00 |
| Sat Flow, veh/h | 3442 | 2917 | 608 | 1774 | 3539 | 1562 | 3442 | 2771 | 731 | 3442 | 3539 | 1583 |
| Grp Volume(v), veh/h | 507 | 702 | 705 | 84 | 946 | 100 | 366 | 423 | 415 | 347 | 284 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1770 | 1755 | 1774 | 1770 | 1562 | 1721 | 1770 | 1732 | 1721 | 1770 | 1583 |
| Q Serve(g_s), s | 18.8 | 47.8 | 48.8 | 5.3 | 25.4 | 4.8 | 13.7 | 30.1 | 30.2 | 13.0 | 8.4 | 0.0 |
| Cycle Q Clear(g_c), s | 18.8 | 47.8 | 48.8 | 5.3 | 25.4 | 4.8 | 13.7 | 30.1 | 30.2 | 13.0 | 8.4 | 0.0 |
| Prop In Lane | 1.00 | | 0.35 | 1.00 | | 1.00 | 1.00 | | 0.42 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 558 | 781 | 775 | 309 | 1641 | 724 | 397 | 465 | 455 | 371 | 920 | 412 |
| V/C Ratio(X) | 0.91 | 0.90 | 0.91 | 0.27 | 0.58 | 0.14 | 0.92 | 0.91 | 0.91 | 0.94 | 0.31 | 0.00 |
| Avail Cap(c_a), veh/h | 582 | 781 | 775 | 309 | 1641 | 724 | 397 | 485 | 474 | 371 | 942 | 421 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.74 | 0.74 | 0.74 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 53.5 | 33.6 | 34.1 | 46.5 | 25.5 | 20.0 | 56.9 | 46.4 | 46.4 | 57.6 | 38.7 | 0.0 |
| Incr Delay (d2), s/veh | 14.0 | 12.0 | 13.0 | 0.5 | 1.5 | 0.4 | 26.6 | 20.7 | 21.2 | 30.9 | 0.2 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 10.0 | 25.8 | 26.3 | 2.7 | 12.7 | 2.1 | 8.0 | 17.4 | 17.1 | 7.8 | 4.1 | 0.0 |
| LnGrp Delay(d),s/veh | 67.5 | 45.6 | 47.1 | 47.0 | 27.0 | 20.4 | 83.6 | 67.1 | 67.6 | 88.5 | 38.9 | 0.0 |
| LnGrp LOS | E | D | D | D | C | C | F | E | E | F | D | |
| Approach Vol, veh/h | | 1914 | | | 1130 | | | 1204 | | | 631 | |
| Approach Delay, s/veh | | 52.0 | | | 27.9 | | | 72.3 | | | 66.2 | |
| Approach LOS | | D | | | C | | | E | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 28.4 | 61.4 | 18.6 | 38.2 | 25.1 | 64.7 | 19.0 | 37.8 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 4.6 | * 4.6 | 4.0 | 5.3 | 4.0 | 4.6 |
| Max Green Setting (Gmax), s | 7.0 | * 56 | 14.0 | * 35 | 22.0 | 41.1 | 15.0 | 34.0 |
| Max Q Clear Time (g_c+I1), s | 7.3 | 50.8 | 15.0 | 32.2 | 20.8 | 27.4 | 15.7 | 10.4 |
| Green Ext Time (p_c), s | 0.0 | 4.0 | 0.0 | 1.4 | 0.3 | 6.2 | 0.0 | 1.7 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 53.2 |
| HCM 2010 LOS | D |

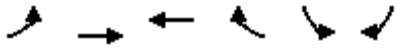
Notes



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 105 | 533 | 50 | 113 | 553 | 40 |
| Future Volume (veh/h) | 105 | 533 | 50 | 113 | 553 | 40 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1900 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 111 | 561 | 53 | 119 | 582 | 42 |
| Adj No. of Lanes | 1 | 1 | 1 | 0 | 1 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 454 | 994 | 73 | 164 | 659 | 1101 |
| Arrive On Green | 0.26 | 0.26 | 0.14 | 0.14 | 0.37 | 0.59 |
| Sat Flow, veh/h | 1774 | 1583 | 512 | 1149 | 1774 | 1863 |
| Grp Volume(v), veh/h | 111 | 561 | 0 | 172 | 582 | 42 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1583 | 0 | 1660 | 1774 | 1863 |
| Q Serve(g_s), s | 2.9 | 12.0 | 0.0 | 5.8 | 18.0 | 0.6 |
| Cycle Q Clear(g_c), s | 2.9 | 12.0 | 0.0 | 5.8 | 18.0 | 0.6 |
| Prop In Lane | 1.00 | 1.00 | | 0.69 | 1.00 | |
| Lane Grp Cap(c), veh/h | 454 | 994 | 0 | 237 | 659 | 1101 |
| V/C Ratio(X) | 0.24 | 0.56 | 0.00 | 0.73 | 0.88 | 0.04 |
| Avail Cap(c_a), veh/h | 544 | 1074 | 0 | 509 | 1223 | 1998 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 17.4 | 6.3 | 0.0 | 24.1 | 17.3 | 5.0 |
| Incr Delay (d2), s/veh | 0.3 | 0.6 | 0.0 | 4.2 | 4.1 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.5 | 5.3 | 0.0 | 3.0 | 9.5 | 0.3 |
| LnGrp Delay(d),s/veh | 17.6 | 6.9 | 0.0 | 28.3 | 21.4 | 5.0 |
| LnGrp LOS | B | A | | C | C | A |
| Approach Vol, veh/h | 672 | | 172 | | | 624 |
| Approach Delay, s/veh | 8.7 | | 28.3 | | | 20.3 |
| Approach LOS | A | | C | | | C |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 26.3 | 12.9 | | | | 39.2 | | 19.5 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | | | | 4.5 | | 4.5 |
| Max Green Setting (Gmax), s | 40.5 | 18.0 | | | | 63.0 | | 18.0 |
| Max Q Clear Time (g_c+I1), s | 20.0 | 7.8 | | | | 2.6 | | 14.0 |
| Green Ext Time (p_c), s | 1.8 | 0.6 | | | | 0.2 | | 1.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 15.9 |
| HCM 2010 LOS | B |



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 30 | 636 | 635 | 28 | 30 | 3 |
| Future Volume (veh/h) | 30 | 636 | 635 | 28 | 30 | 3 |
| Number | 7 | 4 | 8 | 18 | 1 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 32 | 669 | 668 | 29 | 32 | 3 |
| Adj No. of Lanes | 1 | 1 | 1 | 1 | 1 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 67 | 1169 | 875 | 744 | 236 | 211 |
| Arrive On Green | 0.04 | 0.63 | 0.47 | 0.47 | 0.13 | 0.13 |
| Sat Flow, veh/h | 1774 | 1863 | 1863 | 1583 | 1774 | 1583 |
| Grp Volume(v), veh/h | 32 | 669 | 668 | 29 | 32 | 3 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1863 | 1863 | 1583 | 1774 | 1583 |
| Q Serve(g_s), s | 0.7 | 7.8 | 11.1 | 0.4 | 0.6 | 0.1 |
| Cycle Q Clear(g_c), s | 0.7 | 7.8 | 11.1 | 0.4 | 0.6 | 0.1 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 67 | 1169 | 875 | 744 | 236 | 211 |
| V/C Ratio(X) | 0.48 | 0.57 | 0.76 | 0.04 | 0.14 | 0.01 |
| Avail Cap(c_a), veh/h | 307 | 3049 | 2504 | 2128 | 921 | 822 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 17.7 | 4.1 | 8.2 | 5.4 | 14.4 | 14.1 |
| Incr Delay (d2), s/veh | 5.2 | 0.4 | 1.4 | 0.0 | 0.3 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.4 | 4.0 | 5.9 | 0.2 | 0.3 | 0.1 |
| LnGrp Delay(d),s/veh | 22.9 | 4.5 | 9.6 | 5.4 | 14.6 | 14.2 |
| LnGrp LOS | C | A | A | A | B | B |
| Approach Vol, veh/h | | 701 | 697 | | 35 | |
| Approach Delay, s/veh | | 5.4 | 9.5 | | 14.6 | |
| Approach LOS | | A | A | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | | | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | | | 28.1 | | 9.5 | 5.9 | 22.1 |
| Change Period (Y+Rc), s | | | | 4.5 | | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | | | | 61.5 | | 19.5 | 6.5 | 50.5 |
| Max Q Clear Time (g_c+I1), s | | | | 9.8 | | 2.6 | 2.7 | 13.1 |
| Green Ext Time (p_c), s | | | | 4.7 | | 0.0 | 0.0 | 4.5 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 7.6 |
| HCM 2010 LOS | A |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 281 | 765 | 175 | 80 | 884 | 220 | 183 | 130 | 60 | 270 | 260 | 628 |
| Future Volume (veh/h) | 281 | 765 | 175 | 80 | 884 | 220 | 183 | 130 | 60 | 270 | 260 | 628 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 7 | 4 | 14 | 3 | 8 | 18 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 0.99 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 296 | 805 | 176 | 84 | 931 | 143 | 193 | 137 | 27 | 284 | 274 | 0 |
| Adj No. of Lanes | 2 | 2 | 0 | 1 | 2 | 1 | 2 | 2 | 0 | 2 | 2 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 343 | 1042 | 228 | 558 | 2073 | 915 | 244 | 260 | 50 | 340 | 427 | 191 |
| Arrive On Green | 0.20 | 0.72 | 0.70 | 0.31 | 0.59 | 0.59 | 0.07 | 0.09 | 0.09 | 0.10 | 0.12 | 0.00 |
| Sat Flow, veh/h | 3442 | 2889 | 632 | 1774 | 3539 | 1562 | 3442 | 2958 | 569 | 3442 | 3539 | 1583 |
| Grp Volume(v), veh/h | 296 | 493 | 488 | 84 | 931 | 143 | 193 | 81 | 83 | 284 | 274 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1770 | 1751 | 1774 | 1770 | 1562 | 1721 | 1770 | 1758 | 1721 | 1770 | 1583 |
| Q Serve(g_s), s | 10.8 | 22.8 | 23.1 | 4.4 | 19.2 | 5.4 | 7.2 | 5.7 | 5.9 | 10.5 | 9.6 | 0.0 |
| Cycle Q Clear(g_c), s | 10.8 | 22.8 | 23.1 | 4.4 | 19.2 | 5.4 | 7.2 | 5.7 | 5.9 | 10.5 | 9.6 | 0.0 |
| Prop In Lane | 1.00 | | 0.36 | 1.00 | | 1.00 | 1.00 | | 0.32 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 343 | 638 | 632 | 558 | 2073 | 915 | 244 | 156 | 155 | 340 | 427 | 191 |
| V/C Ratio(X) | 0.86 | 0.77 | 0.77 | 0.15 | 0.45 | 0.16 | 0.79 | 0.52 | 0.54 | 0.83 | 0.64 | 0.00 |
| Avail Cap(c_a), veh/h | 371 | 638 | 632 | 558 | 2073 | 915 | 265 | 573 | 569 | 424 | 1310 | 586 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.91 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 51.2 | 14.7 | 15.2 | 32.1 | 15.1 | 12.3 | 59.4 | 56.6 | 56.8 | 57.5 | 54.5 | 0.0 |
| Incr Delay (d2), s/veh | 16.4 | 8.1 | 8.2 | 0.1 | 0.7 | 0.4 | 14.0 | 2.6 | 2.9 | 11.2 | 1.6 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 5.9 | 12.1 | 12.3 | 2.2 | 9.5 | 2.4 | 3.9 | 2.9 | 3.0 | 5.5 | 4.8 | 0.0 |
| LnGrp Delay(d),s/veh | 67.6 | 22.9 | 23.4 | 32.2 | 15.8 | 12.6 | 73.4 | 59.3 | 59.6 | 68.7 | 56.1 | 0.0 |
| LnGrp LOS | E | C | C | C | B | B | E | E | E | E | E | |
| Approach Vol, veh/h | | 1277 | | | 1158 | | | 357 | | | 558 | |
| Approach Delay, s/veh | | 33.4 | | | 16.6 | | | 67.0 | | | 62.5 | |
| Approach LOS | | C | | | B | | | E | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 16.2 | 50.9 | 17.5 | 15.4 | 16.9 | 80.2 | 13.2 | 19.7 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 4.6 | * 4.6 | 4.0 | 5.3 | 4.0 | 4.6 |
| Max Green Setting (Gmax), s | 9.0 | * 46 | 16.0 | * 42 | 14.0 | 40.6 | 10.0 | 47.5 |
| Max Q Clear Time (g_c+I1), s | 10.4 | 25.1 | 12.5 | 7.9 | 12.8 | 21.2 | 9.2 | 11.6 |
| Green Ext Time (p_c), s | 0.0 | 7.1 | 0.3 | 0.9 | 0.1 | 7.6 | 0.1 | 1.8 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 36.0 |
| HCM 2010 LOS | D |

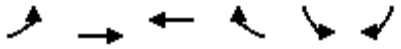
Notes



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 51 | 433 | 39 | 85 | 502 | 47 |
| Future Volume (veh/h) | 51 | 433 | 39 | 85 | 502 | 47 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1900 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 55 | 466 | 42 | 91 | 540 | 51 |
| Adj No. of Lanes | 1 | 1 | 1 | 0 | 1 | 1 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 567 | 506 | 61 | 133 | 612 | 995 |
| Arrive On Green | 0.32 | 0.32 | 0.12 | 0.12 | 0.34 | 0.53 |
| Sat Flow, veh/h | 1774 | 1583 | 525 | 1137 | 1774 | 1863 |
| Grp Volume(v), veh/h | 55 | 466 | 0 | 133 | 540 | 51 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1583 | 0 | 1662 | 1774 | 1863 |
| Q Serve(g_s), s | 1.3 | 17.5 | 0.0 | 4.7 | 17.7 | 0.8 |
| Cycle Q Clear(g_c), s | 1.3 | 17.5 | 0.0 | 4.7 | 17.7 | 0.8 |
| Prop In Lane | 1.00 | 1.00 | | 0.68 | 1.00 | |
| Lane Grp Cap(c), veh/h | 567 | 506 | 0 | 194 | 612 | 995 |
| V/C Ratio(X) | 0.10 | 0.92 | 0.00 | 0.69 | 0.88 | 0.05 |
| Avail Cap(c_a), veh/h | 589 | 526 | 0 | 525 | 1049 | 1827 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 14.7 | 20.2 | 0.0 | 26.2 | 19.0 | 6.9 |
| Incr Delay (d2), s/veh | 0.1 | 21.2 | 0.0 | 4.2 | 4.9 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.7 | 10.6 | 0.0 | 2.4 | 9.4 | 0.4 |
| LnGrp Delay(d),s/veh | 14.8 | 41.4 | 0.0 | 30.4 | 23.9 | 6.9 |
| LnGrp LOS | B | D | | C | C | A |
| Approach Vol, veh/h | 521 | | 133 | | | 591 |
| Approach Delay, s/veh | 38.6 | | 30.4 | | | 22.4 |
| Approach LOS | D | | C | | | C |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 25.8 | 11.7 | | | | 37.5 | | 24.2 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | | | | 4.5 | | 4.5 |
| Max Green Setting (Gmax), s | 36.5 | 19.5 | | | | 60.5 | | 20.5 |
| Max Q Clear Time (g_c+I1), s | 19.7 | 6.7 | | | | 2.8 | | 19.5 |
| Green Ext Time (p_c), s | 1.6 | 0.5 | | | | 0.2 | | 0.2 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 30.1 |
| HCM 2010 LOS | C |



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 56 | 531 | 466 | 110 | 163 | 18 |
| Future Volume (veh/h) | 56 | 531 | 466 | 110 | 163 | 18 |
| Number | 7 | 4 | 8 | 18 | 1 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 61 | 577 | 507 | 120 | 177 | 20 |
| Adj No. of Lanes | 1 | 1 | 1 | 1 | 1 | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 114 | 1076 | 717 | 609 | 291 | 260 |
| Arrive On Green | 0.06 | 0.58 | 0.38 | 0.38 | 0.16 | 0.16 |
| Sat Flow, veh/h | 1774 | 1863 | 1863 | 1583 | 1774 | 1583 |
| Grp Volume(v), veh/h | 61 | 577 | 507 | 120 | 177 | 20 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1863 | 1863 | 1583 | 1774 | 1583 |
| Q Serve(g_s), s | 1.2 | 6.6 | 8.0 | 1.8 | 3.2 | 0.4 |
| Cycle Q Clear(g_c), s | 1.2 | 6.6 | 8.0 | 1.8 | 3.2 | 0.4 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 114 | 1076 | 717 | 609 | 291 | 260 |
| V/C Ratio(X) | 0.54 | 0.54 | 0.71 | 0.20 | 0.61 | 0.08 |
| Avail Cap(c_a), veh/h | 534 | 3126 | 2325 | 1976 | 1145 | 1022 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 15.8 | 4.5 | 9.1 | 7.1 | 13.5 | 12.3 |
| Incr Delay (d2), s/veh | 3.9 | 0.4 | 1.3 | 0.2 | 2.1 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.7 | 3.3 | 4.3 | 0.8 | 1.7 | 0.4 |
| LnGrp Delay(d),s/veh | 19.7 | 4.9 | 10.4 | 7.3 | 15.6 | 12.5 |
| LnGrp LOS | B | A | B | A | B | B |
| Approach Vol, veh/h | | 638 | 627 | | 197 | |
| Approach Delay, s/veh | | 6.3 | 9.8 | | 15.3 | |
| Approach LOS | | A | A | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | | | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | | | 24.6 | | 10.2 | 6.7 | 17.9 |
| Change Period (Y+Rc), s | | | | 4.5 | | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | | | | 58.5 | | 22.5 | 10.5 | 43.5 |
| Max Q Clear Time (g_c+I1), s | | | | 8.6 | | 5.2 | 3.2 | 10.0 |
| Green Ext Time (p_c), s | | | | 3.8 | | 0.5 | 0.1 | 3.4 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 9.0 |
| HCM 2010 LOS | A |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.3 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 1521 | 87 | 64 | 1393 | 0 | 65 |
| Future Vol, veh/h | 1521 | 87 | 64 | 1393 | 0 | 65 |
| Conflicting Peds, #/hr | 0 | 12 | 12 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 150 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 74 | 74 | 74 | 74 | 74 | 74 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 2055 | 118 | 86 | 1882 | 0 | 88 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 2185 | 0 | 3239 | 1099 |
| Stage 1 | - | - | - | - | 2126 | - |
| Stage 2 | - | - | - | - | 1113 | - |
| Critical Hdwy | - | - | 4.14 | - | 6.84 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 | - |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 | 3.32 |
| Pot Cap-1 Maneuver | - | - | 239 | - | 7 | 207 |
| Stage 1 | - | - | - | - | 77 | - |
| Stage 2 | - | - | - | - | 276 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 236 | - | 4 | 205 |
| Mov Cap-2 Maneuver | - | - | - | - | 4 | - |
| Stage 1 | - | - | - | - | 48 | - |
| Stage 2 | - | - | - | - | 276 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 1.3 | 35.1 |
| HCM LOS | | | E |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 205 | - | - | 236 | - |
| HCM Lane V/C Ratio | 0.428 | - | - | 0.366 | - |
| HCM Control Delay (s) | 35.1 | - | - | 28.8 | - |
| HCM Lane LOS | E | - | - | D | - |
| HCM 95th %tile Q(veh) | 2 | - | - | 1.6 | - |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 109 | 1348 | 141 | 77 | 1311 | 148 | 88 | 60 | 51 | 85 | 43 | 33 |
| Future Volume (veh/h) | 109 | 1348 | 141 | 77 | 1311 | 148 | 88 | 60 | 51 | 85 | 43 | 33 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.97 | 1.00 | | 0.97 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 138 | 1706 | 172 | 97 | 1659 | 187 | 111 | 76 | -26 | 108 | 54 | -30 |
| Adj No. of Lanes | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 136 | 1713 | 170 | 339 | 2091 | 231 | 109 | 141 | 120 | 109 | 141 | 0 |
| Arrive On Green | 0.08 | 0.53 | 0.53 | 0.19 | 0.65 | 0.65 | 0.06 | 0.08 | 0.00 | 0.06 | 0.08 | 0.00 |
| Sat Flow, veh/h | 1774 | 3241 | 321 | 1774 | 3202 | 354 | 1774 | 1863 | 1583 | 1774 | 1863 | 0 |
| Grp Volume(v), veh/h | 138 | 917 | 961 | 97 | 903 | 943 | 111 | 76 | -26 | 108 | 24 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1793 | 1774 | 1770 | 1787 | 1774 | 1863 | 1583 | 1774 | 1863 | 0 |
| Q Serve(g_s), s | 10.0 | 66.0 | 68.7 | 6.1 | 47.0 | 50.4 | 8.0 | 5.1 | 0.0 | 7.9 | 1.6 | 0.0 |
| Cycle Q Clear(g_c), s | 10.0 | 66.0 | 68.7 | 6.1 | 47.0 | 50.4 | 8.0 | 5.1 | 0.0 | 7.9 | 1.6 | 0.0 |
| Prop In Lane | 1.00 | | 0.18 | 1.00 | | 0.20 | 1.00 | | 1.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 136 | 935 | 947 | 339 | 1155 | 1166 | 109 | 141 | 120 | 109 | 141 | 0 |
| V/C Ratio(X) | 1.01 | 0.98 | 1.01 | 0.29 | 0.78 | 0.81 | 1.02 | 0.54 | -0.22 | 0.99 | 0.17 | 0.00 |
| Avail Cap(c_a), veh/h | 136 | 935 | 947 | 339 | 1155 | 1166 | 109 | 416 | 353 | 109 | 416 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.66 | 0.66 | 0.66 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 60.0 | 30.0 | 30.7 | 45.0 | 16.0 | 16.6 | 61.0 | 57.9 | 0.0 | 61.0 | 56.3 | 0.0 |
| Incr Delay (d2), s/veh | 80.0 | 25.2 | 32.8 | 0.1 | 3.5 | 4.1 | 90.7 | 4.5 | 0.0 | 82.4 | 0.8 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 7.9 | 38.7 | 42.6 | 3.0 | 24.0 | 25.9 | 6.7 | 2.8 | 0.0 | 6.4 | 0.8 | 0.0 |
| LnGrp Delay(d),s/veh | 140.1 | 55.2 | 63.4 | 45.1 | 19.5 | 20.7 | 151.8 | 62.4 | 0.0 | 143.4 | 57.1 | 0.0 |
| LnGrp LOS | F | E | F | D | B | C | F | E | | F | E | |
| Approach Vol, veh/h | | 2016 | | | 1943 | | | 161 | | | 132 | |
| Approach Delay, s/veh | | 64.9 | | | 21.3 | | | 134.2 | | | 127.7 | |
| Approach LOS | | E | | | C | | | F | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 30.2 | 74.0 | 12.0 | 13.8 | 14.0 | 90.2 | 12.0 | 13.8 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 4.0 | 4.0 | 4.0 | 5.3 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 7.0 | * 69 | 8.0 | 29.0 | 10.0 | 65.7 | 8.0 | 29.0 |
| Max Q Clear Time (g_c+I1), s | 8.1 | 70.7 | 10.0 | 3.6 | 12.0 | 52.4 | 9.9 | 7.1 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 13.1 | 0.0 | 0.5 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 49.6 |
| HCM 2010 LOS | D |

Notes

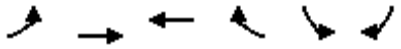


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 65 | 1411 | 25 | 359 | 1502 | 79 | 45 | 34 | 317 | 186 | 40 | 64 |
| Future Volume (veh/h) | 65 | 1411 | 25 | 359 | 1502 | 79 | 45 | 34 | 317 | 186 | 40 | 64 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.98 | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 0.99 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 71 | 1551 | 18 | 395 | 1651 | 86 | 49 | 37 | 73 | 204 | 44 | 29 |
| Adj No. of Lanes | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 391 | 2077 | 915 | 344 | 1621 | 722 | 72 | 182 | 153 | 177 | 164 | 108 |
| Arrive On Green | 0.22 | 0.59 | 0.59 | 0.10 | 0.46 | 0.46 | 0.04 | 0.10 | 0.10 | 0.10 | 0.16 | 0.16 |
| Sat Flow, veh/h | 1774 | 3539 | 1559 | 3442 | 3539 | 1576 | 1774 | 1863 | 1569 | 1774 | 1047 | 690 |
| Grp Volume(v), veh/h | 71 | 1551 | 18 | 395 | 1651 | 86 | 49 | 37 | 73 | 204 | 0 | 73 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1559 | 1721 | 1770 | 1576 | 1774 | 1863 | 1569 | 1774 | 0 | 1736 |
| Q Serve(g_s), s | 4.9 | 48.3 | 0.7 | 15.0 | 68.7 | 3.3 | 4.1 | 2.7 | 6.6 | 15.0 | 0.0 | 5.5 |
| Cycle Q Clear(g_c), s | 4.9 | 48.3 | 0.7 | 15.0 | 68.7 | 3.3 | 4.1 | 2.7 | 6.6 | 15.0 | 0.0 | 5.5 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.40 |
| Lane Grp Cap(c), veh/h | 391 | 2077 | 915 | 344 | 1621 | 722 | 72 | 182 | 153 | 177 | 0 | 273 |
| V/C Ratio(X) | 0.18 | 0.75 | 0.02 | 1.15 | 1.02 | 0.12 | 0.68 | 0.20 | 0.48 | 1.15 | 0.00 | 0.27 |
| Avail Cap(c_a), veh/h | 391 | 2077 | 915 | 344 | 1621 | 722 | 106 | 522 | 439 | 177 | 0 | 556 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.73 | 0.73 | 0.73 | 0.74 | 0.74 | 0.74 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 47.5 | 22.8 | 12.9 | 67.5 | 40.7 | 11.5 | 71.0 | 62.3 | 64.0 | 67.5 | 0.0 | 55.6 |
| Incr Delay (d2), s/veh | 0.1 | 1.8 | 0.0 | 89.0 | 24.1 | 0.3 | 4.1 | 0.2 | 0.9 | 113.7 | 0.0 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.4 | 24.0 | 0.3 | 11.4 | 39.0 | 1.5 | 2.1 | 1.4 | 2.9 | 12.9 | 0.0 | 2.7 |
| LnGrp Delay(d),s/veh | 47.6 | 24.6 | 13.0 | 156.5 | 64.7 | 11.7 | 75.1 | 62.5 | 64.9 | 181.2 | 0.0 | 55.8 |
| LnGrp LOS | D | C | B | F | F | B | E | E | E | F | | E |
| Approach Vol, veh/h | | 1640 | | | 2132 | | | 159 | | | 277 | |
| Approach Delay, s/veh | | 25.5 | | | 79.6 | | | 67.5 | | | 148.1 | |
| Approach LOS | | C | | | E | | | E | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 19.0 | 93.3 | 10.1 | 27.6 | 38.3 | 74.0 | 19.0 | 18.7 |
| Change Period (Y+Rc), s | 4.0 | 5.3 | 4.0 | 4.0 | 5.3 | * 5.3 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 15.0 | 60.7 | 9.0 | 48.0 | 7.0 | * 69 | 15.0 | 42.0 |
| Max Q Clear Time (g_c+I1), s | 17.0 | 50.3 | 6.1 | 7.5 | 6.9 | 70.7 | 17.0 | 8.6 |
| Green Ext Time (p_c), s | 0.0 | 5.4 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | 0.2 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 62.5 |
| HCM 2010 LOS | E |

Notes



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 139 | 1775 | 1091 | 39 | 642 | 850 |
| Future Volume (veh/h) | 139 | 1775 | 1091 | 39 | 642 | 850 |
| Number | 7 | 4 | 8 | 18 | 1 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 151 | 1929 | 1186 | 0 | 698 | 636 |
| Adj No. of Lanes | 2 | 2 | 3 | 1 | 1 | 2 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 207 | 1873 | 2194 | 683 | 702 | 1103 |
| Arrive On Green | 0.06 | 0.53 | 0.43 | 0.00 | 0.40 | 0.40 |
| Sat Flow, veh/h | 3442 | 3632 | 5253 | 1583 | 1774 | 2787 |
| Grp Volume(v), veh/h | 151 | 1929 | 1186 | 0 | 698 | 636 |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1770 | 1695 | 1583 | 1774 | 1393 |
| Q Serve(g_s), s | 5.2 | 63.5 | 20.8 | 0.0 | 47.0 | 21.4 |
| Cycle Q Clear(g_c), s | 5.2 | 63.5 | 20.8 | 0.0 | 47.0 | 21.4 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 207 | 1873 | 2194 | 683 | 702 | 1103 |
| V/C Ratio(X) | 0.73 | 1.03 | 0.54 | 0.00 | 0.99 | 0.58 |
| Avail Cap(c_a), veh/h | 287 | 1873 | 2194 | 683 | 702 | 1103 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.22 | 0.22 | 1.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 55.4 | 28.3 | 25.3 | 0.0 | 36.1 | 28.4 |
| Incr Delay (d2), s/veh | 1.3 | 18.7 | 0.3 | 0.0 | 32.4 | 0.7 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.5 | 35.6 | 9.7 | 0.0 | 29.2 | 17.0 |
| LnGrp Delay(d),s/veh | 56.7 | 47.0 | 25.6 | 0.0 | 68.5 | 29.1 |
| LnGrp LOS | E | F | C | | E | C |
| Approach Vol, veh/h | | 2080 | 1186 | | 1334 | |
| Approach Delay, s/veh | | 47.7 | 25.6 | | 49.7 | |
| Approach LOS | | D | C | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | | | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | | | 68.0 | | 52.0 | 11.7 | 56.3 |
| Change Period (Y+Rc), s | | | | 4.5 | | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | | | | 63.5 | | 47.5 | 10.0 | 49.0 |
| Max Q Clear Time (g_c+I1), s | | | | 65.5 | | 49.0 | 7.2 | 22.8 |
| Green Ext Time (p_c), s | | | | 0.0 | | 0.0 | 0.1 | 8.7 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 42.6 |
| HCM 2010 LOS | D |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 444 | 1026 | 215 | 84 | 911 | 211 | 290 | 252 | 116 | 224 | 213 | 342 |
| Future Volume (veh/h) | 444 | 1026 | 215 | 84 | 911 | 211 | 290 | 252 | 116 | 224 | 213 | 342 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 7 | 4 | 14 | 3 | 8 | 18 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 0.98 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 477 | 1103 | 222 | 90 | 980 | 136 | 312 | 271 | 88 | 241 | 229 | 0 |
| Adj No. of Lanes | 2 | 2 | 0 | 1 | 2 | 1 | 1 | 2 | 1 | 2 | 2 | 1 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 477 | 1107 | 222 | 374 | 1628 | 727 | 300 | 391 | 171 | 512 | 335 | 150 |
| Arrive On Green | 0.28 | 0.76 | 0.76 | 0.21 | 0.46 | 0.46 | 0.17 | 0.11 | 0.11 | 0.15 | 0.09 | 0.00 |
| Sat Flow, veh/h | 3442 | 2931 | 587 | 1774 | 3539 | 1580 | 1774 | 3539 | 1553 | 3442 | 3539 | 1583 |
| Grp Volume(v), veh/h | 477 | 664 | 661 | 90 | 980 | 136 | 312 | 271 | 88 | 241 | 229 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1770 | 1749 | 1774 | 1770 | 1580 | 1774 | 1770 | 1553 | 1721 | 1770 | 1583 |
| Q Serve(g_s), s | 18.0 | 47.7 | 49.1 | 5.5 | 26.9 | 6.6 | 22.0 | 9.6 | 5.3 | 8.3 | 8.1 | 0.0 |
| Cycle Q Clear(g_c), s | 18.0 | 47.7 | 49.1 | 5.5 | 26.9 | 6.6 | 22.0 | 9.6 | 5.3 | 8.3 | 8.1 | 0.0 |
| Prop In Lane | 1.00 | | 0.34 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 477 | 668 | 660 | 374 | 1628 | 727 | 300 | 391 | 171 | 512 | 335 | 150 |
| V/C Ratio(X) | 1.00 | 0.99 | 1.00 | 0.24 | 0.60 | 0.19 | 1.04 | 0.69 | 0.51 | 0.47 | 0.68 | 0.00 |
| Avail Cap(c_a), veh/h | 477 | 668 | 660 | 374 | 1628 | 727 | 300 | 1116 | 490 | 512 | 926 | 414 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.76 | 0.76 | 0.76 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 47.0 | 15.7 | 15.9 | 42.7 | 26.2 | 20.7 | 54.0 | 55.7 | 32.3 | 50.6 | 57.0 | 0.0 |
| Incr Delay (d2), s/veh | 36.2 | 28.8 | 30.9 | 0.3 | 1.7 | 0.6 | 62.5 | 2.2 | 2.4 | 0.7 | 2.5 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 10.9 | 27.5 | 28.0 | 2.7 | 13.4 | 3.0 | 16.0 | 4.8 | 2.4 | 4.0 | 4.1 | 0.0 |
| LnGrp Delay(d),s/veh | 83.2 | 44.5 | 46.8 | 43.0 | 27.9 | 21.3 | 116.5 | 57.9 | 34.7 | 51.3 | 59.4 | 0.0 |
| LnGrp LOS | F | D | F | D | C | C | F | E | C | D | E | |
| Approach Vol, veh/h | | 1802 | | | 1206 | | | 671 | | | 470 | |
| Approach Delay, s/veh | | 55.6 | | | 28.3 | | | 82.1 | | | 55.3 | |
| Approach LOS | | E | | | C | | | F | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 12.7 | 54.4 | 23.9 | 19.0 | 22.0 | 65.1 | 26.0 | 16.9 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 4.6 | * 4.6 | 4.0 | 5.3 | 4.0 | 4.6 |
| Max Green Setting (Gmax), s | 7.0 | * 49 | 15.0 | * 41 | 18.0 | 38.1 | 22.0 | 34.0 |
| Max Q Clear Time (g_c+I1), s | 7.5 | 51.1 | 10.3 | 11.6 | 20.0 | 28.9 | 24.0 | 10.1 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | 0.3 | 2.0 | 0.0 | 5.0 | 0.0 | 1.4 |

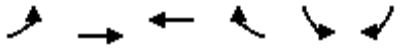
| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 51.9 |
| HCM 2010 LOS | D |

Notes

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 99 | 398 | 24 | 50 | 440 | 64 |
| Future Volume (veh/h) | 99 | 398 | 24 | 50 | 440 | 64 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1900 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 105 | 423 | 26 | 53 | 468 | 68 |
| Adj No. of Lanes | 1 | 1 | 1 | 0 | 1 | 1 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 555 | 495 | 55 | 113 | 557 | 942 |
| Arrive On Green | 0.31 | 0.31 | 0.10 | 0.10 | 0.31 | 0.51 |
| Sat Flow, veh/h | 1774 | 1583 | 548 | 1117 | 1774 | 1863 |
| Grp Volume(v), veh/h | 105 | 423 | 0 | 79 | 468 | 68 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1583 | 0 | 1666 | 1774 | 1863 |
| Q Serve(g_s), s | 2.1 | 12.4 | 0.0 | 2.2 | 12.2 | 0.9 |
| Cycle Q Clear(g_c), s | 2.1 | 12.4 | 0.0 | 2.2 | 12.2 | 0.9 |
| Prop In Lane | 1.00 | 1.00 | | 0.67 | 1.00 | |
| Lane Grp Cap(c), veh/h | 555 | 495 | 0 | 168 | 557 | 942 |
| V/C Ratio(X) | 0.19 | 0.85 | 0.00 | 0.47 | 0.84 | 0.07 |
| Avail Cap(c_a), veh/h | 770 | 687 | 0 | 656 | 1271 | 2237 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 12.4 | 16.0 | 0.0 | 21.0 | 15.8 | 6.3 |
| Incr Delay (d2), s/veh | 0.2 | 7.6 | 0.0 | 2.0 | 3.5 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.1 | 6.4 | 0.0 | 1.1 | 6.4 | 0.5 |
| LnGrp Delay(d),s/veh | 12.6 | 23.5 | 0.0 | 23.1 | 19.4 | 6.3 |
| LnGrp LOS | B | C | | C | B | A |
| Approach Vol, veh/h | 528 | | 79 | | | 536 |
| Approach Delay, s/veh | 21.4 | | 23.1 | | | 17.7 |
| Approach LOS | C | | C | | | B |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 20.0 | 9.5 | | | | 29.5 | | 20.0 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | | | | 4.5 | | 4.5 |
| Max Green Setting (Gmax), s | 35.5 | 19.5 | | | | 59.5 | | 21.5 |
| Max Q Clear Time (g_c+I1), s | 14.2 | 4.2 | | | | 2.9 | | 14.4 |
| Green Ext Time (p_c), s | 1.4 | 0.3 | | | | 0.3 | | 1.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 19.8 |
| HCM 2010 LOS | B |



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 19 | 622 | 639 | 39 | 30 | 3 |
| Future Volume (veh/h) | 19 | 622 | 639 | 39 | 30 | 3 |
| Number | 7 | 4 | 8 | 18 | 1 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 21 | 676 | 695 | 42 | 33 | 3 |
| Adj No. of Lanes | 1 | 1 | 1 | 1 | 1 | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 46 | 1175 | 905 | 770 | 234 | 209 |
| Arrive On Green | 0.03 | 0.63 | 0.49 | 0.49 | 0.13 | 0.13 |
| Sat Flow, veh/h | 1774 | 1863 | 1863 | 1583 | 1774 | 1583 |
| Grp Volume(v), veh/h | 21 | 676 | 695 | 42 | 33 | 3 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1863 | 1863 | 1583 | 1774 | 1583 |
| Q Serve(g_s), s | 0.4 | 8.0 | 11.6 | 0.5 | 0.6 | 0.1 |
| Cycle Q Clear(g_c), s | 0.4 | 8.0 | 11.6 | 0.5 | 0.6 | 0.1 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 46 | 1175 | 905 | 770 | 234 | 209 |
| V/C Ratio(X) | 0.45 | 0.58 | 0.77 | 0.05 | 0.14 | 0.01 |
| Avail Cap(c_a), veh/h | 257 | 3020 | 2529 | 2150 | 912 | 814 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 18.2 | 4.1 | 8.0 | 5.1 | 14.6 | 14.3 |
| Incr Delay (d2), s/veh | 6.7 | 0.4 | 1.4 | 0.0 | 0.3 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.3 | 4.1 | 6.1 | 0.2 | 0.3 | 0.1 |
| LnGrp Delay(d),s/veh | 24.9 | 4.5 | 9.4 | 5.2 | 14.8 | 14.3 |
| LnGrp LOS | C | A | A | A | B | B |
| Approach Vol, veh/h | | 697 | 737 | | 36 | |
| Approach Delay, s/veh | | 5.1 | 9.1 | | 14.8 | |
| Approach LOS | | A | A | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | | | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | | | 28.4 | | 9.5 | 5.5 | 22.9 |
| Change Period (Y+Rc), s | | | | 4.5 | | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | | | | 61.5 | | 19.5 | 5.5 | 51.5 |
| Max Q Clear Time (g_c+I1), s | | | | 10.0 | | 2.6 | 2.4 | 13.6 |
| Green Ext Time (p_c), s | | | | 4.8 | | 0.0 | 0.0 | 4.8 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 7.4 |
| HCM 2010 LOS | A |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.7 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 1412 | 35 | 13 | 1663 | 0 | 98 |
| Future Vol, veh/h | 1412 | 35 | 13 | 1663 | 0 | 98 |
| Conflicting Peds, #/hr | 0 | 1 | 1 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 150 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 93 | 93 | 93 | 93 | 93 | 93 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1518 | 38 | 14 | 1788 | 0 | 105 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 1557 | 0 | 2460 | 779 |
| Stage 1 | - | - | - | - | 1538 | - |
| Stage 2 | - | - | - | - | 922 | - |
| Critical Hdwy | - | - | 4.14 | - | 6.84 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 | - |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 | 3.32 |
| Pot Cap-1 Maneuver | - | - | 421 | - | 25 | 339 |
| Stage 1 | - | - | - | - | 163 | - |
| Stage 2 | - | - | - | - | 348 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 421 | - | 24 | 339 |
| Mov Cap-2 Maneuver | - | - | - | - | 24 | - |
| Stage 1 | - | - | - | - | 157 | - |
| Stage 2 | - | - | - | - | 348 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.1 | 20.3 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 339 | - | - | 421 | - |
| HCM Lane V/C Ratio | 0.311 | - | - | 0.033 | - |
| HCM Control Delay (s) | 20.3 | - | - | 13.8 | - |
| HCM Lane LOS | C | - | - | B | - |
| HCM 95th %tile Q(veh) | 1.3 | - | - | 0.1 | - |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 72 | 1321 | 114 | 38 | 1237 | 53 | 215 | 104 | 71 | 164 | 126 | 229 |
| Future Volume (veh/h) | 72 | 1321 | 114 | 38 | 1237 | 53 | 215 | 104 | 71 | 164 | 126 | 229 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.98 | 1.00 | | 1.00 | 1.00 | | 0.99 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 81 | 1484 | 122 | 43 | 1390 | 60 | 242 | 117 | -1 | 184 | 142 | 193 |
| Adj No. of Lanes | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 100 | 1628 | 133 | 121 | 1767 | 76 | 248 | 428 | 364 | 207 | 147 | 200 |
| Arrive On Green | 0.06 | 0.49 | 0.49 | 0.07 | 0.51 | 0.51 | 0.14 | 0.23 | 0.00 | 0.12 | 0.21 | 0.21 |
| Sat Flow, veh/h | 1774 | 3313 | 271 | 1774 | 3453 | 149 | 1774 | 1863 | 1583 | 1774 | 712 | 968 |
| Grp Volume(v), veh/h | 81 | 789 | 817 | 43 | 711 | 739 | 242 | 117 | -1 | 184 | 0 | 335 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1814 | 1774 | 1770 | 1832 | 1774 | 1863 | 1583 | 1774 | 0 | 1680 |
| Q Serve(g_s), s | 6.8 | 61.3 | 62.6 | 3.5 | 49.2 | 49.5 | 20.4 | 7.7 | 0.0 | 15.3 | 0.0 | 29.6 |
| Cycle Q Clear(g_c), s | 6.8 | 61.3 | 62.6 | 3.5 | 49.2 | 49.5 | 20.4 | 7.7 | 0.0 | 15.3 | 0.0 | 29.6 |
| Prop In Lane | 1.00 | | 0.15 | 1.00 | | 0.08 | 1.00 | | 1.00 | 1.00 | | 0.58 |
| Lane Grp Cap(c), veh/h | 100 | 869 | 891 | 121 | 906 | 938 | 248 | 428 | 364 | 207 | 0 | 347 |
| V/C Ratio(X) | 0.81 | 0.91 | 0.92 | 0.36 | 0.79 | 0.79 | 0.97 | 0.27 | 0.00 | 0.89 | 0.00 | 0.96 |
| Avail Cap(c_a), veh/h | 106 | 869 | 891 | 121 | 906 | 938 | 248 | 428 | 364 | 343 | 0 | 347 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.80 | 0.80 | 0.80 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 70.0 | 35.0 | 35.3 | 66.7 | 29.9 | 30.0 | 64.2 | 47.5 | 0.0 | 65.3 | 0.0 | 59.0 |
| Incr Delay (d2), s/veh | 31.2 | 14.9 | 15.7 | 0.5 | 5.5 | 5.4 | 49.6 | 0.5 | 0.0 | 8.7 | 0.0 | 39.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 4.2 | 33.4 | 35.2 | 1.7 | 25.3 | 26.5 | 13.4 | 4.1 | 0.0 | 8.0 | 0.0 | 17.5 |
| LnGrp Delay(d),s/veh | 101.1 | 49.9 | 51.0 | 67.3 | 35.4 | 35.4 | 113.8 | 48.0 | 0.0 | 73.9 | 0.0 | 98.0 |
| LnGrp LOS | F | D | D | E | D | D | F | D | | E | | F |
| Approach Vol, veh/h | | 1687 | | | 1493 | | | 358 | | | 519 | |
| Approach Delay, s/veh | | 52.9 | | | 36.3 | | | 92.6 | | | 89.4 | |
| Approach LOS | | D | | | D | | | F | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 15.7 | 79.0 | 25.0 | 35.0 | 12.5 | 82.2 | 21.5 | 38.5 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 4.0 | 4.0 | 4.0 | 5.3 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 7.0 | * 74 | 21.0 | 31.0 | 9.0 | 71.7 | 29.0 | 23.0 |
| Max Q Clear Time (g_c+I1), s | 5.5 | 64.6 | 22.4 | 31.6 | 8.8 | 51.5 | 17.3 | 9.7 |
| Green Ext Time (p_c), s | 0.0 | 8.9 | 0.0 | 0.0 | 0.0 | 18.9 | 0.2 | 0.6 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 55.0 |
| HCM 2010 LOS | D |

Notes

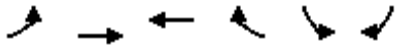


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 55 | 1431 | 35 | 361 | 1343 | 32 | 14 | 32 | 337 | 103 | 29 | 45 |
| Future Volume (veh/h) | 55 | 1431 | 35 | 361 | 1343 | 32 | 14 | 32 | 337 | 103 | 29 | 45 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 62 | 1608 | 30 | 406 | 1509 | 35 | 16 | 36 | 98 | 116 | 33 | 9 |
| Adj No. of Lanes | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 481 | 2049 | 916 | 424 | 1489 | 665 | 146 | 192 | 163 | 109 | 116 | 32 |
| Arrive On Green | 0.54 | 1.00 | 1.00 | 0.12 | 0.42 | 0.42 | 0.08 | 0.10 | 0.10 | 0.06 | 0.08 | 0.08 |
| Sat Flow, veh/h | 1774 | 3539 | 1583 | 3442 | 3539 | 1581 | 1774 | 1863 | 1579 | 1774 | 1409 | 384 |
| Grp Volume(v), veh/h | 62 | 1608 | 30 | 406 | 1509 | 35 | 16 | 36 | 98 | 116 | 0 | 42 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1583 | 1721 | 1770 | 1581 | 1774 | 1863 | 1579 | 1774 | 0 | 1794 |
| Q Serve(g_s), s | 2.2 | 0.0 | 0.0 | 15.2 | 54.7 | 1.3 | 1.1 | 2.3 | 7.7 | 8.0 | 0.0 | 2.9 |
| Cycle Q Clear(g_c), s | 2.2 | 0.0 | 0.0 | 15.2 | 54.7 | 1.3 | 1.1 | 2.3 | 7.7 | 8.0 | 0.0 | 2.9 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.21 |
| Lane Grp Cap(c), veh/h | 481 | 2049 | 916 | 424 | 1489 | 665 | 146 | 192 | 163 | 109 | 0 | 148 |
| V/C Ratio(X) | 0.13 | 0.78 | 0.03 | 0.96 | 1.01 | 0.05 | 0.11 | 0.19 | 0.60 | 1.06 | 0.00 | 0.28 |
| Avail Cap(c_a), veh/h | 481 | 2049 | 916 | 424 | 1489 | 665 | 146 | 602 | 510 | 109 | 0 | 579 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.72 | 0.72 | 0.72 | 0.77 | 0.77 | 0.77 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 22.2 | 0.0 | 0.0 | 56.7 | 37.7 | 13.2 | 55.2 | 53.3 | 55.7 | 61.0 | 0.0 | 56.0 |
| Incr Delay (d2), s/veh | 0.0 | 2.3 | 0.0 | 27.8 | 23.7 | 0.1 | 0.1 | 0.2 | 1.3 | 104.0 | 0.0 | 0.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.1 | 0.6 | 0.0 | 8.9 | 31.6 | 0.6 | 0.5 | 1.2 | 3.4 | 7.1 | 0.0 | 1.4 |
| LnGrp Delay(d),s/veh | 22.2 | 2.3 | 0.0 | 84.5 | 61.4 | 13.3 | 55.4 | 53.5 | 57.0 | 165.3 | 0.0 | 56.4 |
| LnGrp LOS | C | A | A | F | F | B | E | D | E | F | | E |
| Approach Vol, veh/h | | 1700 | | | 1950 | | | 150 | | | 158 | |
| Approach Delay, s/veh | | 3.0 | | | 65.4 | | | 56.0 | | | 136.4 | |
| Approach LOS | | A | | | E | | | E | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 20.0 | 80.6 | 14.7 | 14.7 | 40.6 | 60.0 | 12.0 | 17.4 |
| Change Period (Y+Rc), s | 4.0 | 5.3 | 4.0 | 4.0 | 5.3 | * 5.3 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 16.0 | 46.7 | 8.0 | 42.0 | 8.0 | * 55 | 8.0 | 42.0 |
| Max Q Clear Time (g_c+I1), s | 17.2 | 2.0 | 3.1 | 4.9 | 4.2 | 56.7 | 10.0 | 9.7 |
| Green Ext Time (p_c), s | 0.0 | 10.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.3 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 41.0 |
| HCM 2010 LOS | D |

Notes



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 253 | 1619 | 852 | 84 | 403 | 885 |
| Future Volume (veh/h) | 253 | 1619 | 852 | 84 | 403 | 885 |
| Number | 7 | 4 | 8 | 18 | 1 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 284 | 1819 | 957 | 0 | 453 | 696 |
| Adj No. of Lanes | 2 | 2 | 3 | 1 | 1 | 2 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 344 | 1907 | 2042 | 636 | 685 | 1076 |
| Arrive On Green | 0.10 | 0.54 | 0.40 | 0.00 | 0.39 | 0.39 |
| Sat Flow, veh/h | 3442 | 3632 | 5253 | 1583 | 1774 | 2787 |
| Grp Volume(v), veh/h | 284 | 1819 | 957 | 0 | 453 | 696 |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1770 | 1695 | 1583 | 1774 | 1393 |
| Q Serve(g_s), s | 9.7 | 58.5 | 16.6 | 0.0 | 25.3 | 24.5 |
| Cycle Q Clear(g_c), s | 9.7 | 58.5 | 16.6 | 0.0 | 25.3 | 24.5 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 344 | 1907 | 2042 | 636 | 685 | 1076 |
| V/C Ratio(X) | 0.83 | 0.95 | 0.47 | 0.00 | 0.66 | 0.65 |
| Avail Cap(c_a), veh/h | 416 | 1932 | 2042 | 636 | 685 | 1076 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.32 | 0.32 | 1.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 53.0 | 26.2 | 26.5 | 0.0 | 30.4 | 30.1 |
| Incr Delay (d2), s/veh | 3.8 | 4.6 | 0.2 | 0.0 | 2.4 | 1.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 4.8 | 29.5 | 7.8 | 0.0 | 12.8 | 18.8 |
| LnGrp Delay(d),s/veh | 56.8 | 30.8 | 26.6 | 0.0 | 32.7 | 31.5 |
| LnGrp LOS | E | C | C | | C | C |
| Approach Vol, veh/h | | 2103 | 957 | | 1149 | |
| Approach Delay, s/veh | | 34.3 | 26.6 | | 32.0 | |
| Approach LOS | | C | C | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | | | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | | | 69.2 | | 50.8 | 16.5 | 52.7 |
| Change Period (Y+Rc), s | | | | 4.5 | | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | | | | 65.5 | | 45.5 | 14.5 | 46.5 |
| Max Q Clear Time (g_c+I1), s | | | | 60.5 | | 27.3 | 11.7 | 18.6 |
| Green Ext Time (p_c), s | | | | 4.2 | | 4.1 | 0.3 | 6.8 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 31.9 |
| HCM 2010 LOS | C |

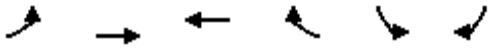


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 303 | 784 | 127 | 49 | 895 | 145 | 203 | 140 | 40 | 128 | 186 | 414 |
| Future Volume (veh/h) | 303 | 784 | 127 | 49 | 895 | 145 | 203 | 140 | 40 | 128 | 186 | 414 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 7 | 4 | 14 | 3 | 8 | 18 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 0.99 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 333 | 862 | 131 | 54 | 984 | 66 | 223 | 154 | 7 | 141 | 204 | 0 |
| Adj No. of Lanes | 2 | 2 | 0 | 1 | 2 | 1 | 1 | 2 | 1 | 2 | 2 | 1 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 381 | 1273 | 193 | 400 | 1903 | 840 | 218 | 295 | 131 | 434 | 322 | 144 |
| Arrive On Green | 0.22 | 0.83 | 0.83 | 0.23 | 0.54 | 0.54 | 0.12 | 0.08 | 0.08 | 0.13 | 0.09 | 0.00 |
| Sat Flow, veh/h | 3442 | 3081 | 468 | 1774 | 3539 | 1562 | 1774 | 3539 | 1572 | 3442 | 3539 | 1583 |
| Grp Volume(v), veh/h | 333 | 495 | 498 | 54 | 984 | 66 | 223 | 154 | 7 | 141 | 204 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1770 | 1780 | 1774 | 1770 | 1562 | 1774 | 1770 | 1572 | 1721 | 1770 | 1583 |
| Q Serve(g_s), s | 12.1 | 14.4 | 14.4 | 3.2 | 23.1 | 2.7 | 16.0 | 5.4 | 0.4 | 4.9 | 7.2 | 0.0 |
| Cycle Q Clear(g_c), s | 12.1 | 14.4 | 14.4 | 3.2 | 23.1 | 2.7 | 16.0 | 5.4 | 0.4 | 4.9 | 7.2 | 0.0 |
| Prop In Lane | 1.00 | | 0.26 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 381 | 731 | 735 | 400 | 1903 | 840 | 218 | 295 | 131 | 434 | 322 | 144 |
| V/C Ratio(X) | 0.87 | 0.68 | 0.68 | 0.14 | 0.52 | 0.08 | 1.02 | 0.52 | 0.05 | 0.33 | 0.63 | 0.00 |
| Avail Cap(c_a), veh/h | 424 | 731 | 735 | 400 | 1903 | 840 | 218 | 937 | 416 | 434 | 937 | 419 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.89 | 0.89 | 0.89 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 49.8 | 7.9 | 7.9 | 40.2 | 19.2 | 14.5 | 57.0 | 57.1 | 35.7 | 51.8 | 57.0 | 0.0 |
| Incr Delay (d2), s/veh | 15.4 | 4.5 | 4.5 | 0.2 | 1.0 | 0.2 | 66.5 | 1.4 | 0.2 | 0.4 | 2.1 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 6.5 | 7.5 | 7.5 | 1.6 | 11.5 | 1.2 | 11.9 | 2.7 | 0.2 | 2.3 | 3.6 | 0.0 |
| LnGrp Delay(d),s/veh | 65.2 | 12.4 | 12.3 | 40.4 | 20.3 | 14.7 | 123.7 | 58.5 | 35.9 | 52.2 | 59.1 | 0.0 |
| LnGrp LOS | E | B | B | D | C | B | F | E | D | D | E | |
| Approach Vol, veh/h | | 1326 | | | 1104 | | | 384 | | | 345 | |
| Approach Delay, s/veh | | 25.6 | | | 20.9 | | | 96.0 | | | 56.3 | |
| Approach LOS | | C | | | C | | | F | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 14.6 | 59.0 | 21.0 | 15.4 | 18.4 | 75.2 | 20.0 | 16.4 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 4.6 | * 4.6 | 4.0 | 5.3 | 4.0 | 4.6 |
| Max Green Setting (Gmax), s | 8.0 | * 54 | 16.0 | * 34 | 16.0 | 45.7 | 16.0 | 34.4 |
| Max Q Clear Time (g_c+I1), s | 5.2 | 16.4 | 6.9 | 7.4 | 14.1 | 25.1 | 18.0 | 9.2 |
| Green Ext Time (p_c), s | 0.0 | 8.6 | 0.3 | 0.9 | 0.2 | 7.9 | 0.0 | 1.2 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 35.9 |
| HCM 2010 LOS | D |

Notes



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 56 | 472 | 436 | 110 | 163 | 18 |
| Future Volume (veh/h) | 56 | 472 | 436 | 110 | 163 | 18 |
| Number | 7 | 4 | 8 | 18 | 1 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 61 | 513 | 474 | 120 | 177 | 20 |
| Adj No. of Lanes | 1 | 1 | 1 | 1 | 1 | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 115 | 1055 | 686 | 583 | 296 | 264 |
| Arrive On Green | 0.06 | 0.57 | 0.37 | 0.37 | 0.17 | 0.17 |
| Sat Flow, veh/h | 1774 | 1863 | 1863 | 1583 | 1774 | 1583 |
| Grp Volume(v), veh/h | 61 | 513 | 474 | 120 | 177 | 20 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1863 | 1863 | 1583 | 1774 | 1583 |
| Q Serve(g_s), s | 1.1 | 5.6 | 7.3 | 1.7 | 3.1 | 0.4 |
| Cycle Q Clear(g_c), s | 1.1 | 5.6 | 7.3 | 1.7 | 3.1 | 0.4 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 115 | 1055 | 686 | 583 | 296 | 264 |
| V/C Ratio(X) | 0.53 | 0.49 | 0.69 | 0.21 | 0.60 | 0.08 |
| Avail Cap(c_a), veh/h | 553 | 3179 | 2350 | 1998 | 1238 | 1105 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 15.3 | 4.4 | 9.0 | 7.3 | 13.0 | 11.8 |
| Incr Delay (d2), s/veh | 3.8 | 0.3 | 1.3 | 0.2 | 1.9 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.7 | 2.8 | 3.9 | 0.8 | 1.7 | 0.3 |
| LnGrp Delay(d),s/veh | 19.1 | 4.7 | 10.3 | 7.4 | 14.9 | 12.0 |
| LnGrp LOS | B | A | B | A | B | B |
| Approach Vol, veh/h | | 574 | 594 | | 197 | |
| Approach Delay, s/veh | | 6.2 | 9.7 | | 14.6 | |
| Approach LOS | | A | A | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | | | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | | | 23.6 | | 10.1 | 6.7 | 16.9 |
| Change Period (Y+Rc), s | | | | 4.5 | | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | | | | 57.5 | | 23.5 | 10.5 | 42.5 |
| Max Q Clear Time (g_c+I1), s | | | | 7.6 | | 5.1 | 3.1 | 9.3 |
| Green Ext Time (p_c), s | | | | 3.3 | | 0.5 | 0.1 | 3.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 9.0 |
| HCM 2010 LOS | A |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.1 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 1433 | 83 | 61 | 1344 | 0 | 62 |
| Future Vol, veh/h | 1433 | 83 | 61 | 1344 | 0 | 62 |
| Conflicting Peds, #/hr | 0 | 12 | 12 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 150 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 74 | 74 | 74 | 74 | 74 | 74 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1936 | 112 | 82 | 1816 | 0 | 84 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 2060 | 0 | 3076 | 1036 |
| Stage 1 | - | - | - | - | 2004 | - |
| Stage 2 | - | - | - | - | 1072 | - |
| Critical Hdwy | - | - | 4.14 | - | 6.84 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 | - |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 | 3.32 |
| Pot Cap-1 Maneuver | - | - | 268 | - | 9 | 228 |
| Stage 1 | - | - | - | - | 90 | - |
| Stage 2 | - | - | - | - | 290 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 265 | - | 6 | 225 |
| Mov Cap-2 Maneuver | - | - | - | - | 6 | - |
| Stage 1 | - | - | - | - | 61 | - |
| Stage 2 | - | - | - | - | 290 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 1.1 | 30.2 |
| HCM LOS | | | D |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 225 | - | - | 265 | - |
| HCM Lane V/C Ratio | 0.372 | - | - | 0.311 | - |
| HCM Control Delay (s) | 30.2 | - | - | 24.6 | - |
| HCM Lane LOS | D | - | - | C | - |
| HCM 95th %tile Q(veh) | 1.6 | - | - | 1.3 | - |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 104 | 1268 | 135 | 73 | 1266 | 141 | 84 | 57 | 49 | 80 | 41 | 31 |
| Future Volume (veh/h) | 104 | 1268 | 135 | 73 | 1266 | 141 | 84 | 57 | 49 | 80 | 41 | 31 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.97 | 1.00 | | 0.97 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 132 | 1605 | 165 | 92 | 1603 | 178 | 106 | 72 | -29 | 101 | 52 | -33 |
| Adj No. of Lanes | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 136 | 1709 | 173 | 345 | 2104 | 230 | 109 | 134 | 114 | 109 | 134 | 0 |
| Arrive On Green | 0.08 | 0.53 | 0.53 | 0.19 | 0.66 | 0.66 | 0.06 | 0.07 | 0.00 | 0.06 | 0.07 | 0.00 |
| Sat Flow, veh/h | 1774 | 3233 | 328 | 1774 | 3206 | 351 | 1774 | 1863 | 1583 | 1774 | 1863 | 0 |
| Grp Volume(v), veh/h | 132 | 868 | 902 | 92 | 873 | 908 | 106 | 72 | -29 | 101 | 19 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1791 | 1774 | 1770 | 1787 | 1774 | 1863 | 1583 | 1774 | 1863 | 0 |
| Q Serve(g_s), s | 9.6 | 59.0 | 62.2 | 5.7 | 43.6 | 46.1 | 7.8 | 4.8 | 0.0 | 7.4 | 1.2 | 0.0 |
| Cycle Q Clear(g_c), s | 9.6 | 59.0 | 62.2 | 5.7 | 43.6 | 46.1 | 7.8 | 4.8 | 0.0 | 7.4 | 1.2 | 0.0 |
| Prop In Lane | 1.00 | | 0.18 | 1.00 | | 0.20 | 1.00 | | 1.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 136 | 935 | 947 | 345 | 1161 | 1173 | 109 | 134 | 114 | 109 | 134 | 0 |
| V/C Ratio(X) | 0.97 | 0.93 | 0.95 | 0.27 | 0.75 | 0.77 | 0.97 | 0.54 | -0.25 | 0.93 | 0.14 | 0.00 |
| Avail Cap(c_a), veh/h | 136 | 935 | 947 | 345 | 1161 | 1173 | 109 | 416 | 353 | 109 | 416 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.72 | 0.72 | 0.72 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 59.8 | 28.4 | 29.1 | 44.5 | 15.2 | 15.6 | 60.9 | 58.2 | 0.0 | 60.7 | 56.5 | 0.0 |
| Incr Delay (d2), s/veh | 66.5 | 16.5 | 19.8 | 0.1 | 3.3 | 3.6 | 76.3 | 4.6 | 0.0 | 61.9 | 0.7 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 7.2 | 33.0 | 35.8 | 2.8 | 22.2 | 23.6 | 6.1 | 2.7 | 0.0 | 5.5 | 0.7 | 0.0 |
| LnGrp Delay(d),s/veh | 126.3 | 44.9 | 49.0 | 44.6 | 18.4 | 19.2 | 137.2 | 62.9 | 0.0 | 122.6 | 57.2 | 0.0 |
| LnGrp LOS | F | D | D | D | B | B | F | E | | F | E | |
| Approach Vol, veh/h | | 1902 | | | 1873 | | | 149 | | | 120 | |
| Approach Delay, s/veh | | 52.5 | | | 20.1 | | | 128.0 | | | 112.3 | |
| Approach LOS | | D | | | C | | | F | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 30.6 | 74.0 | 12.0 | 13.4 | 14.0 | 90.6 | 12.0 | 13.4 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 4.0 | 4.0 | 4.0 | 5.3 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 7.0 | * 69 | 8.0 | 29.0 | 10.0 | 65.7 | 8.0 | 29.0 |
| Max Q Clear Time (g_c+I1), s | 7.7 | 64.2 | 9.8 | 3.2 | 11.6 | 48.1 | 9.4 | 6.8 |
| Green Ext Time (p_c), s | 0.0 | 4.5 | 0.0 | 0.1 | 0.0 | 17.3 | 0.0 | 0.4 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 42.0 |
| HCM 2010 LOS | D |

Notes

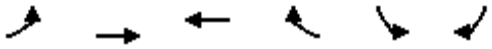


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 62 | 1283 | 25 | 335 | 1422 | 75 | 44 | 32 | 302 | 176 | 38 | 62 |
| Future Volume (veh/h) | 62 | 1283 | 25 | 335 | 1422 | 75 | 44 | 32 | 302 | 176 | 38 | 62 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.98 | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 0.99 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 68 | 1410 | 18 | 368 | 1563 | 81 | 48 | 35 | 57 | 193 | 42 | 27 |
| Adj No. of Lanes | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 392 | 2033 | 896 | 367 | 1597 | 711 | 72 | 180 | 152 | 189 | 173 | 111 |
| Arrive On Green | 0.22 | 0.57 | 0.57 | 0.11 | 0.45 | 0.45 | 0.04 | 0.10 | 0.10 | 0.11 | 0.16 | 0.16 |
| Sat Flow, veh/h | 1774 | 3539 | 1559 | 3442 | 3539 | 1576 | 1774 | 1863 | 1569 | 1774 | 1058 | 680 |
| Grp Volume(v), veh/h | 68 | 1410 | 18 | 368 | 1563 | 81 | 48 | 35 | 57 | 193 | 0 | 69 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1559 | 1721 | 1770 | 1576 | 1774 | 1863 | 1569 | 1774 | 0 | 1738 |
| Q Serve(g_s), s | 4.7 | 42.3 | 0.7 | 16.0 | 65.1 | 3.1 | 4.0 | 2.6 | 5.1 | 16.0 | 0.0 | 5.2 |
| Cycle Q Clear(g_c), s | 4.7 | 42.3 | 0.7 | 16.0 | 65.1 | 3.1 | 4.0 | 2.6 | 5.1 | 16.0 | 0.0 | 5.2 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.39 |
| Lane Grp Cap(c), veh/h | 392 | 2033 | 896 | 367 | 1597 | 711 | 72 | 180 | 152 | 189 | 0 | 284 |
| V/C Ratio(X) | 0.17 | 0.69 | 0.02 | 1.00 | 0.98 | 0.11 | 0.67 | 0.19 | 0.38 | 1.02 | 0.00 | 0.24 |
| Avail Cap(c_a), veh/h | 392 | 2033 | 896 | 367 | 1597 | 711 | 106 | 522 | 439 | 189 | 0 | 568 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.80 | 0.80 | 0.80 | 0.76 | 0.76 | 0.76 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 47.3 | 22.6 | 13.7 | 67.0 | 40.4 | 11.4 | 71.0 | 62.3 | 63.5 | 67.0 | 0.0 | 54.7 |
| Incr Delay (d2), s/veh | 0.1 | 1.6 | 0.0 | 41.7 | 15.2 | 0.2 | 4.0 | 0.2 | 0.6 | 70.7 | 0.0 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.3 | 21.0 | 0.3 | 9.7 | 35.1 | 1.4 | 2.0 | 1.4 | 2.2 | 11.5 | 0.0 | 2.5 |
| LnGrp Delay(d),s/veh | 47.4 | 24.2 | 13.8 | 108.7 | 55.7 | 11.7 | 75.0 | 62.5 | 64.1 | 137.9 | 0.0 | 54.9 |
| LnGrp LOS | D | C | B | F | E | B | E | E | E | F | | D |
| Approach Vol, veh/h | | 1496 | | | 2012 | | | 140 | | | 262 | |
| Approach Delay, s/veh | | 25.1 | | | 63.6 | | | 67.4 | | | 116.0 | |
| Approach LOS | | C | | | E | | | E | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 20.0 | 91.5 | 10.1 | 28.5 | 38.5 | 73.0 | 20.0 | 18.5 |
| Change Period (Y+Rc), s | 4.0 | 5.3 | 4.0 | 4.0 | 5.3 | * 5.3 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 16.0 | 58.7 | 9.0 | 49.0 | 7.0 | * 68 | 16.0 | 42.0 |
| Max Q Clear Time (g_c+I1), s | 18.0 | 44.3 | 6.0 | 7.2 | 6.7 | 67.1 | 18.0 | 7.1 |
| Green Ext Time (p_c), s | 0.0 | 5.8 | 0.0 | 0.3 | 0.0 | 0.5 | 0.0 | 0.2 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 52.5 |
| HCM 2010 LOS | D |

Notes



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 19 | 578 | 598 | 39 | 30 | 3 |
| Future Volume (veh/h) | 19 | 578 | 598 | 39 | 30 | 3 |
| Number | 7 | 4 | 8 | 18 | 1 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1900 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 21 | 628 | 650 | 42 | 33 | 3 |
| Adj No. of Lanes | 1 | 1 | 1 | 0 | 1 | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 46 | 1175 | 841 | 54 | 234 | 209 |
| Arrive On Green | 0.03 | 0.63 | 0.49 | 0.49 | 0.13 | 0.13 |
| Sat Flow, veh/h | 1774 | 1863 | 1731 | 112 | 1774 | 1583 |
| Grp Volume(v), veh/h | 21 | 628 | 0 | 692 | 33 | 3 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1863 | 0 | 1843 | 1774 | 1583 |
| Q Serve(g_s), s | 0.4 | 7.1 | 0.0 | 11.7 | 0.6 | 0.1 |
| Cycle Q Clear(g_c), s | 0.4 | 7.1 | 0.0 | 11.7 | 0.6 | 0.1 |
| Prop In Lane | 1.00 | | | 0.06 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 46 | 1175 | 0 | 895 | 234 | 209 |
| V/C Ratio(X) | 0.45 | 0.53 | 0.00 | 0.77 | 0.14 | 0.01 |
| Avail Cap(c_a), veh/h | 262 | 2978 | 0 | 2455 | 955 | 852 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 18.2 | 3.9 | 0.0 | 8.0 | 14.6 | 14.3 |
| Incr Delay (d2), s/veh | 6.7 | 0.4 | 0.0 | 1.5 | 0.3 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.3 | 3.6 | 0.0 | 6.1 | 0.3 | 0.1 |
| LnGrp Delay(d),s/veh | 24.9 | 4.3 | 0.0 | 9.5 | 14.8 | 14.3 |
| LnGrp LOS | C | A | | A | B | B |
| Approach Vol, veh/h | | 649 | 692 | | 36 | |
| Approach Delay, s/veh | | 4.9 | 9.5 | | 14.8 | |
| Approach LOS | | A | A | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | | | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | | | 28.4 | | 9.5 | 5.5 | 22.9 |
| Change Period (Y+Rc), s | | | | 4.5 | | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | | | | 60.6 | | 20.4 | 5.6 | 50.5 |
| Max Q Clear Time (g_c+I1), s | | | | 9.1 | | 2.6 | 2.4 | 13.7 |
| Green Ext Time (p_c), s | | | | 4.3 | | 0.0 | 0.0 | 4.7 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 7.5 |
| HCM 2010 LOS | A |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.6 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 1349 | 33 | 12 | 1581 | 0 | 93 |
| Future Vol, veh/h | 1349 | 33 | 12 | 1581 | 0 | 93 |
| Conflicting Peds, #/hr | 0 | 1 | 1 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 150 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 93 | 93 | 93 | 93 | 93 | 93 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1451 | 35 | 13 | 1700 | 0 | 100 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 1487 | 0 | 2346 | 744 |
| Stage 1 | - | - | - | - | 1470 | - |
| Stage 2 | - | - | - | - | 876 | - |
| Critical Hdwy | - | - | 4.14 | - | 6.84 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 | - |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 | 3.32 |
| Pot Cap-1 Maneuver | - | - | 448 | - | 30 | 357 |
| Stage 1 | - | - | - | - | 178 | - |
| Stage 2 | - | - | - | - | 368 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 448 | - | 29 | 357 |
| Mov Cap-2 Maneuver | - | - | - | - | 29 | - |
| Stage 1 | - | - | - | - | 173 | - |
| Stage 2 | - | - | - | - | 368 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.1 | 19 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 357 | - | - | 448 | - |
| HCM Lane V/C Ratio | 0.28 | - | - | 0.029 | - |
| HCM Control Delay (s) | 19 | - | - | 13.3 | - |
| HCM Lane LOS | C | - | - | B | - |
| HCM 95th %tile Q(veh) | 1.1 | - | - | 0.1 | - |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 69 | 1262 | 109 | 36 | 1175 | 50 | 205 | 99 | 68 | 156 | 120 | 218 |
| Future Volume (veh/h) | 69 | 1262 | 109 | 36 | 1175 | 50 | 205 | 99 | 68 | 156 | 120 | 218 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.98 | 1.00 | | 1.00 | 1.00 | | 0.99 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 78 | 1418 | 116 | 40 | 1320 | 56 | 230 | 111 | -5 | 175 | 135 | 181 |
| Adj No. of Lanes | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 96 | 1496 | 122 | 106 | 1616 | 68 | 246 | 434 | 369 | 200 | 149 | 199 |
| Arrive On Green | 0.05 | 0.45 | 0.45 | 0.06 | 0.47 | 0.47 | 0.14 | 0.23 | 0.00 | 0.11 | 0.21 | 0.21 |
| Sat Flow, veh/h | 1774 | 3314 | 270 | 1774 | 3456 | 146 | 1774 | 1863 | 1583 | 1774 | 718 | 963 |
| Grp Volume(v), veh/h | 78 | 754 | 780 | 40 | 675 | 701 | 230 | 111 | -5 | 175 | 0 | 316 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1814 | 1774 | 1770 | 1833 | 1774 | 1863 | 1583 | 1774 | 0 | 1681 |
| Q Serve(g_s), s | 5.7 | 52.9 | 53.8 | 2.8 | 42.7 | 42.9 | 16.7 | 6.3 | 0.0 | 12.6 | 0.0 | 23.9 |
| Cycle Q Clear(g_c), s | 5.7 | 52.9 | 53.8 | 2.8 | 42.7 | 42.9 | 16.7 | 6.3 | 0.0 | 12.6 | 0.0 | 23.9 |
| Prop In Lane | 1.00 | | 0.15 | 1.00 | | 0.08 | 1.00 | | 1.00 | 1.00 | | 0.57 |
| Lane Grp Cap(c), veh/h | 96 | 799 | 819 | 106 | 828 | 857 | 246 | 434 | 369 | 200 | 0 | 348 |
| V/C Ratio(X) | 0.82 | 0.94 | 0.95 | 0.38 | 0.82 | 0.82 | 0.94 | 0.26 | -0.01 | 0.88 | 0.00 | 0.91 |
| Avail Cap(c_a), veh/h | 96 | 799 | 819 | 106 | 828 | 857 | 246 | 444 | 378 | 218 | 0 | 375 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.84 | 0.84 | 0.84 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 60.9 | 34.1 | 34.3 | 58.8 | 29.8 | 29.8 | 55.4 | 40.7 | 0.0 | 56.8 | 0.0 | 50.3 |
| Incr Delay (d2), s/veh | 38.0 | 20.8 | 21.7 | 0.7 | 7.4 | 7.3 | 39.8 | 0.4 | 0.0 | 27.2 | 0.0 | 25.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.8 | 30.4 | 31.8 | 1.4 | 22.5 | 23.4 | 10.9 | 3.3 | 0.0 | 7.7 | 0.0 | 13.5 |
| LnGrp Delay(d),s/veh | 98.9 | 54.8 | 56.0 | 59.5 | 37.2 | 37.1 | 95.3 | 41.1 | 0.0 | 84.0 | 0.0 | 75.3 |
| LnGrp LOS | F | D | E | E | D | D | F | D | | F | | E |
| Approach Vol, veh/h | | 1612 | | | 1416 | | | 336 | | | 491 | |
| Approach Delay, s/veh | | 57.5 | | | 37.8 | | | 78.8 | | | 78.4 | |
| Approach LOS | | E | | | D | | | E | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 13.1 | 64.0 | 22.0 | 30.9 | 11.0 | 66.1 | 18.6 | 34.3 |
| Change Period (Y+Rc), s | 5.3 | * 5.3 | 4.0 | 4.0 | 4.0 | 5.3 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 7.0 | * 59 | 18.0 | 29.0 | 7.0 | 58.7 | 16.0 | 31.0 |
| Max Q Clear Time (g_c+I1), s | 4.8 | 55.8 | 18.7 | 25.9 | 7.7 | 44.9 | 14.6 | 8.3 |
| Green Ext Time (p_c), s | 0.0 | 2.9 | 0.0 | 0.8 | 0.0 | 12.9 | 0.0 | 0.8 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 54.8 |
| HCM 2010 LOS | D |

Notes



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 53 | 1337 | 34 | 341 | 1227 | 30 | 14 | 30 | 321 | 98 | 28 | 43 |
| Future Volume (veh/h) | 53 | 1337 | 34 | 341 | 1227 | 30 | 14 | 30 | 321 | 98 | 28 | 43 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 60 | 1502 | 29 | 383 | 1379 | 33 | 16 | 34 | 80 | 110 | 31 | 6 |
| Adj No. of Lanes | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 483 | 2052 | 918 | 424 | 1489 | 665 | 152 | 191 | 162 | 109 | 119 | 23 |
| Arrive On Green | 0.54 | 1.00 | 1.00 | 0.12 | 0.42 | 0.42 | 0.09 | 0.10 | 0.10 | 0.06 | 0.08 | 0.08 |
| Sat Flow, veh/h | 1774 | 3539 | 1583 | 3442 | 3539 | 1581 | 1774 | 1863 | 1579 | 1774 | 1516 | 293 |
| Grp Volume(v), veh/h | 60 | 1502 | 29 | 383 | 1379 | 33 | 16 | 34 | 80 | 110 | 0 | 37 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1583 | 1721 | 1770 | 1581 | 1774 | 1863 | 1579 | 1774 | 0 | 1810 |
| Q Serve(g_s), s | 2.1 | 0.0 | 0.0 | 14.3 | 48.1 | 1.2 | 1.1 | 2.2 | 6.2 | 8.0 | 0.0 | 2.5 |
| Cycle Q Clear(g_c), s | 2.1 | 0.0 | 0.0 | 14.3 | 48.1 | 1.2 | 1.1 | 2.2 | 6.2 | 8.0 | 0.0 | 2.5 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.16 |
| Lane Grp Cap(c), veh/h | 483 | 2052 | 918 | 424 | 1489 | 665 | 152 | 191 | 162 | 109 | 0 | 142 |
| V/C Ratio(X) | 0.12 | 0.73 | 0.03 | 0.90 | 0.93 | 0.05 | 0.11 | 0.18 | 0.49 | 1.01 | 0.00 | 0.26 |
| Avail Cap(c_a), veh/h | 483 | 2052 | 918 | 424 | 1489 | 665 | 152 | 602 | 510 | 109 | 0 | 585 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.78 | 0.78 | 0.78 | 0.84 | 0.84 | 0.84 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 22.0 | 0.0 | 0.0 | 56.2 | 35.7 | 13.2 | 54.8 | 53.3 | 55.2 | 61.0 | 0.0 | 56.4 |
| Incr Delay (d2), s/veh | 0.0 | 1.9 | 0.1 | 19.1 | 9.8 | 0.1 | 0.1 | 0.2 | 0.9 | 88.2 | 0.0 | 0.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.0 | 0.5 | 0.0 | 7.9 | 25.4 | 0.6 | 0.5 | 1.1 | 2.8 | 6.6 | 0.0 | 1.3 |
| LnGrp Delay(d),s/veh | 22.1 | 1.9 | 0.1 | 75.4 | 45.5 | 13.3 | 54.9 | 53.5 | 56.0 | 149.2 | 0.0 | 56.7 |
| LnGrp LOS | C | A | A | E | D | B | D | D | E | F | | E |
| Approach Vol, veh/h | | 1591 | | | 1795 | | | 130 | | | 147 | |
| Approach Delay, s/veh | | 2.6 | | | 51.3 | | | 55.2 | | | 125.9 | |
| Approach LOS | | A | | | D | | | E | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 20.0 | 80.7 | 15.1 | 14.2 | 40.7 | 60.0 | 12.0 | 17.3 |
| Change Period (Y+Rc), s | 4.0 | 5.3 | 4.0 | 4.0 | 5.3 | * 5.3 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 16.0 | 46.7 | 8.0 | 42.0 | 8.0 | * 55 | 8.0 | 42.0 |
| Max Q Clear Time (g_c+I1), s | 10.3 | 2.0 | 3.1 | 4.5 | 4.1 | 50.1 | 10.0 | 8.2 |
| Green Ext Time (p_c), s | 0.0 | 8.9 | 0.0 | 0.1 | 0.0 | 2.7 | 0.0 | 0.2 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 33.3 |
| HCM 2010 LOS | C |

Notes

# APPENDIX C: SIGNAL WARRANT WORKSHEETS



FEHR PEERS

| | | | |
|---|---|---|---|
| Major Street | Deer Valley Road | Project | Vineyards at Deer Creek |
| Minor Street | Balfour Rd | Scenario | EX |
| | | Peak Hour | AM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 0 | 366 | 0 | 77 |
| Through | 23 | 37 | 0 | 0 |
| Right | 29 | 0 | 0 | 336 |
| Total | 52 | 403 | 0 | 413 |

Major Street Direction

| | |
|---|---|
| X | North/South |
| | East/West |

Intersection Geometry

| | |
|---|---|
| Number of Approach Lanes for Minor Street | 1 |
| Total Approaches | 3 |

Worst Case Delay for Minor Street

| | |
|---|---|
| Stopped Delay (seconds per vehicle) | 21.6 |
| Approach with Worst Case Delay | WB |
| Total Vehicles on Approach | 413 |

| Warrant 3A, Peak Hour | | | |
|---|---|---|---|
| | **Peak Hour Delay on Minor Approach (vehicle-hours)** | **Peak Hour Volume on Minor Approach (vph)** | **Peak Hour Entering Volume Serviced (vph)** |
| **EX** | **2.5** | **413** | **868** |
| **Limiting Value** | **4** | **100** | **650** |
| **Condition Satisfied?** | **Not Met** | **Met** | **Met** |
| **Warrant Met** | **NO** | | |

FEHR PEERS

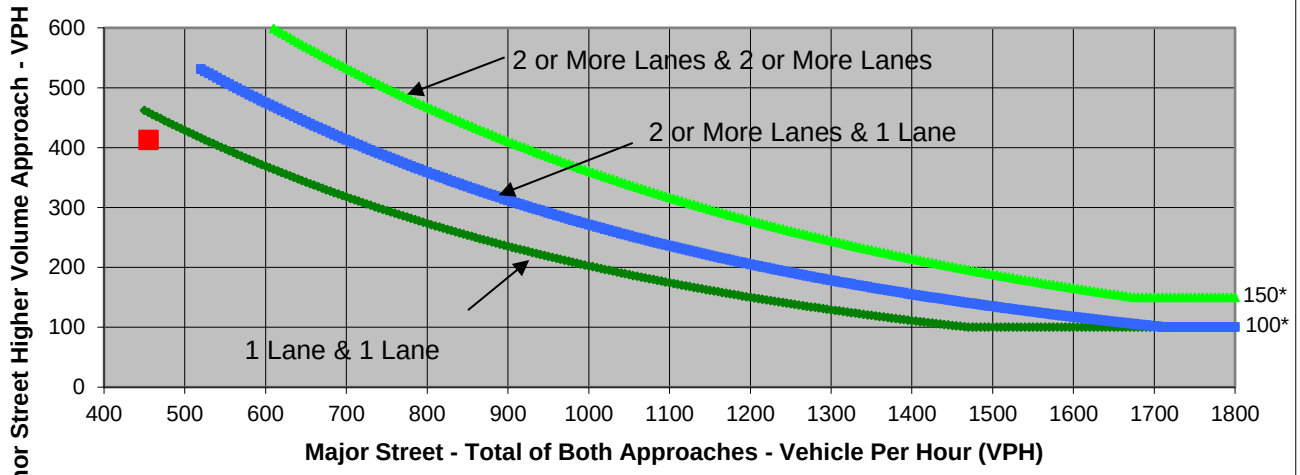
| | | | |
|---|---|---|---|
| Major Street | Deer Valley Road | Project | Vineyards at Deer Creek |
| Minor Street | Balfour Rd | Scenario | EX |
| | | Peak Hour | AM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 0 | 366 | 0 | 77 |
| Through | 23 | 37 | 0 | 0 |
| Right | 29 | 0 | 0 | 336 |
| Total | 52 | 403 | 0 | 413 |

Major Street Direction

| | |
|---|---|
| X | North/South |
| | East/West |




* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

| | Major Street | Minor Street | Warrant Met |
|---|---|---|---|
| | Deer Valley Road | Balfour Rd | |
| **Number of Approach Lanes** | **1** | **1** | **NO** |
| **Traffic Volume (VPH) *** | **455** | **413** | |

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

| | | | |
|---|---|---|---|
| Major Street | Balfour Rd | Project | Vineyards at Deer Creek |
| Minor Street | Mountain View Dr | Scenario | EX |
| | | Peak Hour | AM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 22 | 0 | 0 | 12 |
| Through | 0 | 0 | 920 | 1,365 |
| Right | 71 | 0 | 33 | 0 |
| Total | 93 | 0 | 953 | 1,377 |

Major Street Direction

| | |
|---|---|
| | North/South |
| X | East/West |

Intersection Geometry

| | |
|---|---|
| Number of Approach Lanes for Minor Street | 1 |
| Total Approaches | 3 |

Worst Case Delay for Minor Street

| | |
|---|---|
| Stopped Delay (seconds per vehicle) | 36 |
| Approach with Worst Case Delay | NB |
| Total Vehicles on Approach | 93 |

| Warrant 3A, Peak Hour | | | |
|---|---|---|---|
| | **Peak Hour Delay on Minor Approach (vehicle-hours)** | **Peak Hour Volume on Minor Approach (vph)** | **Peak Hour Entering Volume Serviced (vph)** |
| **EX** | **0.9** | **93** | **2,423** |
| **Limiting Value** | **4** | **100** | **650** |
| **Condition Satisfied?** | **Not Met** | **Not Met** | **Met** |
| **Warrant Met** | **NO** | | |

FEHR PEERS

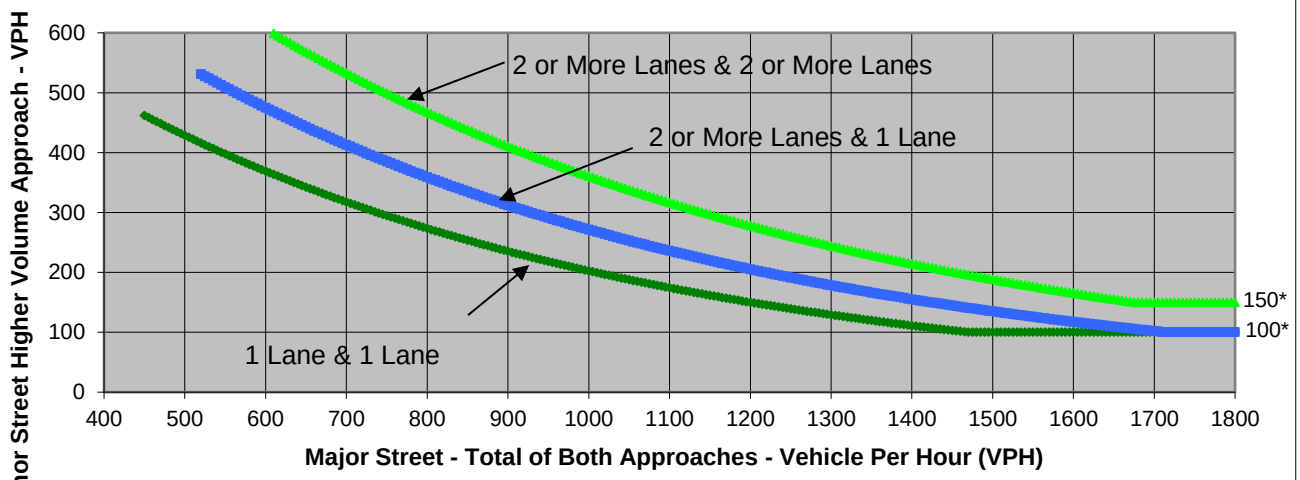
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|---|---|
| Project | Vineyards at Deer Creek |
| Scenario | EX |
| Peak Hour | AM |
| Major Street | Balfour Rd |
| Minor Street | Mountain View Dr |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 22 | 0 | 0 | 12 |
| Through | 0 | 0 | 920 | 1,365 |
| Right | 71 | 0 | 33 | 0 |
| Total | 93 | 0 | 953 | 1,377 |

Major Street Direction

| | |
|---|---|
| | North/South |
| X | East/West |




* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

| | Major Street | Minor Street | Warrant Met |
|---|---|---|---|
| | Balfour Rd | Mountain View Dr | |
| **Number of Approach Lanes** | **2** | **1** | **NO** |
| **Traffic Volume (VPH) *** | **2,330** | **93** | |

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

| | | | |
|---|---|---|---|
| Major Street | Deer Valley Road | Project | Vineyards at Deer Creek |
| Minor Street | Balfour Rd | Scenario | EX |
| | | Peak Hour | PM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 0 | 317 | 0 | 33 |
| Through | 37 | 29 | 0 | 0 |
| Right | 34 | 0 | 0 | 363 |
| Total | 71 | 346 | 0 | 396 |

Major Street Direction

| | |
|---|---|
| X | North/South |
| | East/West |

Intersection Geometry

| | |
|---|---|
| Number of Approach Lanes for Minor Street | 1 |
| Total Approaches | 3 |

Worst Case Delay for Minor Street

| | |
|---|---|
| Stopped Delay (seconds per vehicle) | 13.8 |
| Approach with Worst Case Delay | WB |
| Total Vehicles on Approach | 396 |

| Warrant 3A, Peak Hour | | | |
|---|---|---|---|
| | **Peak Hour Delay on Minor Approach (vehicle-hours)** | **Peak Hour Volume on Minor Approach (vph)** | **Peak Hour Entering Volume Serviced (vph)** |
| **EX** | **1.5** | **396** | **813** |
| **Limiting Value** | **4** | **100** | **650** |
| **Condition Satisfied?** | **Not Met** | **Met** | **Met** |
| **Warrant Met** | **NO** | | |

FEHR PEERS

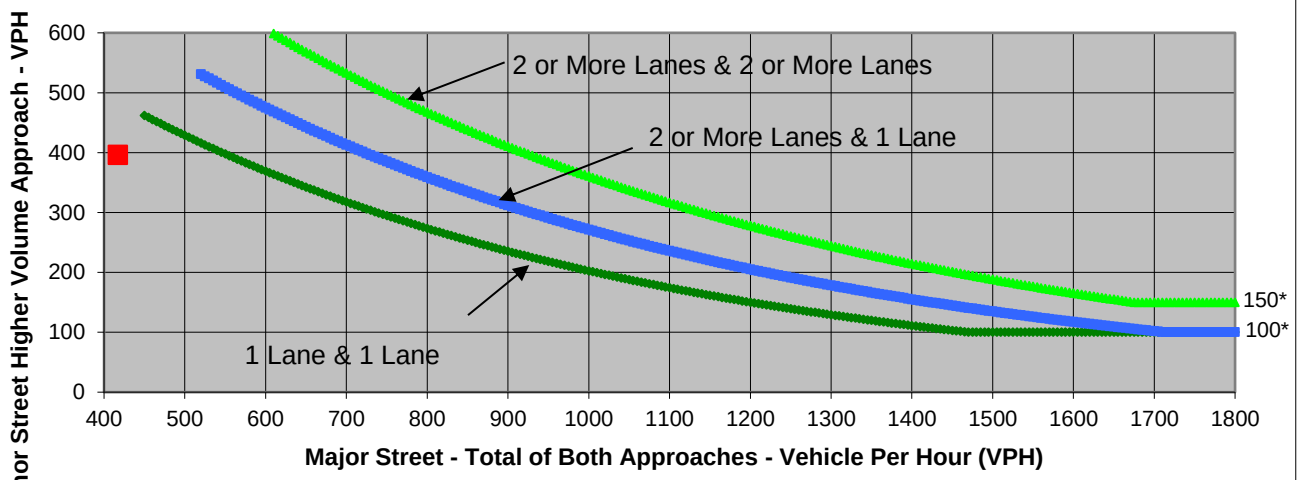
| | | | |
|---|---|---|---|
| Major Street | Deer Valley Road | Project | Vineyards at Deer Creek |
| Minor Street | Balfour Rd | Scenario | EX |
| | | Peak Hour | PM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 0 | 317 | 0 | 33 |
| Through | 37 | 29 | 0 | 0 |
| Right | 34 | 0 | 0 | 363 |
| Total | 71 | 346 | 0 | 396 |

Major Street Direction

| | |
|---|---|
| X | North/South |
| | East/West |




* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

| | Major Street | Minor Street | Warrant Met |
|---|---|---|---|
| | Deer Valley Road | Balfour Rd | |
| **Number of Approach Lanes** | **1** | **1** | **NO** |
| **Traffic Volume (VPH) *** | **417** | **396** | |

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

| | |
|---|---|
| Project | Vineyards at Deer Creek |
| Major Street | Balfour Rd |
| Scenario | EX |
| Minor Street | Mountain View Dr |
| Peak Hour | PM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 21 | 0 | 0 | 61 |
| Through | 0 | 0 | 918 | 750 |
| Right | 41 | 0 | 83 | 0 |
| Total | 62 | 0 | 1,001 | 811 |

Major Street Direction

| | |
|---|---|
| | North/South |
| X | East/West |

Intersection Geometry

| | |
|---|---|
| Number of Approach Lanes for Minor Street | 1 |
| Total Approaches | 3 |

Worst Case Delay for Minor Street

| | |
|---|---|
| Stopped Delay (seconds per vehicle) | 107 |
| Approach with Worst Case Delay | NB |
| Total Vehicles on Approach | 62 |

| Warrant 3A, Peak Hour | | | |
|---|---|---|---|
| | **Peak Hour Delay on Minor Approach (vehicle-hours)** | **Peak Hour Volume on Minor Approach (vph)** | **Peak Hour Entering Volume Serviced (vph)** |
| **EX** | **1.8** | **62** | **1,874** |
| **Limiting Value** | **4** | **100** | **650** |
| **Condition Satisfied?** | **Not Met** | **Not Met** | **Met** |
| **Warrant Met** | **NO** | | |

FEHR PEERS

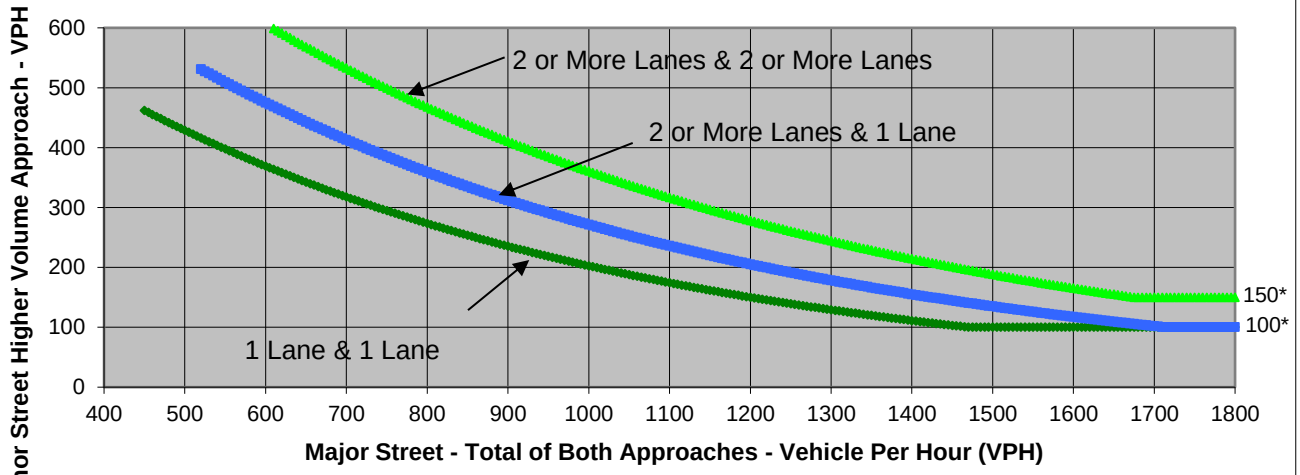
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|---|---|---|---|
| Major Street | Balfour Rd | Project | Vineyards at Deer Creek |
| Minor Street | Mountain View Dr | Scenario | EX |
| | | Peak Hour | PM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 21 | 0 | 0 | 61 |
| Through | 0 | 0 | 918 | 750 |
| Right | 41 | 0 | 83 | 0 |
| Total | 62 | 0 | 1,001 | 811 |

Major Street Direction

| | |
|---|---|
| | North/South |
| X | East/West |




* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

| | Major Street | Minor Street | Warrant Met |
|---|---|---|---|
| | Balfour Rd | Mountain View Dr | |
| **Number of Approach Lanes** | **2** | **1** | **NO** |
| **Traffic Volume (VPH) *** | **1,812** | **62** | |

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

| | | | |
|---|---|---|---|
| Major Street | Deer Valley Road | Project | Vineyards at Deer Creek |
| Minor Street | Balfour Rd | Scenario | EXPP |
| | | Peak Hour | AM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 0 | 422 | 0 | 82 |
| Through | 23 | 37 | 0 | 0 |
| Right | 32 | 0 | 0 | 381 |
| Total | 55 | 459 | 0 | 463 |

Major Street Direction

| | |
|---|---|
| X | North/South |
| | East/West |

Intersection Geometry

| | |
|---|---|
| Number of Approach Lanes for Minor Street | 1 |
| Total Approaches | 3 |

Worst Case Delay for Minor Street

| | |
|---|---|
| Stopped Delay (seconds per vehicle) | 31.4 |
| Approach with Worst Case Delay | WB |
| Total Vehicles on Approach | 463 |

| Warrant 3A, Peak Hour | | | |
|---|---|---|---|
| | **Peak Hour Delay on Minor Approach (vehicle-hours)** | **Peak Hour Volume on Minor Approach (vph)** | **Peak Hour Entering Volume Serviced (vph)** |
| **EXPP** | **4** | **463** | **977** |
| **Limiting Value** | **4** | **100** | **650** |
| **Condition Satisfied?** | **Met** | **Met** | **Met** |
| **Warrant Met** | **YES** | | |

FEHR PEERS

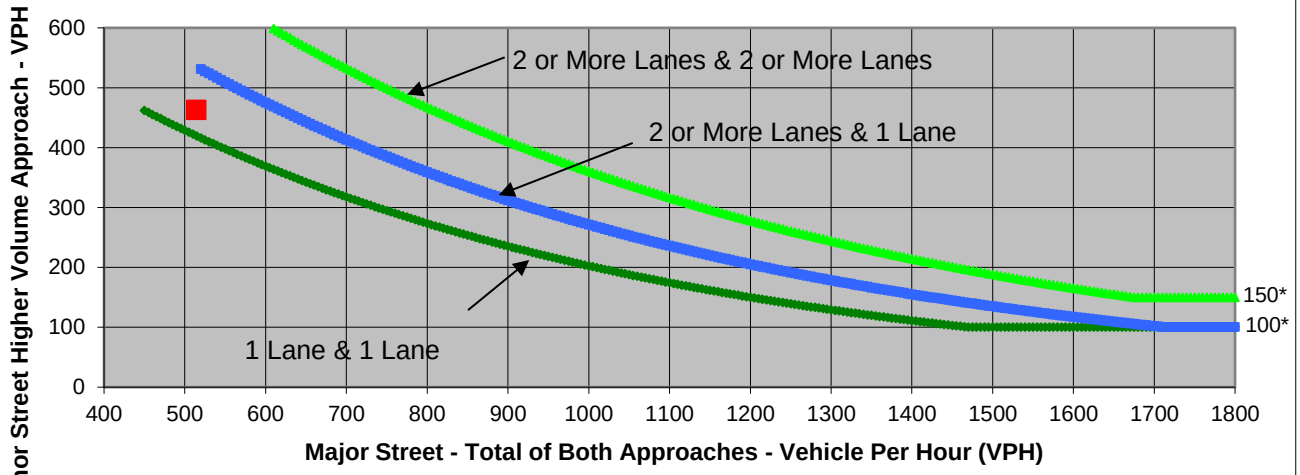
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|---|---|---|---|
| Major Street | Deer Valley Road | Project | Vineyards at Deer Creek |
| Minor Street | Balfour Rd | Scenario | EXPP |
| | | Peak Hour | AM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 0 | 422 | 0 | 82 |
| Through | 23 | 37 | 0 | 0 |
| Right | 32 | 0 | 0 | 381 |
| Total | 55 | 459 | 0 | 463 |

Major Street Direction

| | |
|---|---|
| X | North/South |
| | East/West |




* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

| | Major Street | Minor Street | Warrant Met |
|---|---|---|---|
| | Deer Valley Road | Balfour Rd | |
| **Number of Approach Lanes** | **1** | **1** | **YES** |
| **Traffic Volume (VPH) *** | **514** | **463** | |

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

| | | | |
|---|---|---|---|
| Major Street | Balfour Rd | Project | Vineyards at Deer Creek |
| Minor Street | Project Retail Driveway | Scenario | EXPP |
| | | Peak Hour | AM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 0 | 30 | 19 | 0 |
| Through | 0 | 0 | 578 | 598 |
| Right | 0 | 3 | 0 | 39 |
| Total | 0 | 33 | 597 | 637 |

Major Street Direction

| | |
|---|---|
| | North/South |
| X | East/West |

Intersection Geometry

| | |
|---|---|
| Number of Approach Lanes for Minor Street | 1 |
| Total Approaches | 3 |

Worst Case Delay for Minor Street

| | |
|---|---|
| Stopped Delay (seconds per vehicle) | 168.3 |
| Approach with Worst Case Delay | SB |
| Total Vehicles on Approach | 33 |

| Warrant 3A, Peak Hour | | | |
|---|---|---|---|
| | **Peak Hour Delay on Minor Approach (vehicle-hours)** | **Peak Hour Volume on Minor Approach (vph)** | **Peak Hour Entering Volume Serviced (vph)** |
| **EXPP** | **1.5** | **33** | **1,267** |
| **Limiting Value** | **4** | **100** | **650** |
| **Condition Satisfied?** | **Not Met** | **Not Met** | **Met** |
| **Warrant Met** | **NO** | | |

FEHR PEERS

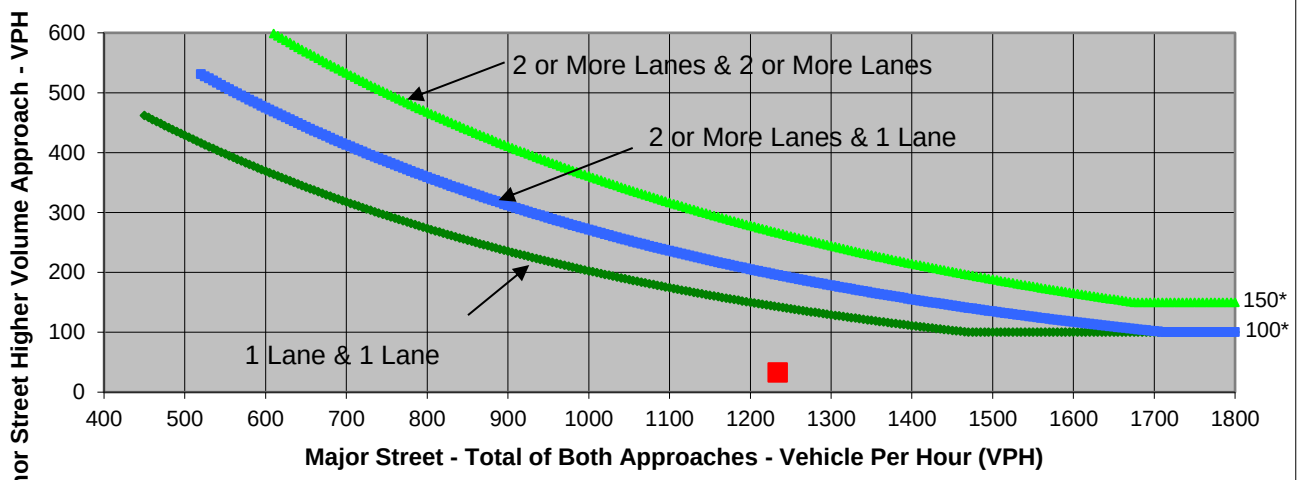
| | | | |
|---|---|---|---|
| Major Street | Balfour Rd | Project | Vineyards at Deer Creek |
| Minor Street | Project Retail Driveway | Scenario | EXPP |
| | | Peak Hour | AM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 0 | 30 | 19 | 0 |
| Through | 0 | 0 | 578 | 598 |
| Right | 0 | 3 | 0 | 39 |
| Total | 0 | 33 | 597 | 637 |

Major Street Direction

| | |
|---|---|
| | North/South |
| X | East/West |




* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

| | Major Street | Minor Street | Warrant Met |
|---|---|---|---|
| | Balfour Rd | Project Retail Driveway | |
| **Number of Approach Lanes** | **2** | **1** | **NO** |
| **Traffic Volume (VPH) *** | **1,234** | **33** | |

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

| | | | |
|---|---|---|---|
| Major Street | Balfour Rd | Project | Vineyards at Deer Creek |
| Minor Street | Mountain View Dr | Scenario | EXPP |
| | | Peak Hour | AM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 22 | 0 | 0 | 12 |
| Through | 0 | 0 | 1,349 | 1,559 |
| Right | 71 | 0 | 33 | 0 |
| Total | 93 | 0 | 1,382 | 1,571 |

Major Street Direction

| | |
|---|---|
| | North/South |
| X | East/West |

Intersection Geometry

| | |
|---|---|
| Number of Approach Lanes for Minor Street | 1 |
| Total Approaches | 3 |

Worst Case Delay for Minor Street

| | |
|---|---|
| Stopped Delay (seconds per vehicle) | 23.9 |
| Approach with Worst Case Delay | NB |
| Total Vehicles on Approach | 93 |

| Warrant 3A, Peak Hour | | | |
|---|---|---|---|
| | **Peak Hour Delay on Minor Approach (vehicle-hours)** | **Peak Hour Volume on Minor Approach (vph)** | **Peak Hour Entering Volume Serviced (vph)** |
| **EXPP** | **0.6** | **93** | **3,046** |
| **Limiting Value** | **4** | **100** | **650** |
| **Condition Satisfied?** | **Not Met** | **Not Met** | **Met** |
| **Warrant Met** | **NO** | | |

FEHR PEERS

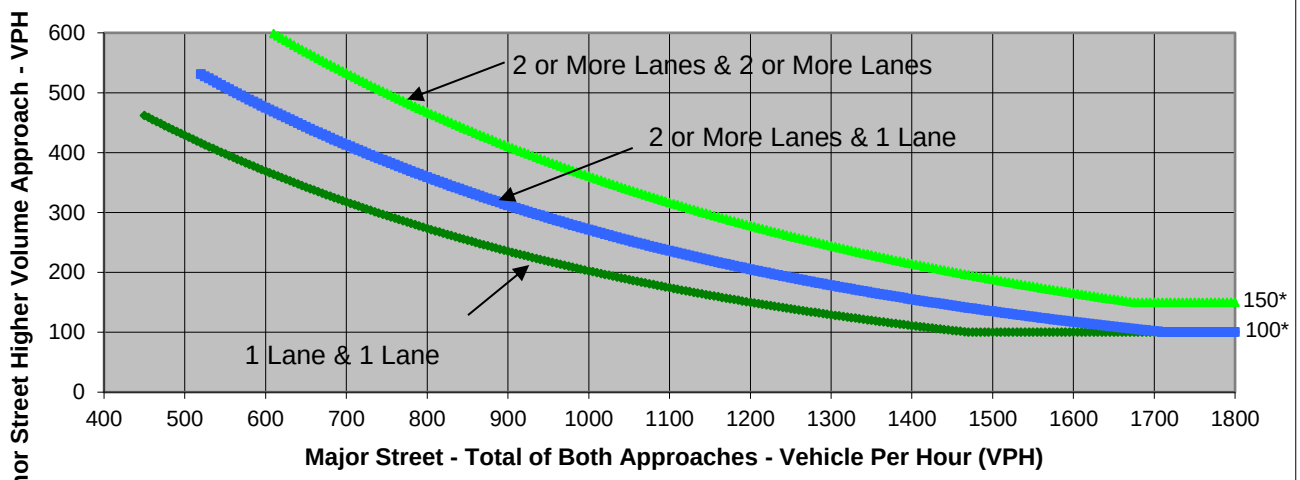
| | | | |
|---|---|---|---|
| Major Street | Balfour Rd | Project | Vineyards at Deer Creek |
| Minor Street | Mountain View Dr | Scenario | EXPP |
| | | Peak Hour | AM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 22 | 0 | 0 | 12 |
| Through | 0 | 0 | 1,349 | 1,559 |
| Right | 71 | 0 | 33 | 0 |
| Total | 93 | 0 | 1,382 | 1,571 |

Major Street Direction

| | |
|---|---|
| | North/South |
| X | East/West |




* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

| | Major Street | Minor Street | Warrant Met |
|---|---|---|---|
| | Balfour Rd | Mountain View Dr | |
| **Number of Approach Lanes** | **2** | **1** | **NO** |
| **Traffic Volume (VPH) *** | **2,953** | **93** | |

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

| | | | |
|---|---|---|---|
| Major Street | Deer Valley Road | Project | Vineyards at Deer Creek |
| Minor Street | Balfour Rd | Scenario | EXPP |
| | | Peak Hour | PM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 0 | 486 | 0 | 39 |
| Through | 37 | 29 | 0 | 0 |
| Right | 42 | 0 | 0 | 415 |
| Total | 79 | 515 | 0 | 454 |

Major Street Direction

| | |
|---|---|
| X | North/South |
| | East/West |

Intersection Geometry

| | |
|---|---|
| Number of Approach Lanes for Minor Street | 1 |
| Total Approaches | 3 |

Worst Case Delay for Minor Street

| | |
|---|---|
| Stopped Delay (seconds per vehicle) | 98.2 |
| Approach with Worst Case Delay | WB |
| Total Vehicles on Approach | 454 |

| Warrant 3A, Peak Hour | | | |
|---|---|---|---|
| | **Peak Hour Delay on Minor Approach (vehicle-hours)** | **Peak Hour Volume on Minor Approach (vph)** | **Peak Hour Entering Volume Serviced (vph)** |
| **EXPP** | **12.4** | **454** | **1,048** |
| **Limiting Value** | **4** | **100** | **650** |
| **Condition Satisfied?** | **Met** | **Met** | **Met** |
| **Warrant Met** | **YES** | | |

FEHR PEERS

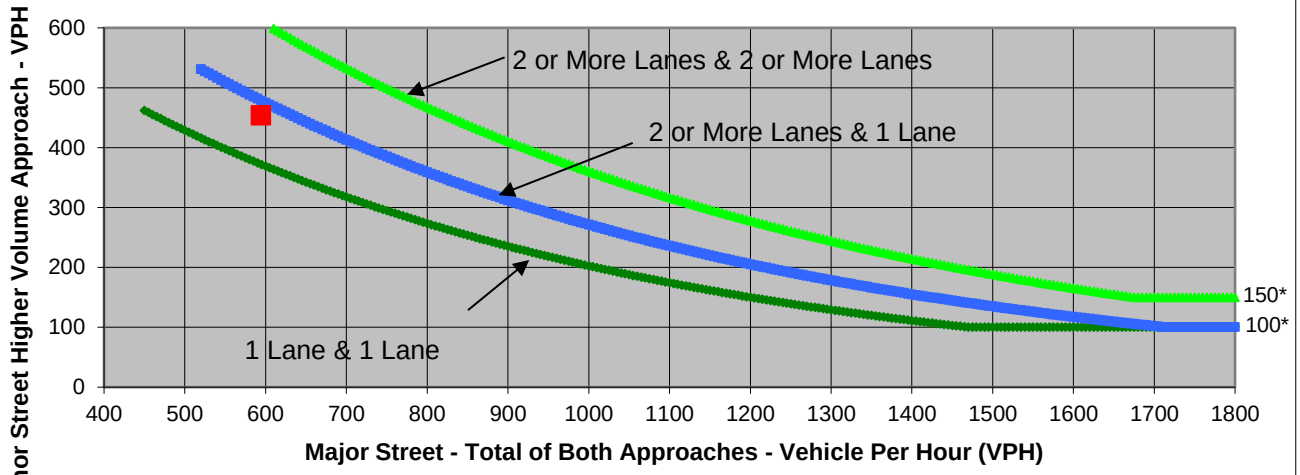
| | | | |
|---|---|---|---|
| Major Street | Deer Valley Road | Project | Vineyards at Deer Creek |
| Minor Street | Balfour Rd | Scenario | EXPP |
| | | Peak Hour | PM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 0 | 486 | 0 | 39 |
| Through | 37 | 29 | 0 | 0 |
| Right | 42 | 0 | 0 | 415 |
| Total | 79 | 515 | 0 | 454 |

Major Street Direction

| | |
|---|---|
| X | North/South |
| | East/West |




* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

| | Major Street | Minor Street | Warrant Met |
|---|---|---|---|
| | Deer Valley Road | Balfour Rd | |
| **Number of Approach Lanes** | **1** | **1** | **YES** |
| **Traffic Volume (VPH) *** | **594** | **454** | |

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

| | | | |
|---|---|---|---|
| Major Street | Balfour Rd | Project | Vineyards at Deer Creek |
| Minor Street | Project Retail Driveway | Scenario | EXPP |
| | | Peak Hour | PM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 0 | 163 | 56 | 0 |
| Through | 0 | 0 | 472 | 436 |
| Right | 0 | 18 | 0 | 110 |
| Total | 0 | 181 | 528 | 546 |

Major Street Direction

| | |
|---|---|
| | North/South |
| X | East/West |

Intersection Geometry

| | |
|---|---|
| Number of Approach Lanes for Minor Street | 1 |
| Total Approaches | 3 |

Worst Case Delay for Minor Street

| | |
|---|---|
| Stopped Delay (seconds per vehicle) | 1943.8 |
| Approach with Worst Case Delay | SB |
| Total Vehicles on Approach | 181 |

| Warrant 3A, Peak Hour | | | |
|---|---|---|---|
| | **Peak Hour Delay on Minor Approach (vehicle-hours)** | **Peak Hour Volume on Minor Approach (vph)** | **Peak Hour Entering Volume Serviced (vph)** |
| **EXPP** | **97.7** | **181** | **1,255** |
| **Limiting Value** | **4** | **100** | **650** |
| **Condition Satisfied?** | **Met** | **Met** | **Met** |
| **Warrant Met** | **YES** | | |

FEHR PEERS

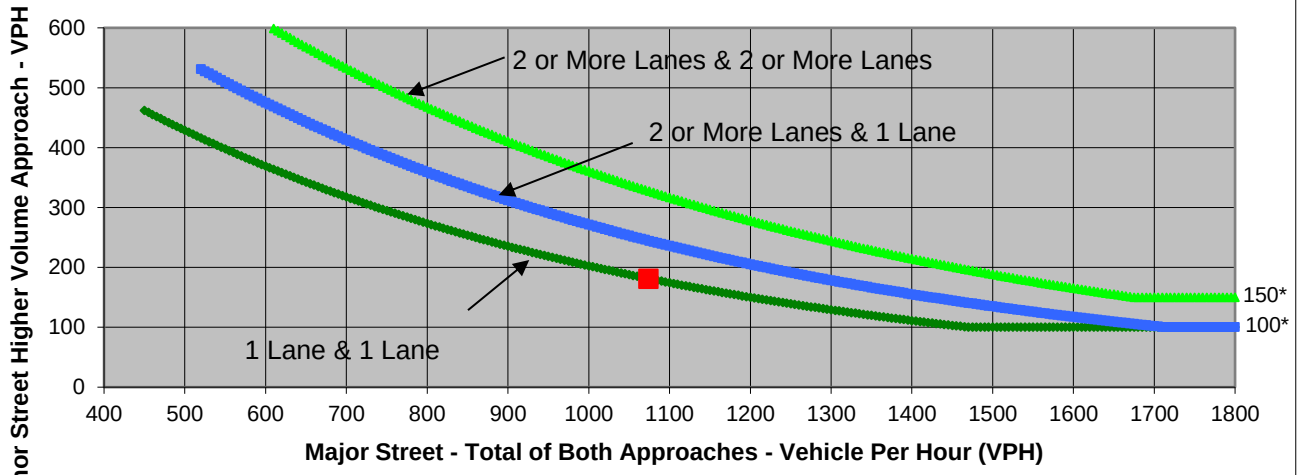
| | | | |
|---|---|---|---|
| Major Street | Balfour Rd | Project | Vineyards at Deer Creek |
| Minor Street | Project Retail Driveway | Scenario | EXPP |
| | | Peak Hour | PM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 0 | 163 | 56 | 0 |
| Through | 0 | 0 | 472 | 436 |
| Right | 0 | 18 | 0 | 110 |
| Total | 0 | 181 | 528 | 546 |

Major Street Direction

| | |
|---|---|
| | North/South |
| X | East/West |




* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

| | Major Street | Minor Street | Warrant Met |
|---|---|---|---|
| | Balfour Rd | Project Retail Driveway | |
| **Number of Approach Lanes** | **2** | **1** | **NO** |
| **Traffic Volume (VPH) *** | **1,074** | **181** | |

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

| | | | |
|---|---|---|---|
| Major Street | Balfour Rd | Project | Vineyards at Deer Creek |
| Minor Street | Mountain View Dr | Scenario | EXPP |
| | | Peak Hour | PM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 21 | 0 | 0 | 61 |
| Through | 0 | 0 | 1,433 | 1,323 |
| Right | 41 | 0 | 83 | 0 |
| Total | 62 | 0 | 1,516 | 1,384 |

Major Street Direction

| | |
|---|---|
| | North/South |
| X | East/West |

Intersection Geometry

| | |
|---|---|
| Number of Approach Lanes for Minor Street | 1 |
| Total Approaches | 3 |

Worst Case Delay for Minor Street

| | |
|---|---|
| Stopped Delay (seconds per vehicle) | 0 |
| Approach with Worst Case Delay | NB |
| Total Vehicles on Approach | 62 |

| Warrant 3A, Peak Hour | | | |
|---|---|---|---|
| | **Peak Hour Delay on Minor Approach (vehicle-hours)** | **Peak Hour Volume on Minor Approach (vph)** | **Peak Hour Entering Volume Serviced (vph)** |
| **EXPP** | **0** | **62** | **2,962** |
| **Limiting Value** | **4** | **100** | **650** |
| **Condition Satisfied?** | **Not Met** | **Not Met** | **Met** |
| **Warrant Met** | **NO** | | |

FEHR PEERS

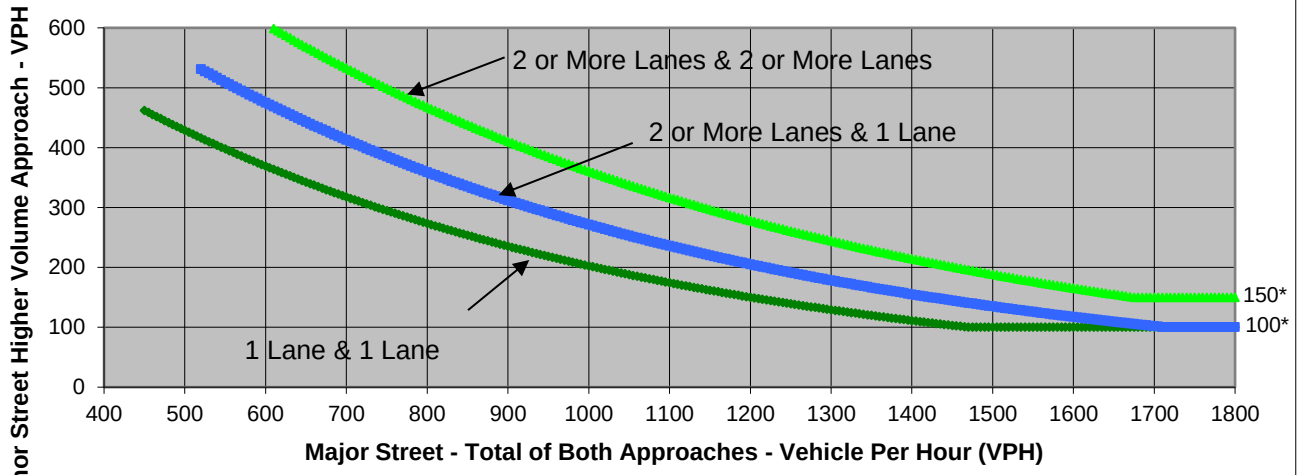
| | | | |
|---|---|---|---|
| Major Street | Balfour Rd | Project | Vineyards at Deer Creek |
| Minor Street | Mountain View Dr | Scenario | EXPP |
| | | Peak Hour | PM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 21 | 0 | 0 | 61 |
| Through | 0 | 0 | 1,433 | 1,323 |
| Right | 41 | 0 | 83 | 0 |
| Total | 62 | 0 | 1,516 | 1,384 |

Major Street Direction

| | |
|---|---|
| | North/South |
| X | East/West |




* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

| | Major Street | Minor Street | Warrant Met |
|---|---|---|---|
| | Balfour Rd | Mountain View Dr | |
| **Number of Approach Lanes** | **2** | **1** | **NO** |
| **Traffic Volume (VPH) *** | **2,900** | **62** | |

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

| | | | |
|---|---|---|---|
| Major Street | Deer Valley Road | Project | Vineyards at Deer Creek |
| Minor Street | Balfour Rd | Scenario | NT |
| | | Peak Hour | AM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 0 | 384 | 0 | 94 |
| Through | 24 | 64 | 0 | 0 |
| Right | 47 | 0 | 0 | 353 |
| Total | 71 | 448 | 0 | 447 |

Major Street Direction

| | |
|---|---|
| X | North/South |
| | East/West |

Intersection Geometry

| | |
|---|---|
| Number of Approach Lanes for Minor Street | 1 |
| Total Approaches | 3 |

Worst Case Delay for Minor Street

| | |
|---|---|
| Stopped Delay (seconds per vehicle) | 35.8 |
| Approach with Worst Case Delay | WB |
| Total Vehicles on Approach | 447 |

| Warrant 3A, Peak Hour | | | |
|---|---|---|---|
| | **Peak Hour Delay on Minor Approach (vehicle-hours)** | **Peak Hour Volume on Minor Approach (vph)** | **Peak Hour Entering Volume Serviced (vph)** |
| **NT** | **4.4** | **447** | **966** |
| **Limiting Value** | **4** | **100** | **650** |
| **Condition Satisfied?** | **Met** | **Met** | **Met** |
| **Warrant Met** | **YES** | | |

FEHR PEERS

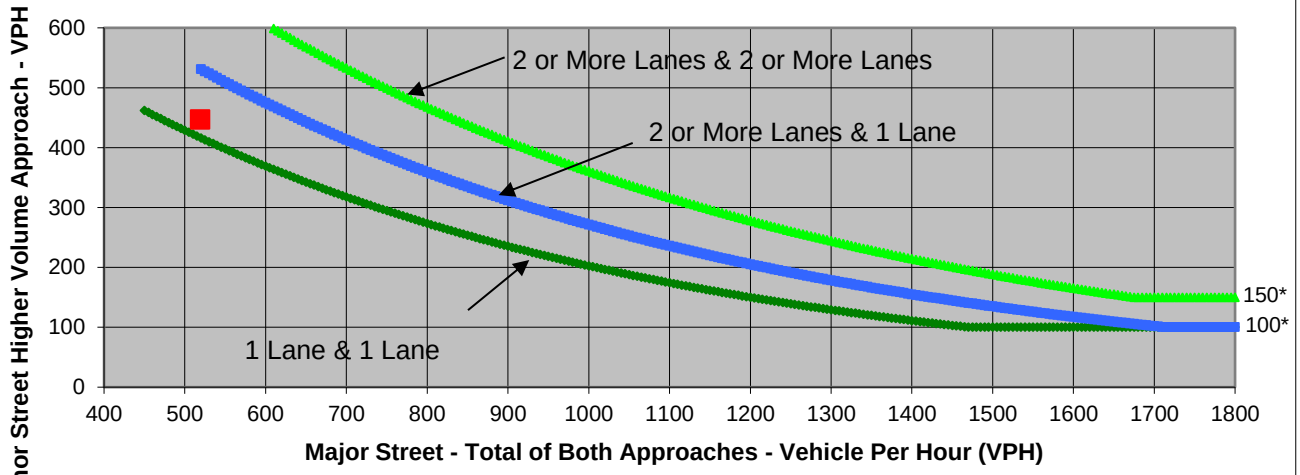
| | | | |
|---|---|---|---|
| Major Street | Deer Valley Road | Project | Vineyards at Deer Creek |
| Minor Street | Balfour Rd | Scenario | NT |
| | | Peak Hour | AM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 0 | 384 | 0 | 94 |
| Through | 24 | 64 | 0 | 0 |
| Right | 47 | 0 | 0 | 353 |
| Total | 71 | 448 | 0 | 447 |

Major Street Direction

| | |
|---|---|
| X | North/South |
| | East/West |




* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

| | Major Street | Minor Street | Warrant Met |
|---|---|---|---|
| | Deer Valley Road | Balfour Rd | |
| **Number of Approach Lanes** | **1** | **1** | **YES** |
| **Traffic Volume (VPH) *** | **519** | **447** | |

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

| | | | |
|---|---|---|---|
| Major Street | Balfour Rd | Project | Vineyards at Deer Creek |
| Minor Street | Mountain View Dr | Scenario | NT |
| | | Peak Hour | AM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 23 | 0 | 0 | 13 |
| Through | 0 | 0 | 983 | 1,446 |
| Right | 75 | 0 | 35 | 0 |
| Total | 98 | 0 | 1,018 | 1,459 |

Major Street Direction

| | |
|---|---|
| | North/South |
| X | East/West |

Intersection Geometry

| | |
|---|---|
| Number of Approach Lanes for Minor Street | 1 |
| Total Approaches | 3 |

Worst Case Delay for Minor Street

| | |
|---|---|
| Stopped Delay (seconds per vehicle) | 47 |
| Approach with Worst Case Delay | NB |
| Total Vehicles on Approach | 98 |

| Warrant 3A, Peak Hour | | | |
|---|---|---|---|
| | **Peak Hour Delay on Minor Approach (vehicle-hours)** | **Peak Hour Volume on Minor Approach (vph)** | **Peak Hour Entering Volume Serviced (vph)** |
| **NT** | **1.3** | **98** | **2,575** |
| **Limiting Value** | **4** | **100** | **650** |
| **Condition Satisfied?** | **Not Met** | **Not Met** | **Met** |
| **Warrant Met** | **NO** | | |

FEHR PEERS

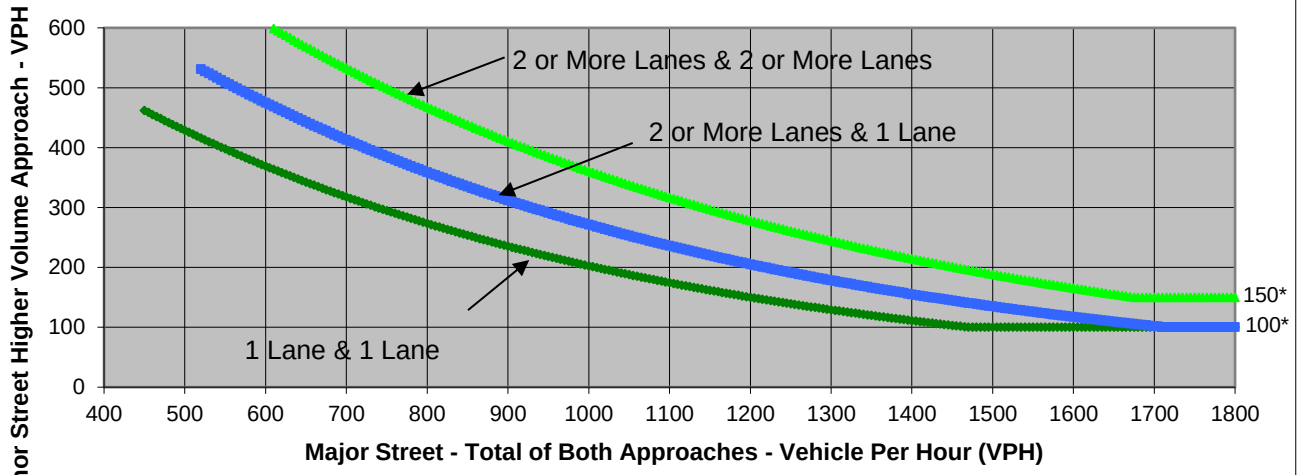
| | | | |
|---|---|---|---|
| Major Street | Balfour Rd | Project | Vineyards at Deer Creek |
| Minor Street | Mountain View Dr | Scenario | NT |
| | | Peak Hour | AM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 23 | 0 | 0 | 13 |
| Through | 0 | 0 | 983 | 1,446 |
| Right | 75 | 0 | 35 | 0 |
| Total | 98 | 0 | 1,018 | 1,459 |

Major Street Direction

| | |
|---|---|
| | North/South |
| X | East/West |




* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

| | Major Street | Minor Street | Warrant Met |
|---|---|---|---|
| | Balfour Rd | Mountain View Dr | |
| **Number of Approach Lanes** | **2** | **1** | **NO** |
| **Traffic Volume (VPH) *** | **2,477** | **98** | |

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

| | | | |
|---|---|---|---|
| Major Street | Deer Valley Road | Project | Vineyards at Deer Creek |
| Minor Street | Balfour Rd | Scenario | NT |
| | | Peak Hour | PM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 0 | 333 | 0 | 45 |
| Through | 39 | 47 | 0 | 0 |
| Right | 77 | 0 | 0 | 381 |
| Total | 116 | 380 | 0 | 426 |

Major Street Direction

| | |
|---|---|
| X | North/South |
| | East/West |

Intersection Geometry

| | |
|---|---|
| Number of Approach Lanes for Minor Street | 1 |
| Total Approaches | 3 |

Worst Case Delay for Minor Street

| | |
|---|---|
| Stopped Delay (seconds per vehicle) | 17.2 |
| Approach with Worst Case Delay | WB |
| Total Vehicles on Approach | 426 |

| Warrant 3A, Peak Hour | | | |
|---|---|---|---|
| | **Peak Hour Delay on Minor Approach (vehicle-hours)** | **Peak Hour Volume on Minor Approach (vph)** | **Peak Hour Entering Volume Serviced (vph)** |
| **NT** | **2** | **426** | **922** |
| **Limiting Value** | **4** | **100** | **650** |
| **Condition Satisfied?** | **Not Met** | **Met** | **Met** |
| **Warrant Met** | **NO** | | |

FEHR PEERS

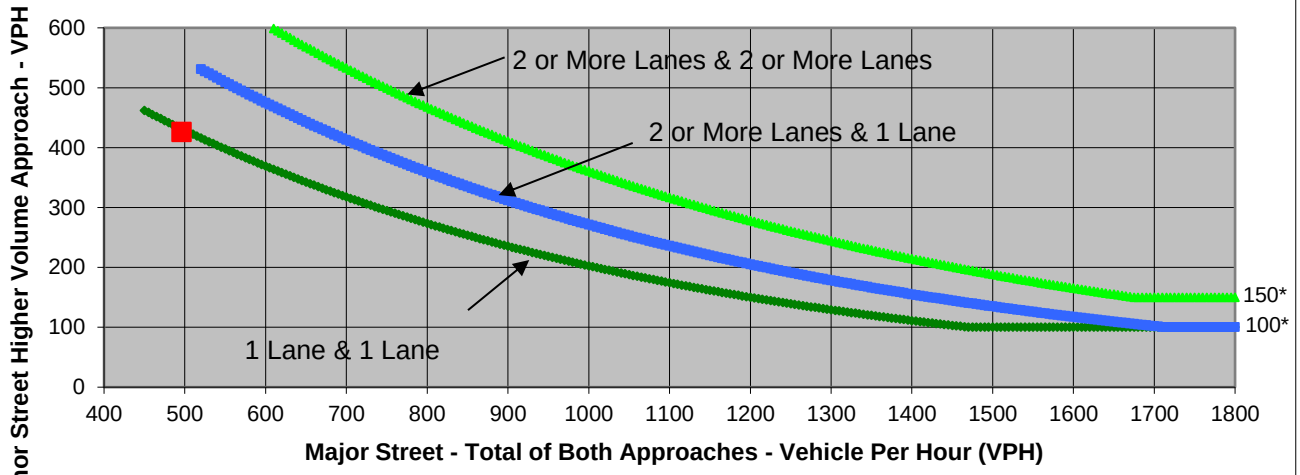
| | | | |
|---|---|---|---|
| Major Street | Deer Valley Road | Project | Vineyards at Deer Creek |
| Minor Street | Balfour Rd | Scenario | NT |
| | | Peak Hour | PM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 0 | 333 | 0 | 45 |
| Through | 39 | 47 | 0 | 0 |
| Right | 77 | 0 | 0 | 381 |
| Total | 116 | 380 | 0 | 426 |

Major Street Direction

| | |
|---|---|
| X | North/South |
| | East/West |




* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

| | Major Street | Minor Street | Warrant Met |
|---|---|---|---|
| | Deer Valley Road | Balfour Rd | |
| **Number of Approach Lanes** | **1** | **1** | **NO** |
| **Traffic Volume (VPH) *** | **496** | **426** | |

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

| | | | |
|---|---|---|---|
| Major Street | Balfour Rd | Project | Vineyards at Deer Creek |
| Minor Street | Mountain View Dr | Scenario | NT |
| | | Peak Hour | PM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 22 | 0 | 0 | 64 |
| Through | 0 | 0 | 1,006 | 798 |
| Right | 43 | 0 | 87 | 0 |
| Total | 65 | 0 | 1,093 | 862 |

Major Street Direction

| | |
|---|---|
| | North/South |
| X | East/West |

Intersection Geometry

| | |
|---|---|
| Number of Approach Lanes for Minor Street | 1 |
| Total Approaches | 3 |

Worst Case Delay for Minor Street

| | |
|---|---|
| Stopped Delay (seconds per vehicle) | 195.4 |
| Approach with Worst Case Delay | NB |
| Total Vehicles on Approach | 65 |

| Warrant 3A, Peak Hour | | | |
|---|---|---|---|
| | **Peak Hour Delay on Minor Approach (vehicle-hours)** | **Peak Hour Volume on Minor Approach (vph)** | **Peak Hour Entering Volume Serviced (vph)** |
| **NT** | **3.5** | **65** | **2,020** |
| **Limiting Value** | **4** | **100** | **650** |
| **Condition Satisfied?** | **Not Met** | **Not Met** | **Met** |
| **Warrant Met** | **NO** | | |

FEHR PEERS

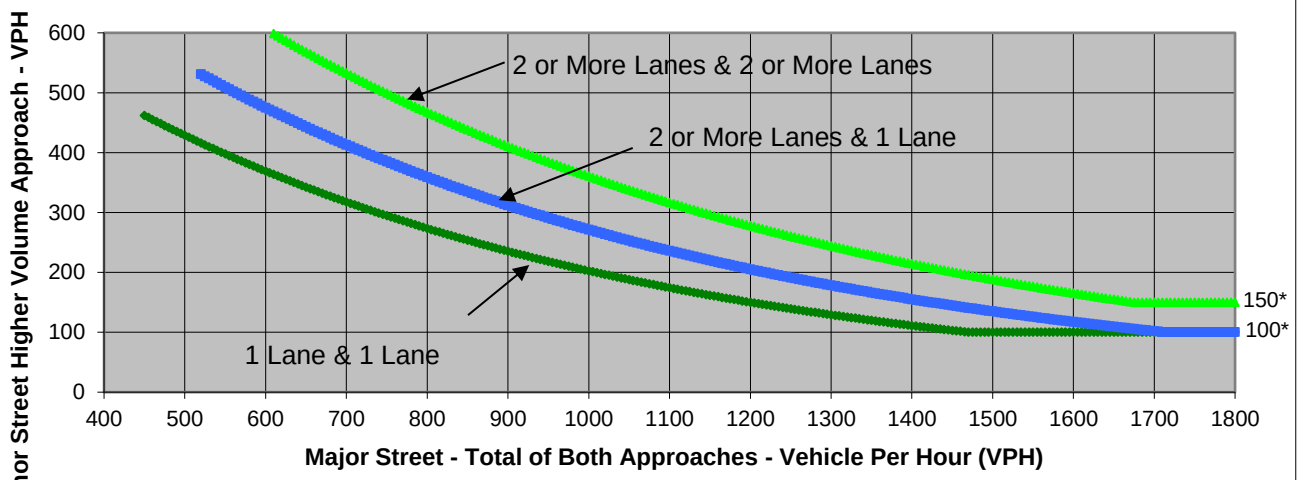
| | | | |
|---|---|---|---|
| Major Street | Balfour Rd | Project | Vineyards at Deer Creek |
| Minor Street | Mountain View Dr | Scenario | NT |
| | | Peak Hour | PM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 22 | 0 | 0 | 64 |
| Through | 0 | 0 | 1,006 | 798 |
| Right | 43 | 0 | 87 | 0 |
| Total | 65 | 0 | 1,093 | 862 |

Major Street Direction

| | |
|---|---|
| | North/South |
| X | East/West |




* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

| | Major Street | Minor Street | Warrant Met |
|---|---|---|---|
| | Balfour Rd | Mountain View Dr | |
| **Number of Approach Lanes** | **2** | **1** | **NO** |
| **Traffic Volume (VPH) *** | **1,955** | **65** | |

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

| | | | |
|---|---|---|---|
| Major Street | Deer Valley Road | Project | Vineyards at Deer Creek |
| Minor Street | Balfour Rd | Scenario | NTPP |
| | | Peak Hour | AM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 0 | 440 | 0 | 99 |
| Through | 24 | 64 | 0 | 0 |
| Right | 50 | 0 | 0 | 398 |
| Total | 74 | 504 | 0 | 497 |

Major Street Direction

| | |
|---|---|
| X | North/South |
| | East/West |

Intersection Geometry

| | |
|---|---|
| Number of Approach Lanes for Minor Street | 1 |
| Total Approaches | 3 |

Worst Case Delay for Minor Street

| | |
|---|---|
| Stopped Delay (seconds per vehicle) | 36.4 |
| Approach with Worst Case Delay | WB |
| Total Vehicles on Approach | 497 |

| Warrant 3A, Peak Hour | | | |
|---|---|---|---|
| | **Peak Hour Delay on Minor Approach (vehicle-hours)** | **Peak Hour Volume on Minor Approach (vph)** | **Peak Hour Entering Volume Serviced (vph)** |
| **NTPP** | **5** | **497** | **1,075** |
| **Limiting Value** | **4** | **100** | **650** |
| **Condition Satisfied?** | **Met** | **Met** | **Met** |
| **Warrant Met** | **YES** | | |

FEHR PEERS

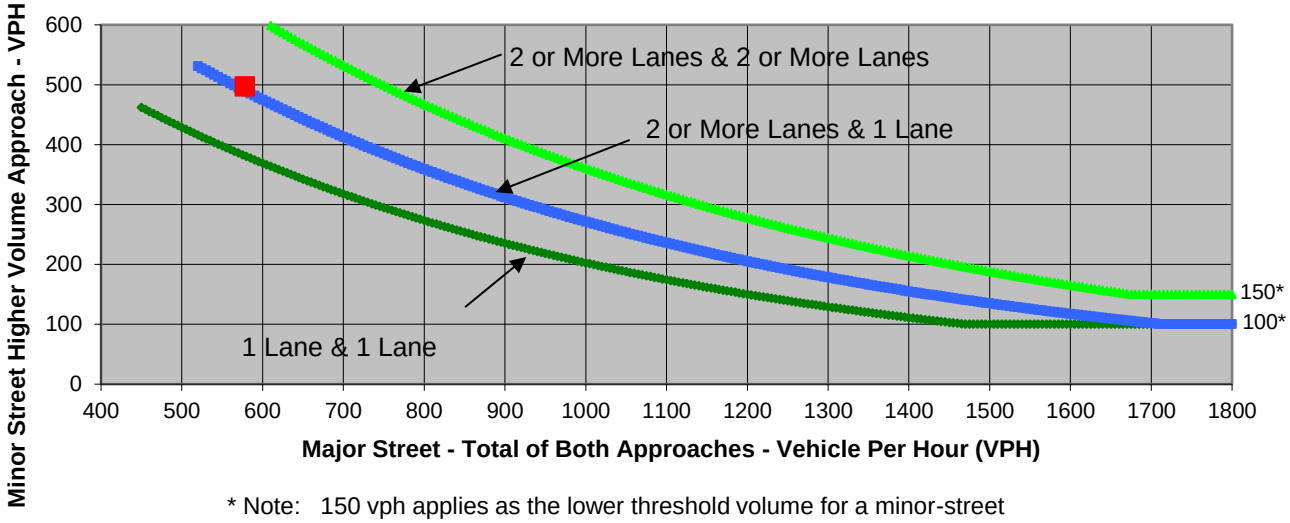
| | | | |
|---|---|---|---|
| Major Street | Deer Valley Road | Project | Vineyards at Deer Creek |
| Minor Street | Balfour Rd | Scenario | NTPP |
| | | Peak Hour | AM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 0 | 440 | 0 | 99 |
| Through | 24 | 64 | 0 | 0 |
| Right | 50 | 0 | 0 | 398 |
| Total | 74 | 504 | 0 | 497 |

Major Street Direction

| | |
|---|---|
| X | North/South |
| | East/West |




* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

| | Major Street | Minor Street | Warrant Met |
|---|---|---|---|
| | Deer Valley Road | Balfour Rd | |
| **Number of Approach Lanes** | **1** | **1** | **YES** |
| **Traffic Volume (VPH) *** | **578** | **497** | |

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

| | | | |
|---|---|---|---|
| Major Street | Balfour Rd | Project | Vineyards at Deer Creek |
| Minor Street | Project Retail Driveway | Scenario | NTPP |
| | | Peak Hour | AM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 0 | 30 | 19 | 0 |
| Through | 0 | 0 | 622 | 639 |
| Right | 0 | 3 | 0 | 39 |
| Total | 0 | 33 | 641 | 678 |

Major Street Direction

| | |
|---|---|
| | North/South |
| X | East/West |

Intersection Geometry

| | |
|---|---|
| Number of Approach Lanes for Minor Street | 1 |
| Total Approaches | 3 |

Worst Case Delay for Minor Street

| | |
|---|---|
| Stopped Delay (seconds per vehicle) | 257.7 |
| Approach with Worst Case Delay | SB |
| Total Vehicles on Approach | 33 |

| Warrant 3A, Peak Hour | | | |
|---|---|---|---|
| | **Peak Hour Delay on Minor Approach (vehicle-hours)** | **Peak Hour Volume on Minor Approach (vph)** | **Peak Hour Entering Volume Serviced (vph)** |
| **NTPP** | **2.4** | **33** | **1,352** |
| **Limiting Value** | **4** | **100** | **650** |
| **Condition Satisfied?** | **Not Met** | **Not Met** | **Met** |
| **Warrant Met** | **NO** | | |

FEHR PEERS

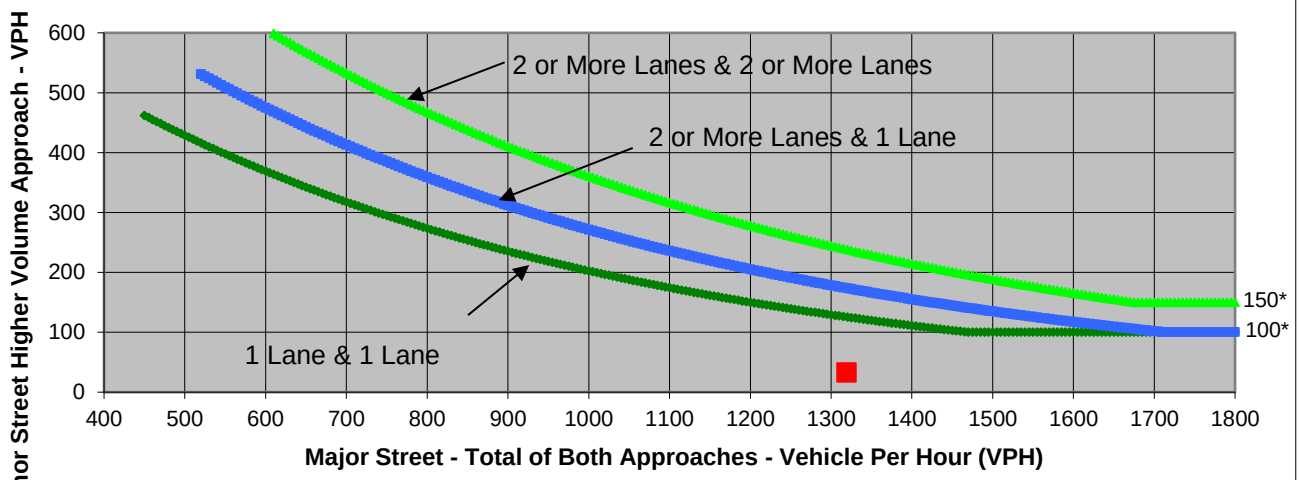
| | | | |
|---|---|---|---|
| Major Street | Balfour Rd | Project | Vineyards at Deer Creek |
| Minor Street | Project Retail Driveway | Scenario | NTPP |
| | | Peak Hour | AM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 0 | 30 | 19 | 0 |
| Through | 0 | 0 | 622 | 639 |
| Right | 0 | 3 | 0 | 39 |
| Total | 0 | 33 | 641 | 678 |

Major Street Direction

| | |
|---|---|
| | North/South |
| X | East/West |




* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

| | Major Street | Minor Street | Warrant Met |
|---|---|---|---|
| | Balfour Rd | Project Retail Driveway | |
| **Number of Approach Lanes** | **2** | **1** | **NO** |
| **Traffic Volume (VPH) *** | **1,319** | **33** | |

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

| | | | |
|---|---|---|---|
| Major Street | Balfour Rd | Project | Vineyards at Deer Creek |
| Minor Street | Mountain View Dr | Scenario | NTPP |
| | | Peak Hour | AM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 23 | 0 | 0 | 13 |
| Through | 0 | 0 | 1,412 | 1,640 |
| Right | 75 | 0 | 35 | 0 |
| Total | 98 | 0 | 1,447 | 1,653 |

Major Street Direction

| | |
|---|---|
| | North/South |
| X | East/West |

Intersection Geometry

| | |
|---|---|
| Number of Approach Lanes for Minor Street | 1 |
| Total Approaches | 3 |

Worst Case Delay for Minor Street

| | |
|---|---|
| Stopped Delay (seconds per vehicle) | 48 |
| Approach with Worst Case Delay | NB |
| Total Vehicles on Approach | 98 |

| Warrant 3A, Peak Hour | | | |
|---|---|---|---|
| | **Peak Hour Delay on Minor Approach (vehicle-hours)** | **Peak Hour Volume on Minor Approach (vph)** | **Peak Hour Entering Volume Serviced (vph)** |
| **NTPP** | **1.3** | **98** | **3,198** |
| **Limiting Value** | **4** | **100** | **650** |
| **Condition Satisfied?** | **Not Met** | **Not Met** | **Met** |
| **Warrant Met** | **NO** | | |

FEHR PEERS

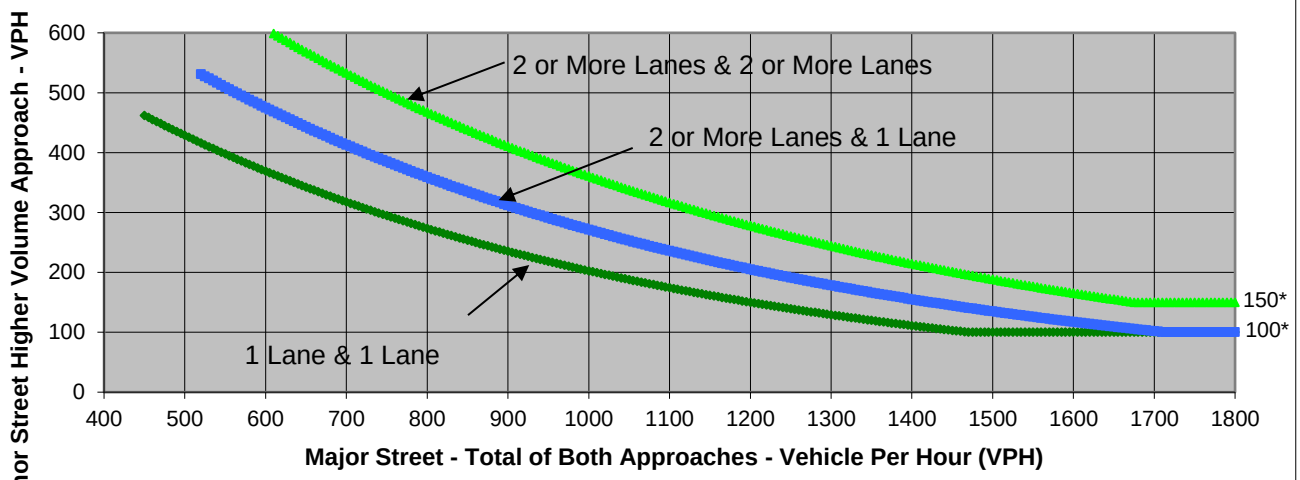
| | | | |
|---|---|---|---|
| Major Street | Balfour Rd | Project | Vineyards at Deer Creek |
| Minor Street | Mountain View Dr | Scenario | NTPP |
| | | Peak Hour | AM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 23 | 0 | 0 | 13 |
| Through | 0 | 0 | 1,412 | 1,640 |
| Right | 75 | 0 | 35 | 0 |
| Total | 98 | 0 | 1,447 | 1,653 |

Major Street Direction

| | |
|---|---|
| | North/South |
| X | East/West |




* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

| | Major Street | Minor Street | Warrant Met |
|---|---|---|---|
| | Balfour Rd | Mountain View Dr | |
| **Number of Approach Lanes** | **2** | **1** | **NO** |
| **Traffic Volume (VPH) *** | **3,100** | **98** | |

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

| | | | |
|---|---|---|---|
| Major Street | Deer Valley Road | Project | Vineyards at Deer Creek |
| Minor Street | Balfour Rd | Scenario | NTPP |
| | | Peak Hour | PM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 0 | 502 | 0 | 51 |
| Through | 39 | 47 | 0 | 0 |
| Right | 85 | 0 | 0 | 433 |
| Total | 124 | 549 | 0 | 484 |

Major Street Direction

| | |
|---|---|
| X | North/South |
| | East/West |

Intersection Geometry

| | |
|---|---|
| Number of Approach Lanes for Minor Street | 1 |
| Total Approaches | 3 |

Worst Case Delay for Minor Street

| | |
|---|---|
| Stopped Delay (seconds per vehicle) | 48.9 |
| Approach with Worst Case Delay | WB |
| Total Vehicles on Approach | 484 |

| Warrant 3A, Peak Hour | | | |
|---|---|---|---|
| | **Peak Hour Delay on Minor Approach (vehicle-hours)** | **Peak Hour Volume on Minor Approach (vph)** | **Peak Hour Entering Volume Serviced (vph)** |
| **NTPP** | **6.6** | **484** | **1,157** |
| **Limiting Value** | **4** | **100** | **650** |
| **Condition Satisfied?** | **Met** | **Met** | **Met** |
| **Warrant Met** | **YES** | | |

FEHR PEERS

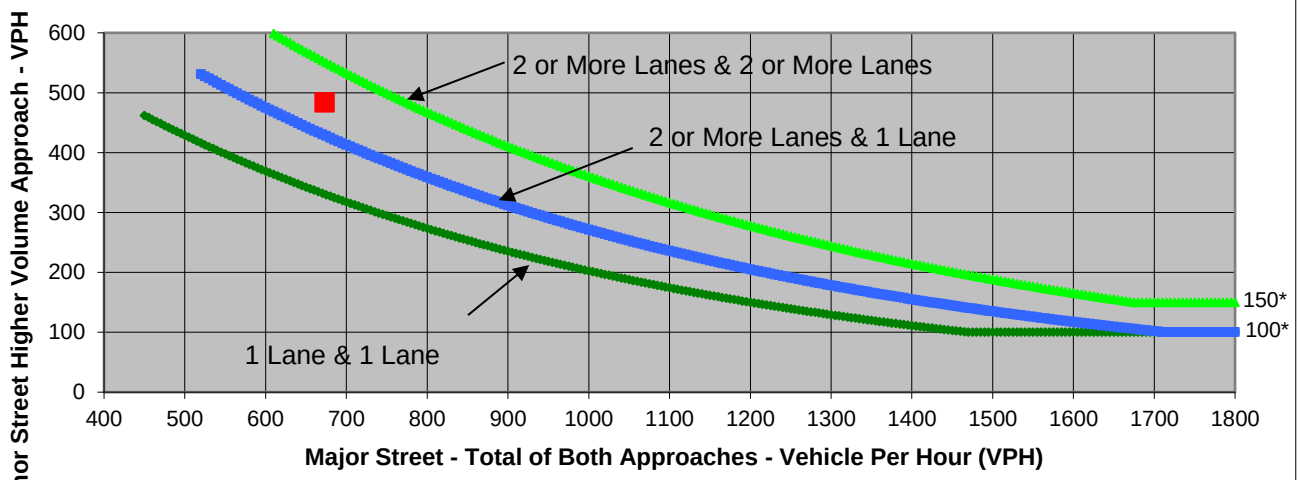
| | | | |
|---|---|---|---|
| Major Street | Deer Valley Road | Project | Vineyards at Deer Creek |
| Minor Street | Balfour Rd | Scenario | NTPP |
| | | Peak Hour | PM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 0 | 502 | 0 | 51 |
| Through | 39 | 47 | 0 | 0 |
| Right | 85 | 0 | 0 | 433 |
| Total | 124 | 549 | 0 | 484 |

Major Street Direction

| | |
|---|---|
| X | North/South |
| | East/West |




* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

| | Major Street | Minor Street | Warrant Met |
|---|---|---|---|
| | Deer Valley Road | Balfour Rd | |
| **Number of Approach Lanes** | **1** | **1** | **YES** |
| **Traffic Volume (VPH) *** | **673** | **484** | |

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

| | | | |
|---|---|---|---|
| Major Street | Balfour Rd | Project | Vineyards at Deer Creek |
| Minor Street | Project Retail Driveway | Scenario | NTPP |
| | | Peak Hour | PM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 0 | 163 | 56 | 0 |
| Through | 0 | 0 | 531 | 466 |
| Right | 0 | 18 | 0 | 110 |
| Total | 0 | 181 | 587 | 576 |

Major Street Direction

| | |
|---|---|
| | North/South |
| X | East/West |

Intersection Geometry

| | |
|---|---|
| Number of Approach Lanes for Minor Street | 1 |
| Total Approaches | 3 |

Worst Case Delay for Minor Street

| | |
|---|---|
| Stopped Delay (seconds per vehicle) | 3813.5 |
| Approach with Worst Case Delay | WB |
| Total Vehicles on Approach | 576 |

| Warrant 3A, Peak Hour | | | |
|---|---|---|---|
| | **Peak Hour Delay on Minor Approach (vehicle-hours)** | **Peak Hour Volume on Minor Approach (vph)** | **Peak Hour Entering Volume Serviced (vph)** |
| **NTPP** | **610.2** | **181** | **1,344** |
| **Limiting Value** | **4** | **100** | **650** |
| **Condition Satisfied?** | **Met** | **Met** | **Met** |
| **Warrant Met** | **YES** | | |

FEHR PEERS

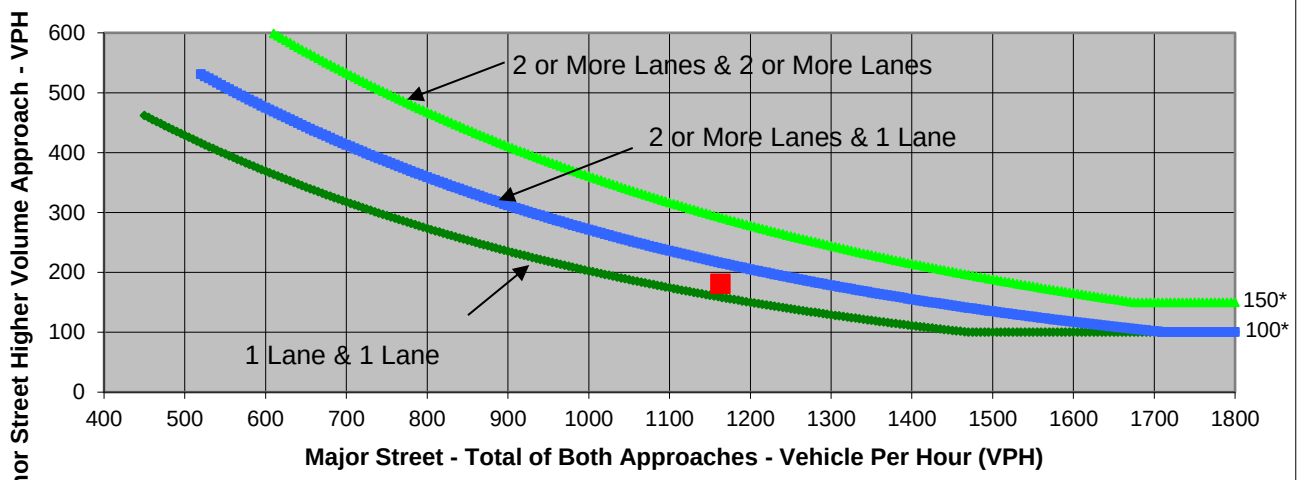
| | | | |
|---|---|---|---|
| Major Street | Balfour Rd | Project | Vineyards at Deer Creek |
| Minor Street | Project Retail Driveway | Scenario | NTPP |
| | | Peak Hour | PM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 0 | 163 | 56 | 0 |
| Through | 0 | 0 | 531 | 466 |
| Right | 0 | 18 | 0 | 110 |
| Total | 0 | 181 | 587 | 576 |

Major Street Direction

| | |
|---|---|
| | North/South |
| X | East/West |




* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

| | Major Street | Minor Street | Warrant Met |
|---|---|---|---|
| | Balfour Rd | Project Retail Driveway | |
| **Number of Approach Lanes** | **2** | **1** | **NO** |
| **Traffic Volume (VPH) *** | **1,163** | **181** | |

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

| | | | |
|---|---|---|---|
| Major Street | Balfour Rd | Project | Vineyards at Deer Creek |
| Minor Street | Mountain View Dr | Scenario | NTPP |
| | | Peak Hour | PM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 22 | 0 | 0 | 64 |
| Through | 0 | 0 | 1,521 | 1,371 |
| Right | 43 | 0 | 87 | 0 |
| Total | 65 | 0 | 1,608 | 1,435 |

Major Street Direction

| | |
|---|---|
| | North/South |
| X | East/West |

Intersection Geometry

| | |
|---|---|
| Number of Approach Lanes for Minor Street | 1 |
| Total Approaches | 3 |

Worst Case Delay for Minor Street

| | |
|---|---|
| Stopped Delay (seconds per vehicle) | 0 |
| Approach with Worst Case Delay | NB |
| Total Vehicles on Approach | 65 |

| Warrant 3A, Peak Hour | | | |
|---|---|---|---|
| | **Peak Hour Delay on Minor Approach (vehicle-hours)** | **Peak Hour Volume on Minor Approach (vph)** | **Peak Hour Entering Volume Serviced (vph)** |
| **NTPP** | **0** | **65** | **3,108** |
| **Limiting Value** | **4** | **100** | **650** |
| **Condition Satisfied?** | **Not Met** | **Not Met** | **Met** |
| **Warrant Met** | **NO** | | |

FEHR PEERS

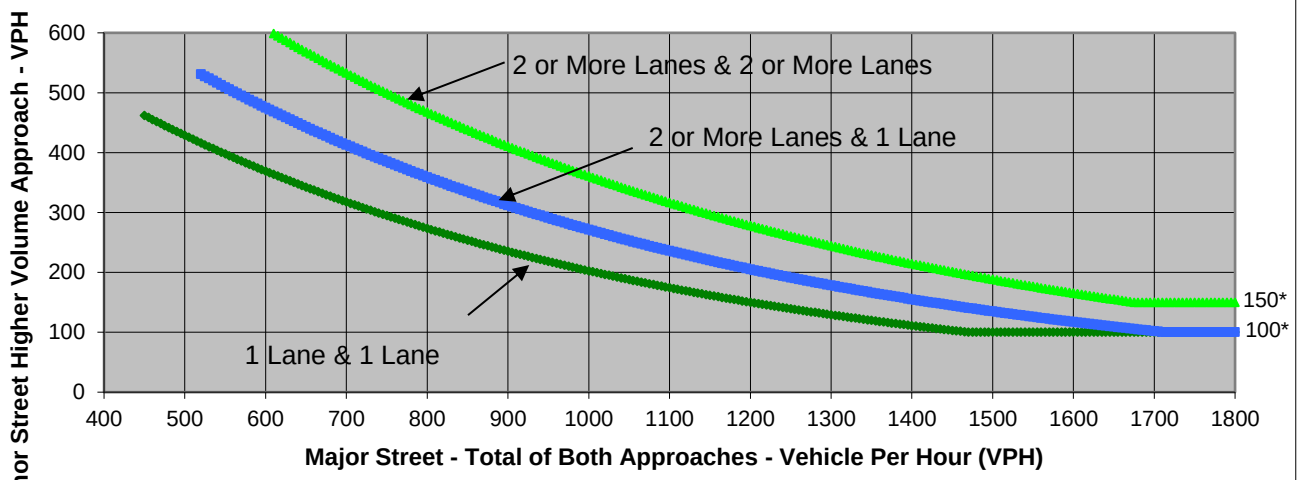
| | | | |
|---|---|---|---|
| Major Street | Balfour Rd | Project | Vineyards at Deer Creek |
| Minor Street | Mountain View Dr | Scenario | NTPP |
| | | Peak Hour | PM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 22 | 0 | 0 | 64 |
| Through | 0 | 0 | 1,521 | 1,371 |
| Right | 43 | 0 | 87 | 0 |
| Total | 65 | 0 | 1,608 | 1,435 |

Major Street Direction

| | |
|---|---|
| | North/South |
| X | East/West |




* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

| | Major Street | Minor Street | Warrant Met |
|---|---|---|---|
| | Balfour Rd | Mountain View Dr | |
| **Number of Approach Lanes** | **2** | **1** | **NO** |
| **Traffic Volume (VPH) *** | **3,043** | **65** | |

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

| | | | |
|---|---|---|---|
| Major Street | Deer Valley Road | Project | Vineyards at Deer Creek |
| Minor Street | Balfour Rd | Scenario | CU |
| | | Peak Hour | AM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 0 | 500 | 0 | 100 |
| Through | 50 | 40 | 0 | 0 |
| Right | 110 | 0 | 0 | 520 |
| Total | 160 | 540 | 0 | 620 |

Major Street Direction

| | |
|---|---|
| X | North/South |
| | East/West |

Intersection Geometry

| | |
|---|---|
| Number of Approach Lanes for Minor Street | 1 |
| Total Approaches | 3 |

Worst Case Delay for Minor Street

| | |
|---|---|
| Stopped Delay (seconds per vehicle) | 237 |
| Approach with Worst Case Delay | WB |
| Total Vehicles on Approach | 620 |

| Warrant 3A, Peak Hour | | | |
|---|---|---|---|
| | **Peak Hour Delay on Minor Approach (vehicle-hours)** | **Peak Hour Volume on Minor Approach (vph)** | **Peak Hour Entering Volume Serviced (vph)** |
| **CU** | **40.8** | **620** | **1,320** |
| **Limiting Value** | **4** | **100** | **650** |
| **Condition Satisfied?** | **Met** | **Met** | **Met** |
| **Warrant Met** | **YES** | | |

FEHR PEERS

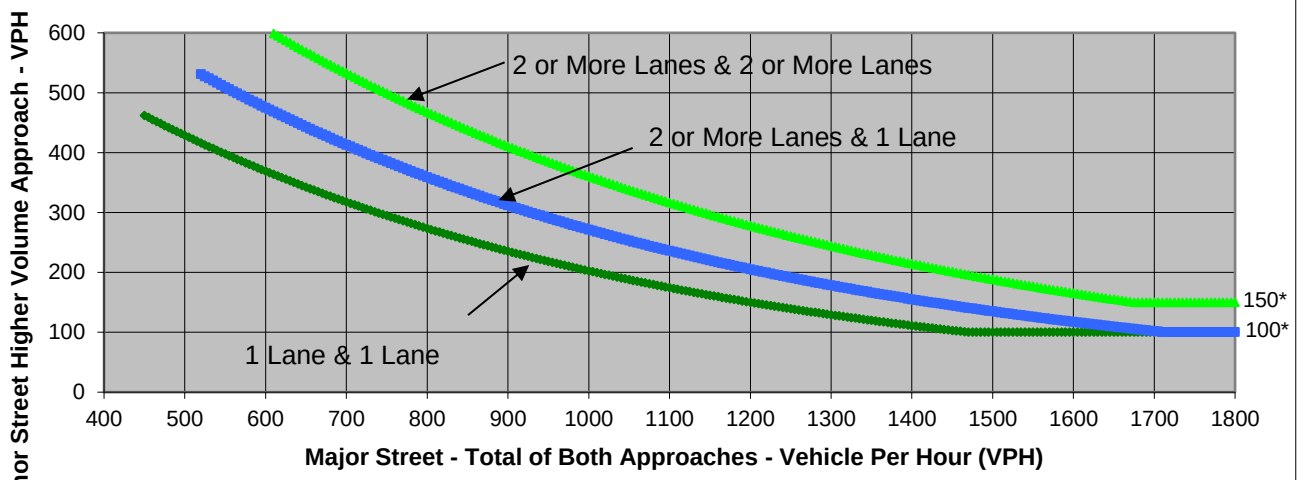
| | | | |
|---|---|---|---|
| Major Street | Deer Valley Road | Project | Vineyards at Deer Creek |
| Minor Street | Balfour Rd | Scenario | CU |
| | | Peak Hour | AM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 0 | 500 | 0 | 100 |
| Through | 50 | 40 | 0 | 0 |
| Right | 110 | 0 | 0 | 520 |
| Total | 160 | 540 | 0 | 620 |

Major Street Direction

| | |
|---|---|
| X | North/South |
| | East/West |




* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

| | Major Street | Minor Street | Warrant Met |
|---|---|---|---|
| | Deer Valley Road | Balfour Rd | |
| **Number of Approach Lanes** | **1** | **1** | **YES** |
| **Traffic Volume (VPH) *** | **700** | **620** | |

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

| | | | |
|---|---|---|---|
| Major Street | Balfour Rd | Project | Vineyards at Deer Creek |
| Minor Street | Mountain View Dr | Scenario | CU |
| | | Peak Hour | AM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 30 | 0 | 0 | 10 |
| Through | 0 | 0 | 1,280 | 1,600 |
| Right | 80 | 0 | 50 | 0 |
| Total | 110 | 0 | 1,330 | 1,610 |

Major Street Direction

| | |
|---|---|
| | North/South |
| X | East/West |

Intersection Geometry

| | |
|---|---|
| Number of Approach Lanes for Minor Street | 1 |
| Total Approaches | 3 |

Worst Case Delay for Minor Street

| | |
|---|---|
| Stopped Delay (seconds per vehicle) | 133.6 |
| Approach with Worst Case Delay | NB |
| Total Vehicles on Approach | 110 |

| Warrant 3A, Peak Hour | | | |
|---|---|---|---|
| | **Peak Hour Delay on Minor Approach (vehicle-hours)** | **Peak Hour Volume on Minor Approach (vph)** | **Peak Hour Entering Volume Serviced (vph)** |
| **CU** | **4.1** | **110** | **3,050** |
| **Limiting Value** | **4** | **100** | **650** |
| **Condition Satisfied?** | **Met** | **Met** | **Met** |
| **Warrant Met** | **YES** | | |

FEHR PEERS

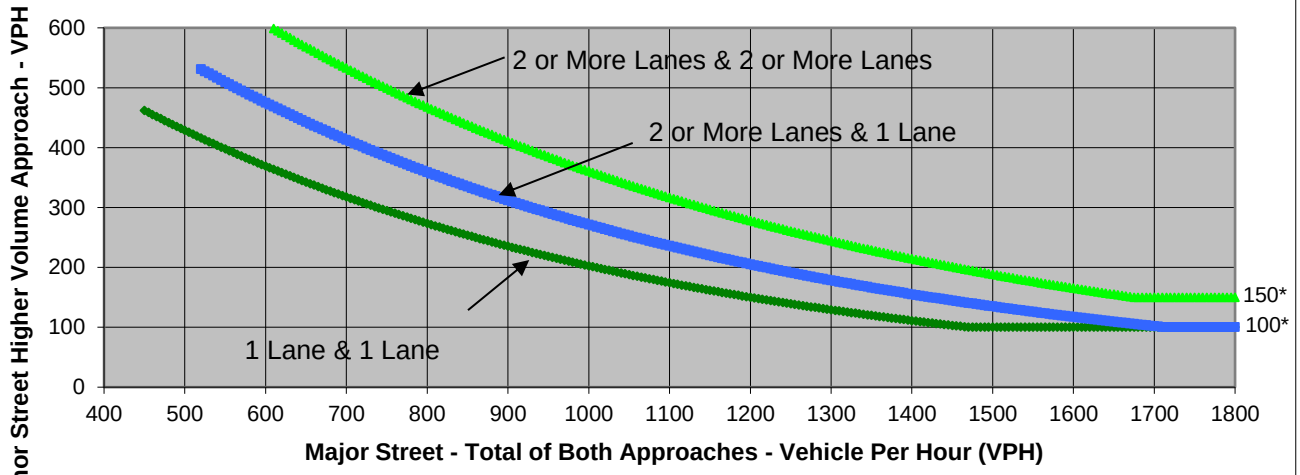
| | | | |
|---|---|---|---|
| Major Street | Balfour Rd | Project | Vineyards at Deer Creek |
| Minor Street | Mountain View Dr | Scenario | CU |
| | | Peak Hour | AM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 30 | 0 | 0 | 10 |
| Through | 0 | 0 | 1,280 | 1,600 |
| Right | 80 | 0 | 50 | 0 |
| Total | 110 | 0 | 1,330 | 1,610 |

Major Street Direction

| | |
|---|---|
| | North/South |
| X | East/West |




* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

| | Major Street | Minor Street | Warrant Met |
|---|---|---|---|
| | Balfour Rd | Mountain View Dr | |
| **Number of Approach Lanes** | **2** | **1** | **YES** |
| **Traffic Volume (VPH) *** | **2,940** | **110** | |

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

| | | | |
|---|---|---|---|
| Major Street | Deer Valley Road | Project | Vineyards at Deer Creek |
| Minor Street | Balfour Rd | Scenario | CU |
| | | Peak Hour | PM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 0 | 400 | 0 | 60 |
| Through | 110 | 60 | 0 | 0 |
| Right | 100 | 0 | 0 | 660 |
| Total | 210 | 460 | 0 | 720 |

Major Street Direction

| | |
|---|---|
| X | North/South |
| | East/West |

Intersection Geometry

| | |
|---|---|
| Number of Approach Lanes for Minor Street | 1 |
| Total Approaches | 3 |

Worst Case Delay for Minor Street

| | |
|---|---|
| Stopped Delay (seconds per vehicle) | 659.5 |
| Approach with Worst Case Delay | WB |
| Total Vehicles on Approach | 720 |

| Warrant 3A, Peak Hour | | | |
|---|---|---|---|
| | **Peak Hour Delay on Minor Approach (vehicle-hours)** | **Peak Hour Volume on Minor Approach (vph)** | **Peak Hour Entering Volume Serviced (vph)** |
| **CU** | **131.9** | **720** | **1,390** |
| **Limiting Value** | **4** | **100** | **650** |
| **Condition Satisfied?** | **Met** | **Met** | **Met** |
| **Warrant Met** | **YES** | | |

FEHR PEERS

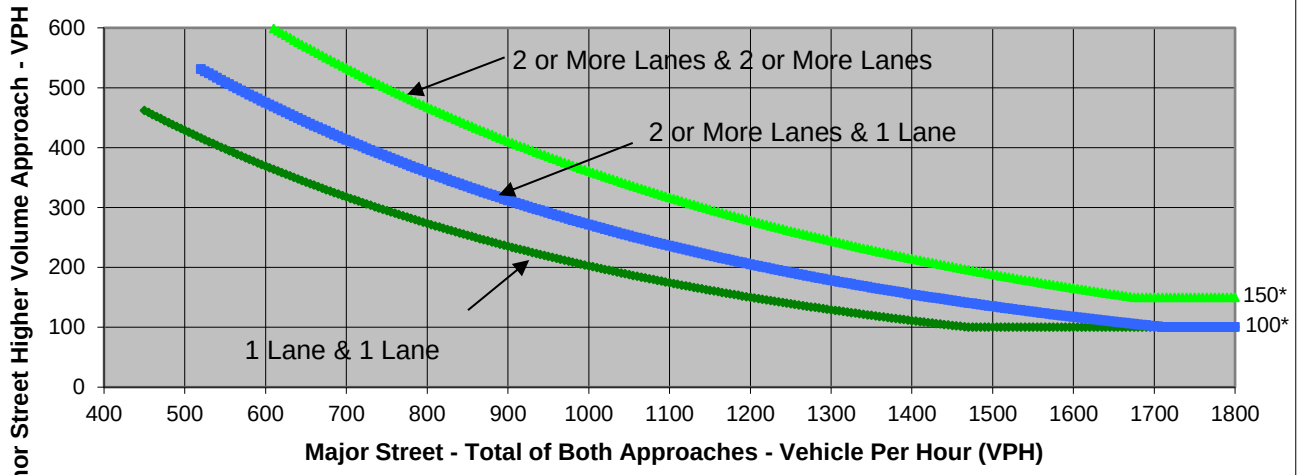
| | | | |
|---|---|---|---|
| Major Street | Deer Valley Road | Project | Vineyards at Deer Creek |
| Minor Street | Balfour Rd | Scenario | CU |
| | | Peak Hour | PM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 0 | 400 | 0 | 60 |
| Through | 110 | 60 | 0 | 0 |
| Right | 100 | 0 | 0 | 660 |
| Total | 210 | 460 | 0 | 720 |

Major Street Direction

| | |
|---|---|
| X | North/South |
| | East/West |




* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

| | Major Street | Minor Street | Warrant Met |
|---|---|---|---|
| | Deer Valley Road | Balfour Rd | |
| **Number of Approach Lanes** | **1** | **1** | **YES** |
| **Traffic Volume (VPH) *** | **670** | **720** | |

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

| | | | |
|---|---|---|---|
| Major Street | Balfour Rd | Project | Vineyards at Deer Creek |
| Minor Street | Mountain View Dr | Scenario | CU |
| | | Peak Hour | PM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 30 | 0 | 0 | 70 |
| Through | 0 | 0 | 1,110 | 930 |
| Right | 60 | 0 | 90 | 0 |
| Total | 90 | 0 | 1,200 | 1,000 |

Major Street Direction

| | |
|---|---|
| | North/South |
| X | East/West |

Intersection Geometry

| | |
|---|---|
| Number of Approach Lanes for Minor Street | 1 |
| Total Approaches | 3 |

Worst Case Delay for Minor Street

| | |
|---|---|
| Stopped Delay (seconds per vehicle) | 0 |
| Approach with Worst Case Delay | NB |
| Total Vehicles on Approach | 90 |

| Warrant 3A, Peak Hour | | | |
|---|---|---|---|
| | **Peak Hour Delay on Minor Approach (vehicle-hours)** | **Peak Hour Volume on Minor Approach (vph)** | **Peak Hour Entering Volume Serviced (vph)** |
| **CU** | **0** | **90** | **2,290** |
| **Limiting Value** | **4** | **100** | **650** |
| **Condition Satisfied?** | **Not Met** | **Not Met** | **Met** |
| **Warrant Met** | **NO** | | |

FEHR PEERS

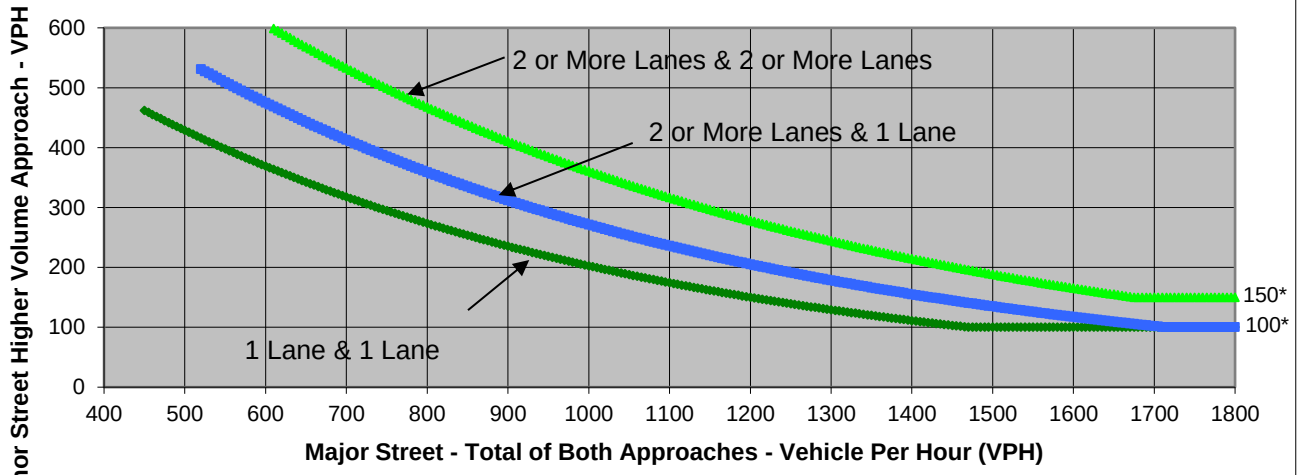
| | | | |
|---|---|---|---|
| Major Street | Balfour Rd | Project | Vineyards at Deer Creek |
| Minor Street | Mountain View Dr | Scenario | CU |
| | | Peak Hour | PM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 30 | 0 | 0 | 70 |
| Through | 0 | 0 | 1,110 | 930 |
| Right | 60 | 0 | 90 | 0 |
| Total | 90 | 0 | 1,200 | 1,000 |

Major Street Direction

| | |
|---|---|
| | North/South |
| X | East/West |




* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

| | Major Street | Minor Street | Warrant Met |
|---|---|---|---|
| | Balfour Rd | Mountain View Dr | |
| **Number of Approach Lanes** | **2** | **1** | **NO** |
| **Traffic Volume (VPH) *** | **2,200** | **90** | |

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

| | | | |
|---|---|---|---|
| Project | Vineyards at Deer Creek | | |
| Major Street | Deer Valley Road | Scenario | CUPP |
| Minor Street | Balfour Rd | Peak Hour | AM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 0 | 524 | 0 | 105 |
| Through | 50 | 40 | 0 | 0 |
| Right | 112 | 0 | 0 | 530 |
| Total | 162 | 564 | 0 | 635 |

Major Street Direction

| | |
|---|---|
| X | North/South |
| | East/West |

Intersection Geometry

| | |
|---|---|
| Number of Approach Lanes for Minor Street | 1 |
| Total Approaches | 3 |

Worst Case Delay for Minor Street

| | |
|---|---|
| Stopped Delay (seconds per vehicle) | 0 |
| Approach with Worst Case Delay | WB |
| Total Vehicles on Approach | 635 |

| Warrant 3A, Peak Hour | | | |
|---|---|---|---|
| | **Peak Hour Delay on Minor Approach (vehicle-hours)** | **Peak Hour Volume on Minor Approach (vph)** | **Peak Hour Entering Volume Serviced (vph)** |
| **CUPP** | **0** | **635** | **1,361** |
| **Limiting Value** | **4** | **100** | **650** |
| **Condition Satisfied?** | **Not Met** | **Met** | **Met** |
| **Warrant Met** | **NO** | | |

FEHR PEERS

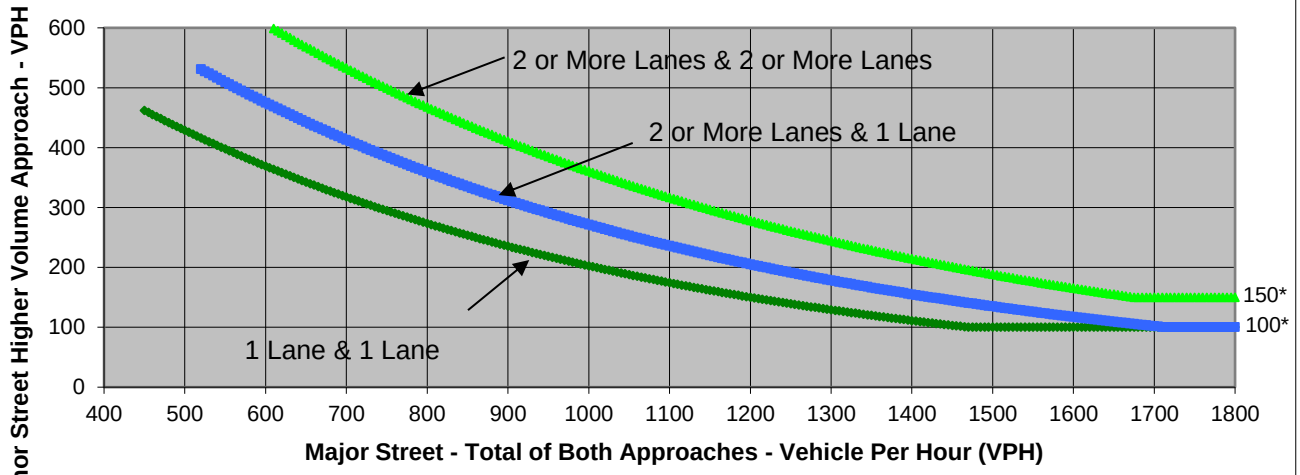
| | | | |
|---|---|---|---|
| Major Street | Deer Valley Road | Project | Vineyards at Deer Creek |
| Minor Street | Balfour Rd | Scenario | CUPP |
| | | Peak Hour | AM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 0 | 524 | 0 | 105 |
| Through | 50 | 40 | 0 | 0 |
| Right | 112 | 0 | 0 | 530 |
| Total | 162 | 564 | 0 | 635 |

Major Street Direction

| | |
|---|---|
| X | North/South |
| | East/West |




* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

| | Major Street | Minor Street | Warrant Met |
|---|---|---|---|
| | Deer Valley Road | Balfour Rd | |
| **Number of Approach Lanes** | **1** | **1** | **YES** |
| **Traffic Volume (VPH) *** | **726** | **635** | |

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

| | | | |
|---|---|---|---|
| Major Street | Balfour Rd | Project | Vineyards at Deer Creek |
| Minor Street | Project Retail Driveway | Scenario | CUPP |
| | | Peak Hour | AM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 0 | 0 | 0 | 0 |
| Through | 0 | 0 | 636 | 635 |
| Right | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 636 | 635 |

Major Street Direction

| | |
|---|---|
| | North/South |
| X | East/West |

Intersection Geometry

| | |
|---|---|
| Number of Approach Lanes for Minor Street | 1 |
| Total Approaches | 2 |

Worst Case Delay for Minor Street

| | |
|---|---|
| Stopped Delay (seconds per vehicle) | 513 |
| Approach with Worst Case Delay | SB |
| Total Vehicles on Approach | 0 |

| Warrant 3A, Peak Hour | | | |
|---|---|---|---|
| | **Peak Hour Delay on Minor Approach (vehicle-hours)** | **Peak Hour Volume on Minor Approach (vph)** | **Peak Hour Entering Volume Serviced (vph)** |
| **CUPP** | **0** | **0** | **1,271** |
| **Limiting Value** | **4** | **100** | **Error-Check Input** |
| **Condition Satisfied?** | **Not Met** | **Not Met** | **Not Met** |
| **Warrant Met** | **NO** | | |

FEHR PEERS

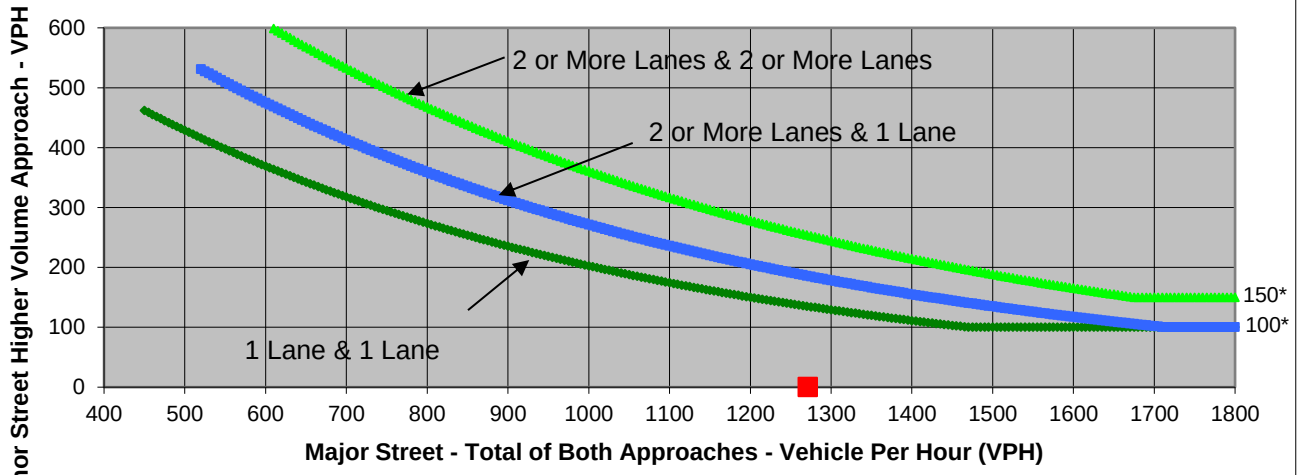
| | | | |
|---|---|---|---|
| Major Street | Balfour Rd | Project | Vineyards at Deer Creek |
| Minor Street | Project Retail Driveway | Scenario | CUPP |
| | | Peak Hour | AM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 0 | 0 | 0 | 0 |
| Through | 0 | 0 | 636 | 635 |
| Right | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 636 | 635 |

Major Street Direction

| | |
|---|---|
| | North/South |
| X | East/West |




* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

| | Major Street | Minor Street | Warrant Met |
|---|---|---|---|
| | Balfour Rd | Project Retail Driveway | |
| **Number of Approach Lanes** | **2** | **1** | **NO** |
| **Traffic Volume (VPH) *** | **1,271** | **0** | |

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

| | | | |
|---|---|---|---|
| Major Street | Balfour Rd | Project | Vineyards at Deer Creek |
| Minor Street | Mountain View Dr | Scenario | CUPP |
| | | Peak Hour | AM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 30 | 0 | 0 | 10 |
| Through | 0 | 0 | 1,478 | 1,704 |
| Right | 80 | 0 | 50 | 0 |
| Total | 110 | 0 | 1,528 | 1,714 |

Major Street Direction

| | |
|---|---|
| | North/South |
| X | East/West |

Intersection Geometry

| | |
|---|---|
| Number of Approach Lanes for Minor Street | 1 |
| Total Approaches | 3 |

Worst Case Delay for Minor Street

| | |
|---|---|
| Stopped Delay (seconds per vehicle) | 370.8 |
| Approach with Worst Case Delay | NB |
| Total Vehicles on Approach | 110 |

| Warrant 3A, Peak Hour | | | |
|---|---|---|---|
| | **Peak Hour Delay on Minor Approach (vehicle-hours)** | **Peak Hour Volume on Minor Approach (vph)** | **Peak Hour Entering Volume Serviced (vph)** |
| **CUPP** | **11.3** | **110** | **3,352** |
| **Limiting Value** | **4** | **100** | **650** |
| **Condition Satisfied?** | **Met** | **Met** | **Met** |
| **Warrant Met** | **YES** | | |

FEHR PEERS

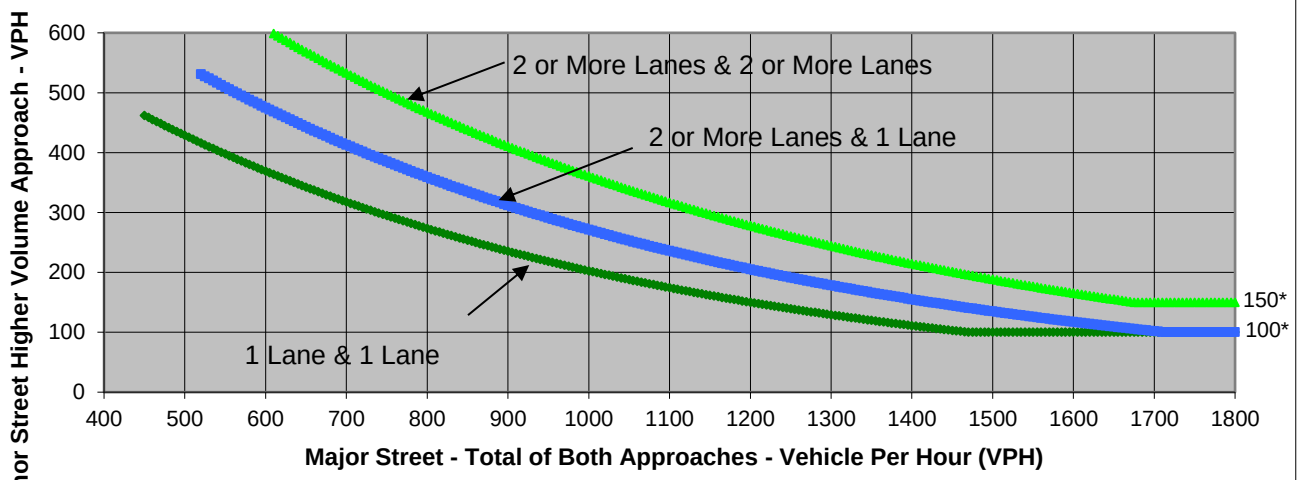
| | | | |
|---|---|---|---|
| Major Street | Balfour Rd | Project | Vineyards at Deer Creek |
| Minor Street | Mountain View Dr | Scenario | CUPP |
| | | Peak Hour | AM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 30 | 0 | 0 | 10 |
| Through | 0 | 0 | 1,478 | 1,704 |
| Right | 80 | 0 | 50 | 0 |
| Total | 110 | 0 | 1,528 | 1,714 |

Major Street Direction

| | |
|---|---|
| | North/South |
| X | East/West |




* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

| | Major Street | Minor Street | Warrant Met |
|---|---|---|---|
| | Balfour Rd | Mountain View Dr | |
| **Number of Approach Lanes** | **2** | **1** | **YES** |
| **Traffic Volume (VPH) *** | **3,242** | **110** | |

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

| | | | |
|---|---|---|---|
| Major Street | Deer Valley Road | Project | Vineyards at Deer Creek |
| Minor Street | Balfour Rd | Scenario | CUPP |
| | | Peak Hour | PM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 0 | 560 | 0 | 66 |
| Through | 110 | 60 | 0 | 0 |
| Right | 108 | 0 | 0 | 684 |
| Total | 218 | 620 | 0 | 750 |

Major Street Direction

| | |
|---|---|
| X | North/South |
| | East/West |

Intersection Geometry

| | |
|---|---|
| Number of Approach Lanes for Minor Street | 1 |
| Total Approaches | 3 |

Worst Case Delay for Minor Street

| | |
|---|---|
| Stopped Delay (seconds per vehicle) | 181.9 |
| Approach with Worst Case Delay | WB |
| Total Vehicles on Approach | 750 |

| Warrant 3A, Peak Hour | | | |
|---|---|---|---|
| | **Peak Hour Delay on Minor Approach (vehicle-hours)** | **Peak Hour Volume on Minor Approach (vph)** | **Peak Hour Entering Volume Serviced (vph)** |
| **CUPP** | **37.9** | **750** | **1,588** |
| **Limiting Value** | **4** | **100** | **650** |
| **Condition Satisfied?** | **Met** | **Met** | **Met** |
| **Warrant Met** | **YES** | | |

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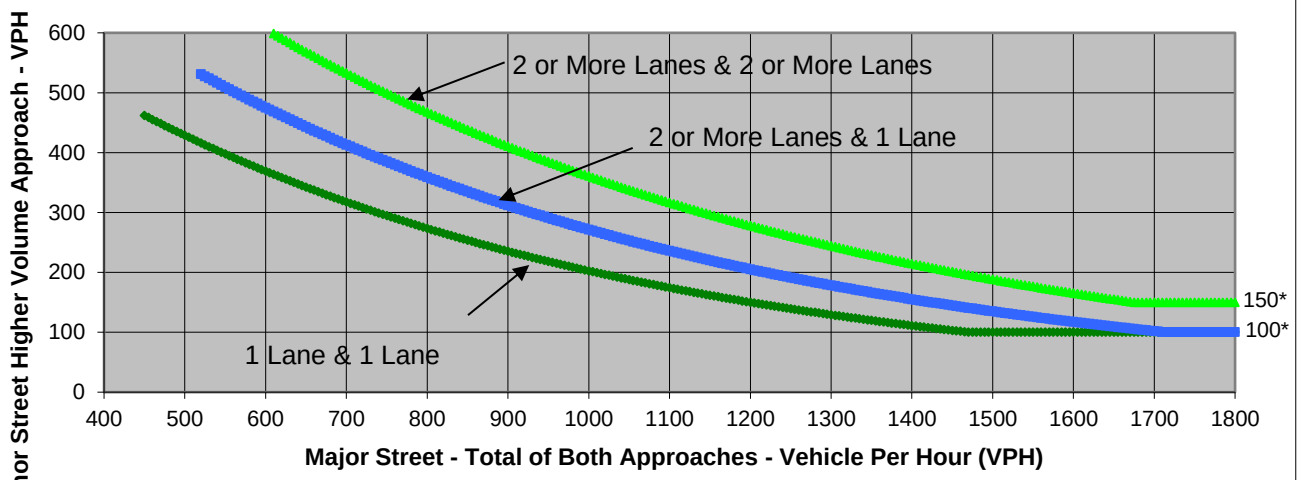
| | | | |
|---|---|---|---|
| Major Street | Deer Valley Road | Project | Vineyards at Deer Creek |
| Minor Street | Balfour Rd | Scenario | CUPP |
| | | Peak Hour | PM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 0 | 560 | 0 | 66 |
| Through | 110 | 60 | 0 | 0 |
| Right | 108 | 0 | 0 | 684 |
| Total | 218 | 620 | 0 | 750 |

Major Street Direction

| | |
|---|---|
| X | North/South |
| | East/West |




* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

| | Major Street | Minor Street | Warrant Met |
|---|---|---|---|
| | Deer Valley Road | Balfour Rd | |
| **Number of Approach Lanes** | **1** | **1** | **YES** |
| **Traffic Volume (VPH) *** | **838** | **750** | |

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

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| | | | |
|---|---|---|---|
| Major Street | Balfour Rd | Project | Vineyards at Deer Creek |
| Minor Street | Project Retail Driveway | Scenario | CUPP |
| | | Peak Hour | PM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 0 | 163 | 90 | 0 |
| Through | 0 | 0 | 578 | 732 |
| Right | 0 | 18 | 0 | 76 |
| Total | 0 | 181 | 668 | 808 |

Major Street Direction

| | |
|---|---|
| | North/South |
| X | East/West |

Intersection Geometry

| | |
|---|---|
| Number of Approach Lanes for Minor Street | 1 |
| Total Approaches | 3 |

Worst Case Delay for Minor Street

| | |
|---|---|
| Stopped Delay (seconds per vehicle) | 3991 |
| Approach with Worst Case Delay | WB |
| Total Vehicles on Approach | 808 |

| Warrant 3A, Peak Hour | | | |
|---|---|---|---|
| | **Peak Hour Delay on Minor Approach (vehicle-hours)** | **Peak Hour Volume on Minor Approach (vph)** | **Peak Hour Entering Volume Serviced (vph)** |
| **CUPP** | **895.8** | **181** | **1,657** |
| **Limiting Value** | **4** | **100** | **650** |
| **Condition Satisfied?** | **Met** | **Met** | **Met** |
| **Warrant Met** | **YES** | | |

FEHR PEERS

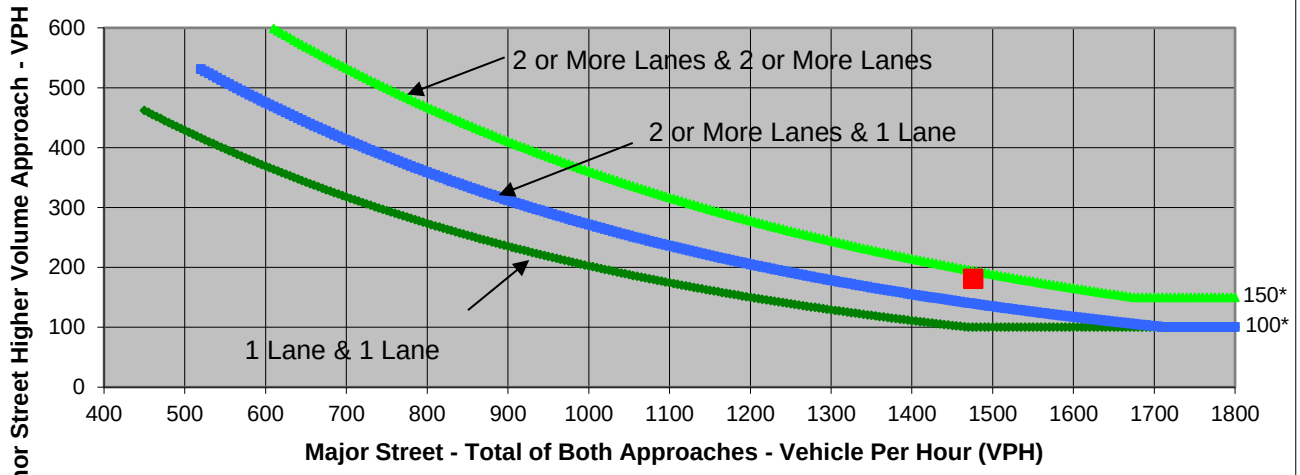
| | | | |
|---|---|---|---|
| Major Street | Balfour Rd | Project | Vineyards at Deer Creek |
| Minor Street | Project Retail Driveway | Scenario | CUPP |
| | | Peak Hour | PM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 0 | 163 | 90 | 0 |
| Through | 0 | 0 | 578 | 732 |
| Right | 0 | 18 | 0 | 76 |
| Total | 0 | 181 | 668 | 808 |

Major Street Direction

| | |
|---|---|
| | North/South |
| X | East/West |




* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

| | Major Street | Minor Street | Warrant Met |
|---|---|---|---|
| | Balfour Rd | Project Retail Driveway | |
| **Number of Approach Lanes** | **2** | **1** | **YES** |
| **Traffic Volume (VPH) *** | **1,476** | **181** | |

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

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| | | | |
|---|---|---|---|
| Major Street | Balfour Rd | Project | Vineyards at Deer Creek |
| Minor Street | Mountain View Dr | Scenario | CUPP |
| | | Peak Hour | PM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 30 | 0 | 0 | 70 |
| Through | 0 | 0 | 1,441 | 1,406 |
| Right | 60 | 0 | 90 | 0 |
| Total | 90 | 0 | 1,531 | 1,476 |

Major Street Direction

| | |
|---|---|
| | North/South |
| X | East/West |

Intersection Geometry

| | |
|---|---|
| Number of Approach Lanes for Minor Street | 1 |
| Total Approaches | 3 |

Worst Case Delay for Minor Street

| | |
|---|---|
| Stopped Delay (seconds per vehicle) | 34.9 |
| Approach with Worst Case Delay | NB |
| Total Vehicles on Approach | 90 |

| Warrant 3A, Peak Hour | | | |
|---|---|---|---|
| | **Peak Hour Delay on Minor Approach (vehicle-hours)** | **Peak Hour Volume on Minor Approach (vph)** | **Peak Hour Entering Volume Serviced (vph)** |
| **CUPP** | **0.9** | **90** | **3,097** |
| **Limiting Value** | **4** | **100** | **650** |
| **Condition Satisfied?** | **Not Met** | **Not Met** | **Met** |
| **Warrant Met** | **NO** | | |

FEHR PEERS

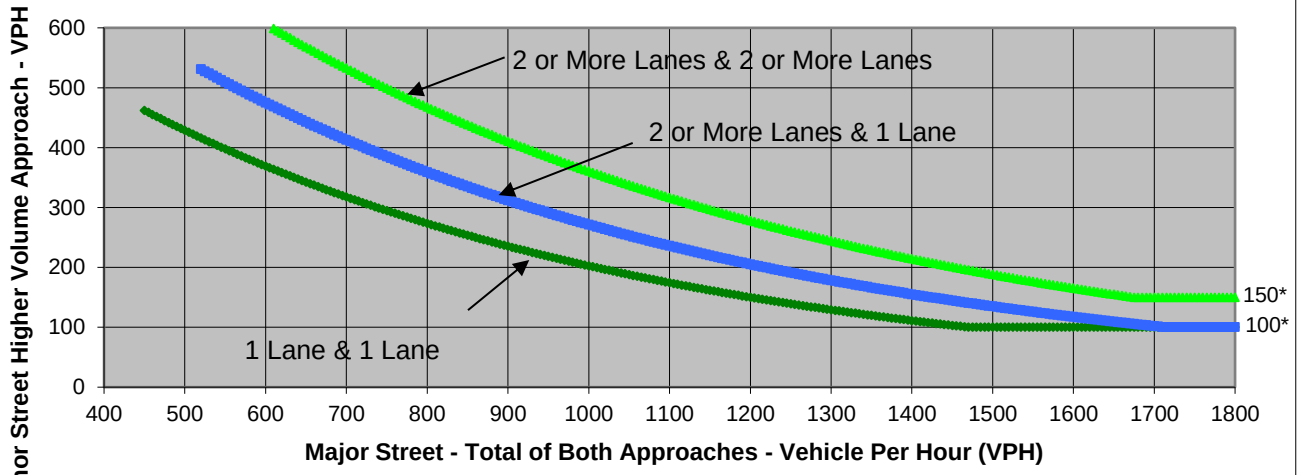
| | | | |
|---|---|---|---|
| Major Street | Balfour Rd | Project | Vineyards at Deer Creek |
| Minor Street | Mountain View Dr | Scenario | CUPP |
| | | Peak Hour | PM |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 30 | 0 | 0 | 70 |
| Through | 0 | 0 | 1,441 | 1,406 |
| Right | 60 | 0 | 90 | 0 |
| Total | 90 | 0 | 1,531 | 1,476 |

Major Street Direction

| | |
|---|---|
| | North/South |
| X | East/West |




* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

| | Major Street | Minor Street | Warrant Met |
|---|---|---|---|
| | Balfour Rd | Mountain View Dr | |
| **Number of Approach Lanes** | **2** | **1** | **NO** |
| **Traffic Volume (VPH) *** | **3,007** | **90** | |

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

# APPENDIX D: ACTIVE ADULT TRIP GENERATION STUDY

FEHR PEERS

# FINAL MEMORANDUM

Date: September 7, 2018

To: Lisa Borba, Blackhawk Development

From: Kathrin Tellez and Delia Votsch

**Subject: Active Adult Trip Generation Assessment**

*WC16-3328*

Fehr & Peers conducted a trip generation study of active adult neighborhoods in Brentwood, California to serve as update to the *Active Adult Residential Developments Trip Generation Study,* August 2004 (2004 Study) as well as to establish local trip generation rates that could be used to estimate the level of daily and peak hour trip generation for a similar development in Eastern Contra Costa County.

For this study, Fehr & Peers collected 72-hours of intersection turning movement counts at the entrances to three active adult neighborhoods in Brentwood, California. This data was then compared to prior data collection efforts at these same neighborhoods as documented in the 2004 Study, as well as trip generation rates from the *ITE Trip Generation Manual*, 10th Edition. The following presents the overall conclusions, followed by the data collection effort and analysis results.

## CONCLUSIONS

This updated study concludes the following:

- Daily trip generation rates for active adult communities in Brentwood is approximately 3.64 vehicle trips per unit in 2016, a 30 percent decrease from data collected in 2003. The current observed daily rate in Brentwood is also lower than other active adult communities, as documented in the 10th Edition of Trip Generation (conventional single-family homes generate approximately 9.4 daily trips per dwelling unit).
- Morning peak hour trip generation is approximately 0.16 trips per dwelling unit, a 25 percent decrease from data collected in 2003. The current observed daily rate in Brentwood

is also lower than other active adult communities, as documented in the 10th Edition of Trip Generation (conventional single-family homes generate approximately 0.74 morning peak hour trips per dwelling unit).

- Evening peak hour trip generation is approximately 0.28 trips per dwelling unit, slightly lower than data collected in 2003. The current observed daily rate in Brentwood is similar to other active adult communities, as documented in the 10th Edition of Trip Generation (conventional single-family homes generate approximately 0.99 evening peak hour trips per dwelling unit).
- The age of a community has some influence upon its trip generation as residents age in place, with trip generation rates per unit tending to decrease over time before stabilizing.

## DATA COLLECTION

Fehr & Peers retained a traffic data collection firm to document the number of vehicles entering and exiting the Summerset I, III and IV neighborhoods over a three-day period in November 2016 at the following locations, also shown on **Figure 1:**

1. Central Boulevard / Apple Hill Drive
2. Central Boulevard / Pippin Drive
3. Fairview Avenue / Baldwin Drive
4. Fairview Avenue / Regent Drive / Wolfe Road
5. Bacchini Lane / Concord Avenue

These locations are the only vehicle access points to the neighborhoods, and only access to these neighborhoods and associated on-site recreational amenities is provided from the intersections. There are no other services provided within the communities that would generate external traffic, or reduce a residents need for external travel.

The data was compiled on a daily and peak hour basis. On average, the 1,711 homes in the three neighborhoods combined generate approximately 6,220 daily trips, with 290 morning peak hour trips (highest hour between 7:00 to 9:00 AM) and 490 evening peak hour trips (highest hour between 4:00 to 6:00 PM). During the mid-day, the neighborhoods generate the most trips during any one hour with approximately 660 trips generated from 12:15 to 1:15 PM. A summary of the daily, morning, and evening peak hour trip generation by neighborhood is provided in **Table 1**.

**TABLE 1**
**TRIP GENERATION BY NEIGHBORHOOD**

| Data Source | Total Trips/Neighborhood Trip Rate | | | | | | |
|---|---|---|---|---|---|---|---|
| | Daily | Morning Peak Hour | | | Evening Peak Hour | | |
| | | Inbound | Outbound | Total | Inbound | Outbound | Total |
| Summerset I (671 Homes) Total Trips | 1,980 | 42 | 56 | 98 | 85 | 59 | 144 |
| Summerset I (671 Homes) Trip Rate | 2.95 | 0.06 | 0.08 | 0.14 | 0.13 | 0.09 | 0.22 |
| Summerset III (364 Homes) Total Trips | 1,800 | 26 | 43 | 69 | 76 | 59 | 135 |
| Summerset III (364 Homes) Trip Rate | 4.95 | 0.07 | 0.12 | 0.19 | 0.21 | 0.16 | 0.37 |
| Summerset IV (676 Homes) Total Trips | 2,440 | 43 | 74 | 117 | 121 | 87 | 208 |
| Summerset IV (676 Homes) Trip Rate | 3.61 | 0.06 | 0.11 | 0.17 | 0.18 | 0.13 | 0.29 |
| Overall Trips | 6,220 | 111 | 173 | 284 | 282 | 205 | 487 |
| **Overall Average Trip Rate** | **3.64** | **0.06** | **0.10** | **0.16** | **0.16** | **0.12** | **0.28** |

Source: Fehr & Peers, 2018

To develop daily, morning and evening peak hour trip generation rates, the three days of count data were averaged and then divided by the total number of households to produce a trip rate per household. Summerset I has the lowest trip generation rate per household, while Summerset III has the highest trip generation per household. Review of the data indicates a daily variation of around 3 percent during the three days of data collection, with slightly more variation in the peak levels of activity. The resulting trip generation rates were then compared with rates developed during a similar data collection effort documented in the 2004 Study as well as the standard ITE trip

rates per household for age-restricted detached housing, as presented in **Table 2**, as well as traditional, non-age restricted housing.

**TABLE 2**
**TRIP GENERATION RATE COMPARISON**

| Data Source | Trips per Household | | | | | | |
|---|---|---|---|---|---|---|---|
| | Daily | Morning Peak Hour | | | Evening Peak Hour | | |
| | | Inbound | Outbound | Total | Inbound | Outbound | Total |
| ITE Trip Rates for Active Adult[1] | 4.27 | 0.08 | 0.16 | 0.24 | 0.18 | 0.12 | 0.30 |
| ITE Trip Rates for Traditional Single-Family[2] | 9.44 | 0.19 | 0.55 | 0.74 | 0.62 | 0.37 | 0.99 |
| 2004 Study for Summerset | 5.24 | 0.08 | 0.14 | 0.22 | 0.20 | 0.13 | 0.33 |
| Weighted average of 3 survey sites from 2004 Study[3] | 3.96 | 0.05 | 0.12 | 017. | 0.14 | 0.09 | 0.23 |
| **2016 Summerset** | **3.64** | **0.06** | **0.10** | **0.16** | **0.16** | **0.12** | **0.28** |

Notes: 1. 10th Edition ITE Trip rates are average rates for Land Use 251 Detached Senior Adult Housing.
2. 10th Edition ITE Trip rates are average rates for Land Use 210 Detached Single-Family Housing.
3. Reflects the weighted average Summerset Brentwood, Sun City Roseville and Clover Springs in Cloverdale as detailed in the 2004 Study.

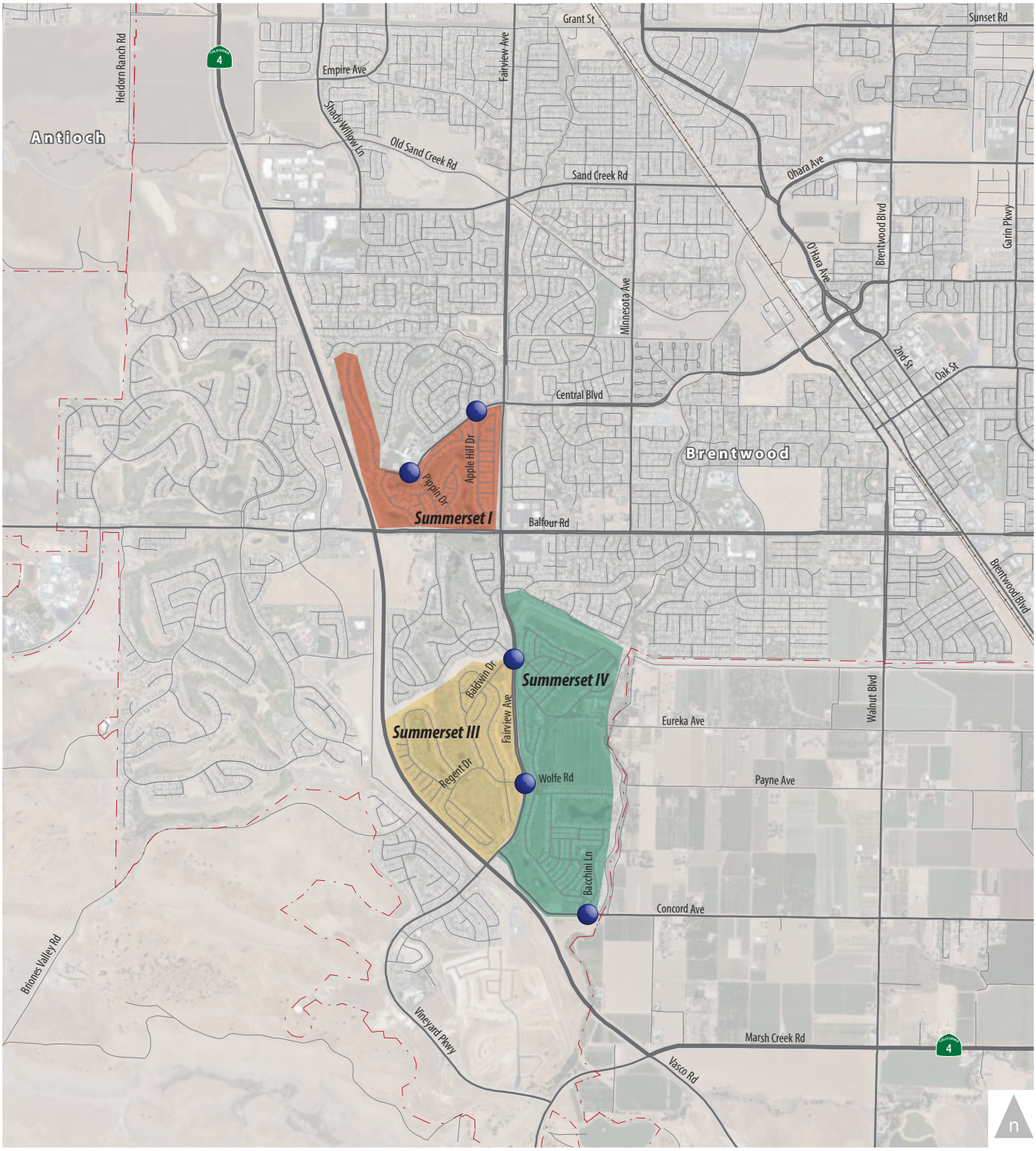
Source: Fehr & Peers, 2003 and 2016.

The trip generation data suggests that a new active adult community, which could initially expect an overall younger senior population that may be more active, would have higher trip rates in its initial years but over time as the members of the community age and their travel patterns change, vehicle trip generation rates per household are expected to decrease.

To assess the long-term impact of development of Active Adult neighborhoods on the transportation system in Eastern Contra Costa County, use of the most recent data collection effort is recommended. Please contact Kathrin or Delia at (925) 930-7100 if you have questions.

Attachments:

Figure 1 Data Collection Locations and Neighborhoods




**LEGEND**

Count Location | Summerset I | Summerset III | Summerset IV

Figure 1

# Study Intersections

# APPENDIX E: APPROVED/PENDING PROJECT INFORMATION



# Development Activity Project List

## Commercial

| Project Number | Project Name | Description | Applicant | Location | Site Size (acres) | Status | Expiration Date | Project Planner |
|---|---|---|---|---|---|---|---|---|
| DR18-021 | 7-Eleven & Quick Quack Carwash | 3,844 sf conveience store, 3,096 sf gas canopy w/ 6 fuel pumps, and 3,421 sf car wash | Quick Quack Development | 016-170-028 to -031 | 1.13 (store/fuel pumps) and 1.51 (carwash) | Staff Review | N/A | Crystal De Castro |
| DR18-018 | 7-Eleven Store | 2,880 sf retail store and fueling facility within the Shops at Lone Tree Village | TA Brentwood LLC | 019-020-071 | 0.87 | Approved | 12/04/19 | Christopher Rogers |
| DR17-001/CUP17-003 | Arco Gas Station | Proposed ARCO AM/PM, car wash, fueling facility | Barghausen Consulting Engineers | 6970 Brentwood Blvd | 2.23 | Approved | 05/15/19 | Christopher Rogers |
| DR16-012 | BMCC Elementary School Modular Building | Addition of three new modular blds for a proposed private elementary school for an existing reilgious assembly use | Brentwood Muslim Community Center | 7701 Lone Tree Wy | 1.04 | Staff Review | N/A | Debbie Hill |
| DR17-013/RZ17-006 | Brentwood Motorsports | 20,310 sf auto retail and service building | Brentwood Motorsports | 535 Harvest Park Dr | 2.00 | Approved | 02/22/19 | April Drummond |
| DR18-009 / CUP15-003-A1 | Celebration Center Phase II | 4,900 sf building for four classrooms and accessory features to accommodate a preschool, after school program, and senior | Celebration Center | 2260 Jeffery Wy | 4.99 | Approved | 09/04/19 | April Drummond |
| DR18-001 | Center Pointe | 48,920 sf commercial building and related improvements | TA Brentwood LLC | 019-020-071 | 1.12 | Approved | 06/19/19 | April Drummond |
| DR18-011 / CUP18-009 | Chase Bank | 3,470 sf commercial building with drive-thru automatic teller machine | TA Brentwood LLC | 019-020-071 | 1.41 | Approved | 09/04/19 | April Drummond |
| DR05-27 | City Block | 49,364 sf commercial center (mixed use- retail, restaurant, and office) | K&E Enterprises | 010-110-014 | 4.47 | Approved | N/A | Debbie Hill |
| DR17-009 | Commercial Building | 6,010 sf commercial building | JFM Development | 609 First St | 0.17 | Under Construction | N/A | Debbie Hill |
| DR18-020 | Commercial Building | 29,126 sf commercial mixed use building | AMP Oakwood Investments | 200 Oak St | 0.28 | Staff Review | N/A | Crystal De Castro |
| DR06-14 | Delta Fence | Two industrial buildings (office/warehouse) totaling 22,188 sf at the Sunset Industrial Complex | Frank Martin | 2185 Elkins Wy | 2.50 | Approved | N/A | April Drummond |
| CUP18-001 / DR18-002 | Dutch Bros. Coffee | 800 sf building with a drive thru component | ACE Properties | 010-160-029 | 0.63 | Approved | 04/03/19 | April Drummond |
| TSM 8633 / DR03-10 | Garin Ranch Commercial | 43,000 sf of office and restaurant buildings (3 bldgs) | The Festivals Company | 013-182-030 | 9.89 | Approved | N/A | April Drummond |
| DR08-01 | Kendall Plaza | 21,926 sf commercial building (shell) | SDG architects | 2010 Elkins Wy | 2.00 | Approved | N/A | April Drummond |
| DR17-012 | Kiddie Academy | New 1-story, 10,000 sf child care facilty within Garin Ranch | Tim Alatorre | 8680 Brentwood blvd | 1.20 | Approved | N/A | April Drummond |
| MS16-005 | LEBEC MS | Planned Development 47- Employment Center (mix of office, | LEBEC Properties | 3041 Walnut Blvd+E88 | 2.82 | Approved | Pending | April Drummond |
| MS17-003 / RZ17-008 | Lone Tree Crossings/Center Pointe | Planned Development 53- mixed use pedestrian transit | Greg Steele | 019-020-071 | 7.63 | Approved | 05/20/20 | April Drummond |
| DR18-013 | Love 4 Learning | 9,069 sf preschool building | Christian Mirner | 4640 Balfour Rd | 0.88 | Staff Review | N/A | April Drummond |
| DR18-003 | Merrill Gardens | New two-story, 129,450 sf building for a 123-unit residential | Urbal Architect | 130 Summerset Dr | 6.70 | Approved | 05/15/19 | April Drummond |
| DR17-015/CUP17-012 | Office/ Warehouse | 28,342 sf office warehouse building and related improvements | Stirling Architects | 30 and 31 Technology Ct | 1.46 | Under Construction | N/A | Debbie Hill |
| DR16-004 | Retail Building | 7,985 sf commercial building | Lone Tree Plaze LLC | 7460 Lone Tree Wy | 0.78 | Approved | 08/16/19 | Debbie Hill |
| DR18-010 / CUP18-006 | Rotten Robbie | Gas station, convenience store, and car wash | Robinson Oil Company | 6860 Lone Tree Wy | 0.37 | Staff Review | N/A | Debbie Hill |
| VSTM 8356 | Sciortino Ranch | 126,000 sf retail/commercial space | NUCP | | 9.00 | Approved | 12/15/20 | April Drummond |
| CUP18-010 | Taco Bell | 2,000 sf with drive thru within an existing 5,420 sf building | TA Brentwood | The Shops at Lone Tree | 7.63 | Approved | 08/21/19 | April Drummond |
| DR17-004 | Tarrar Office Remodel | 5,457 sf addition to an existing 2,799 sf office building | Tarrar Properties | 813 First St | 0.17 | Approved | 10/16/19 | Debbie Hill |
| DR04-34 | The Shops at Fairview | 94,000 sf retail use | Pacific Union | corner of Balfour Rd and Fairview Ave | 9.60 | Approved | N/A | Debbie Hill |
| DR06-08 | The Streets of Brentwood | 460,000 sf commercial center with mixed use | Fairbourne | 2575 Sand Creek Rd | 54.00 | Staff Review | N/A | April Drummond |
| DR16-014 | Tri City Plaza- Parcel 2 | Commercial building | Mike Ramsey | 6965 Lone Tree Wy | 1.70 | Staff Review | N/A | April Drummond |
| DR17-021 | Tri-City Plaza D | 10,815 sf office and commercial building | East LME Group | 6955 Lone Tree Wy | 1.08 | Under Construction | N/A | April Drummond |
| DR01-28 | Walnut Commercial Bldg A | New 2-story, 1,3790 sf building for office and R&D use | Ralph Strauss | 010-550-070 | 3.15 | Approved | N/A | Crystal De Castro |
| DR18-012 / CUP18-008 | Zip Thru Express Car Wash | Carwash | Paul Sagayaraj Amaldoss Henry | 2650 Empire Ave | 1.99 | Staff Review | N/A | Debbie Hill |

# Development Activity Project List

Residential

| Project Number | Project Name | Description | Applicant | APN/ Location | Site Size (acres) | Status | Expiration Date | Project Planner |
|---|---|---|---|---|---|---|---|---|
| DR18-019 | 2700 Empire Ave Project | 48 single-family units | K. Hovnanian | 019-010-004 | 10.89 | Approved | 12/04/19 | Christopher Rogers |
| TSM 14-004 | Amber Meadows | 160 units (69 single-family units and 126 Multi-Family units) | Martin Land Company | 019-031-005 | 20.00 | Staff Review | Pending | Debbie Hill |
| TSM 9435 / DR16-011 | Amberfield II | 6 single-family units | Kent Ipsen | 018-080-022 | 3.00 | Staff Review | Pending | April Drummond |
| TSM 8548 / DR 04-33 | Barrington | 494 single-family units (486 detached and 8 attached) | TRI Pointe Homes | 016-460-001 | 59.72 | Under Construction | N/A | April Drummond |
| TSM 9433 / DR15-018 | Bella Verde | 48 single-family units | Pulte Homes | and 013-450-001 through 013-450- | 6.10 | Approved | N/A | Debbie Hill |
| TSM 9360 / DR14-001 | Brentwood CC | 63 single-family units | Brentwood CC Partners | 010-020-015 | 26.00 | Approved | 02/18/20 | April Drummond |
| TSM 9486/DR18-008 | Brentwood Country Club | 24 single-family units | Brentwood Country Club Partners | 010-020-032 | 4.50 | Approved | 08/28/20 | April Drummond |
| TSM 8506 / DR17-007 | Bridal Gate | 252 single-family units and 258 multi-family | Discovery Builders | 019-082-007 | 92.00 | Staff Review | Pending | April Drummond |
| TSM 9424 / DR16-002 | Catchings Ranch | 24 single-family units | Brentwood 24 Investors | 012-030-007 | 8.03 | Approved | 08/09/20 | April Drummond |
| TSM 9452 / DR17-002 | Cowell Ranch | 140 Active Adult single-family duet units | Brentwood Commercial | 007-380-002, -003 | 29.19 | Approved | 07/25/20 | April Drummond |
| A18-001 / RZ18-004 | Dwelley/Mori Annexation | prezone into the City of Brentwood. No development | Mark Dwelley and Larry Mori | Delta Rd | 89.00 | Staff Review | Pending | Debbie Hill |
| TSM 8701 | Fairview Ave | 9 single-family units | H. Sino | 019-060-144 | 3.35 | Approved | N/A | Erik Nolthenius |
| TSM 9411 / DR15-005 | Harper Parc | 84 single-family units | WGV Nuvera | 010-160-038 | 29.19 | Under Construction | N/A | April Drummond |
| TSM 9428 / DR16-013 | Orfanos Property | 160 single-family units | Richland Communities | 2800 Empire Ave | 20.00 | Approved | 03/14/19 | April Drummond |
| TSM 9421 / DR15-013 | Palermo | 96 single-family units | Meritage Homes | 010-160-043 | 18.50 | Under Construction | N/A | Crystal De Castro |
| TSM 8982 | Parkside Villas | 37 single-family units | Alexandra Homes | 019-092-032 | 10.40 | Approved | 09/12/21 | April Drummond |
| TSM 9451 / DR16-020 | Pioneer Square/ Barcelona Trilogy | 72 Active Adult single-family duet residential units | Shea Homes | 003,-005 and 007-580-011,-012, | 481.00 | Under Construction | 04/25/19 | April Drummond |
| TSM 9356 | Sciortino Ranch | 326 single-family units | NUCP | 016-170-011 | 52.00 | Under Construction | N/A | Debbie Hill |
| DR17-003 | Silvergate | 166 unit, three story apartment complex and recreation center | Claremont Homes | 016-120-025 | 8.00 | Under Construction | N/A | Debbie Hill |
| TSM 8446 | St. James Tract | 8 single-family units | Minnesota Rentals | 017-080-007 | 3.77 | Approved | 04/10/19 | Debbie Hill |
| TSM 8808 | St. Martins Place | 8 single-family units | Mark Taylor | 017-630-001 | 4.02 | Under Construction | N/A | Debbie Hill |
| TSM 8796 / DR06-02 | Trilogy at the Vineyards | 1600 single-family units (110 detached and 150 attached) | Shea Homes | 007-560-028 | 481.00 | Under Construction | N/A | Debbie Hill |
| TSM 9173 / DR07-014 | Villagio | 160 single -family units | Discovery Builders | 012-130-006 | 42.30 | Under Construction | N/A | Debbie Hill |
| DR14-013 / TSM 8796 | Vista Dorado I | 82 single-family units | Shea Family | 007-560-028 | 43.90 | Under Construction | N/A | April Drummond |

# Development Activity Project List

Residential

| Project Number | Project Name | Description | Applicant | APN/ Location | Site Size (acres) | Status | Expiration Date | Project Planner |
|---|---|---|---|---|---|---|---|---|
| TSM 8796 / DR16-016 | Vista Dorado II | 50 single-family units | Shea Family | 007-560-028 | 16.18 | Approved | 01/17/19 | April Drummond |

# CITY OF ANTIOCH
# DEVELOPMENT PROJECT PIPELINE

| Project Number(s) and Plans | Project | Applicant | Location | APN(s) | Project Description | Site Size | Status |
|---|---|---|---|---|---|---|---|
| **RESIDENTIAL PROJECTS** | | | | | | | |
| ***UNDER REVIEW*** | | | | | | | |
| UP-18-20, AR-18-21, Z-18-09 | Windsor Manufactured Home Community | Shawn Rowles<br>1730 Ninth St.<br>Berkeley, CA 94710 | 2709 Windsor Drive | 068-252-041, 042, 043 & 045 | 31 units of Senior Housing | 2.5 acres | Under Review |
| Z-18-01, UP-18-04, AR-18-06 **PLANS** | AMCAL Apartments | Jay Ross, Darin Hansen<br>AMCAL Multi-Housing<br>30141 Agoura Rd, Suite 100<br>Agoura Hills, CA 91301-4332 | 3530-3560 E. 18th St. | 051-200-025 & -026 | Construct 394 Affordable Apartments. | 14.7 acres | Under Review |
| GP-18-02, PD-18-03, UP-18-19, AR-18-20 | Delta Fair Village | Gabriel Chiu<br>Chiu Family LLC<br>1767 Garmano Way<br>Pleasanton, CA 94566 | 2710-3040 Delta Fair Blvd. | 076-440-029, 030,031 | Drive-thru restaurant and 210 apartments | | Under Review |
| AR-19-03 | Parkridge Phase II | Steve Abbs<br>Davidon Homes<br>1600 S. Main St, Suite 150<br>Walnut Creek, CA 94596 | | 053-060-034-5 | Design Review for Phase 2 (58 Lots) | | Accepted |
| ***APPROVED, UNDER CONSTRUCTION*** | | | | | | | |

# CITY OF ANTIOCH
# DEVELOPMENT PROJECT PIPELINE

| Project Number(s) and Plans | Project | Applicant | Location | APN(s) | Project Description | Site Size | Status |
|---|---|---|---|---|---|---|---|
| AR-18-23 **PLANS** | Vineyards at Sand Creek Amenity Building and Landscape plan | Alicia Wilson<br>Century Communities<br>6700 Koll Center Pkwy #240<br>Pleasanton, CA 94566 | Sand Creek Road, Heidorn Road and Hillcrest Avenue | 057-030-007 | Amenity building and landscaping plan for 641 unit residential development | 140.37 acres | Planning Commission Approved 2/20/19 |
| PDP-13-01<br>PD-14-02<br>UP-14-08<br>AR-14-03 **PLANS** | Heidorn Village | Douglas Krah<br>1917 Parkmont Drive<br>Alamo, CA 94507 | Heidorn Ranch Road @ Prewett Park Drive | 056-130-013, 015, 017, 018 | 117 SFD | 20.09 | Planning Commission approved 11/4/15<br>City Council approved 1/12/16<br>Under construction |
| AR-14-07<br>UP-08-04<br>AR-05-05<br>Z-09-02 **PLANS** | Park Ridge | Steve Abbs<br>Davidon Homes<br>1600 S. Main St, Suite 150<br>Walnut Creek, CA 94596 | Parkridge Subdivision 8846<br>Canada Valley Road | 053-060-023<br>053-072-016 | Design Review<br>525 SFD | 171 Acres | Phase 1 Permits issued |
| UP-18-06 **PLANS** | Vineyards at Sand Creek Use Permit Phases 1-3 | Matthew Beinke GBN Partners LLC<br>3820 Blackhawk Road<br>Danville, CA 94506 | 3052 Heidorn Ranch Road | 057-030-003 | Use permit for Phases 1-3=337 units | 140.37 acres | Zoning Administrator approved on 5/24/18<br>Under construction |
| AR-18-17 | Vineyards at Sand Creek Phases 1-3 Design Review | Talli Robinson<br>Century Communities<br>99 Almaden Blvd, #400<br>San Jose, CA 95113 | Sand Creek, Heidorn Ranch & Hillcrest Ave. | 057-030-007 | Master Plan Architecture for Village 1, 2 & 3. | 66+ acres | Planning Commission approved on 10/3/18 |
| GP-14-01 **PLANS** | Vineyards at Sand Creek | Matthew Beinke GBN Partners LLC<br>3820 Blackhawk Road<br>Danville, CA 94506 | Heidorn Ranch Road | 057-030-003 | 641 unit residential subdivision | 140.37 acres | City Council approved on 2/9/16 |
| GP-16-03<br>Z-16-02<br>UP-16-19<br>AR-16-14 **PLANS** | Almond Knolls | The Grupe Company<br>Kyle Masters<br>3255 West March Lane 4th Floor<br>Stockton, CA 95219 | Worrell Road, East of Lone Tree Way | 071-072-015-2 | 58 apartments, parcel map for condominium purposes | 2.9+ acres | City Council approved 7/25/17<br>Under construction |

# CITY OF ANTIOCH
# DEVELOPMENT PROJECT PIPELINE

| Project Number(s) and Plans | Project | Applicant | Location | APN(s) | Project Description | Site Size | Status |
|---|---|---|---|---|---|---|---|
| AR-16-02<br>PD-14-01<br>UP-16-14<br>**PLANS** | Aviano | Mike Evans<br>DeNova Homes<br>1500 Willow Pass Court<br>Concord, CA 94520 | Near Hillcrest Avenue & Sand Creek Road | 057-030-005<br>057-050-022<br>057-050-014 | 533 single family detached homes | 189 acres | City Council approved 9/8/15<br>Under construction |
| ***APPROVED, AWAITING CONSTRUCTION*** | | | | | | | |
| AR-18-10 | Nelson Ranch Unit 3 | K. Hovnanian Homes<br>3721 Douglas Blvd, Suite 150<br>Roseville, CA 95661 | Goode St, Parkside | | 3rd Phase Design Review | | Planning Commission approved 2/6/19 |
| PD-18-01 | McCauley SFD/Barn | Sean McCauley<br>420 Beatrice Ct, Suite E<br>Brentwood, CA 94513 | 7901-7979 Deer Valley Road | 057-060-014-15 | SFD/Barn<br>Roddy Ranch | 40 acres | City Council approved 11/13 |
| PD-15-02 | Quail Cove | West Coast Home Builders, Inc.<br>4061 Port Chicago Hwy Concord, CA 94520 | Prewett Ranch Dr. & Cochico Drive | 056-130-012 | Vesting Tentative Map for 32 units Single-Family | 5.59 acres | City Council approved 10/9/18 |
| PD-16-01 | Black Diamond Ranch Unit 4 | Discovery Builders, Inc.<br>4061 Port Chicago Hwy, #H Concord, CA 94520 | Countryside Way; Torgensen Court | 089-160-010 | 10 SFD | 20.98 acres | Planning Commission approved 6/6/18 |
| MDP-17-01<br>**PLANS** | The Ranch | Richland Communities<br>Aaron Ross-Swain<br>3000 Lava Ridge Ct., Ste. 115<br>Roseville, CA 95661 | West of Deer Valley Rd., East of Empire Mine Rd. | 057-010-002<br>057-010-003<br>057-021-003 | Approx. 1,100 SFD, 54,000 s.f. of commercial space, 3.5 acres of public/institutional uses | 551.5 | Initiative adopted by Council 7/24/18 |
| PD-15-01<br>**PLANS** | Oakley Knolls | Discovery Builders, Inc.<br>4061 Port Chicago Hwy Concord, CA 94520 | Oakley Road and Honeynut Street | 051-430-001-018 | Vesting Tentative Map for 31 units | 5.56 acres | City Council approved 4/10/18 |

# CITY OF ANTIOCH
# DEVELOPMENT PROJECT PIPELINE

| Project Number(s) and Plans | Project | Applicant | Location | APN(s) | Project Description | Site Size | Status |
|---|---|---|---|---|---|---|---|
| UP-15-16<br>AR-15-16<br>PLANS | Delta Courtyard Apts. | William R. Spann<br>Pacific West Communities Inc.<br>26302 Table Meadow Rd.<br>Auburn, CA 95602 | 701 & 810 Wilbur Ave. | 065-110-006 & 007 | Design Review, Use Permit and Lot Line Adjustment to develop 126 unit multi-family apt. complex | 4.46 acres | Planning Commission approved 9/7/16 |
| PD-15-03<br>PLANS | Laurel Ranch | Richland Communities Inc. 801 Ygnacio Valley Rd, Suite 110 Walnut Creek, CA 94596 | West of Hwy 4 Bypass, North of future Laurel Road extension | 053-060-031 | Proposed residential Development for approx. 187 lots | 54 acres | Planning Commission approved 7/20/16<br>City Council approved 9/13/16 |

# CITY OF ANTIOCH
# DEVELOPMENT PROJECT PIPELINE

| Project Number(s) and Plans | Project | Applicant | Location | APN(s) | Project Description | Site Size | Status |
|---|---|---|---|---|---|---|---|
| **COMMERCIAL AND MIXED USE PROJECTS** | | | | | | | |
| ***UNDER REVIEW*** | | | | | | | |
| PD-18-02 **PLANS** | Acorn Business Park | JMI Properties Corporation<br>8117 Marsh Creek Rd.<br>Clayton, CA 94517 | NW corner of 18th St. and Drive-in Way | 051-052-112<br>051-052-113 | Self storage (5.44 acres), business park (10.52 acres), commercial and hospitality businesses (13.79 acres) | | Under Review |
| UP-18-13 **PLANS** | Delta Dispensary | Rick Hoke<br>1636 Lillian St.<br>Brentwood, CA 94513 | 2101 W. 10th St, Suite B | 074-051-005-2 | Cannabis Sales | | Under Review |
| UP-18-14 **PLANS** | Eagle Extracts | Rick Hoke<br>1636 Lillian St.<br>Brentwood, CA 94513 | 2101 W. 10th St, Suite A | 074-051-005-2 | Cannabis Extractions | | Under Review |
| UP-18-15 **PLANS** | One Plant | Sidney Dunmore<br>3941 Park Drive, Suite 20-626<br>El Dorado Hills, CA 95762 | 2701 West 10th Street | 074-051-029 | Commercial Cannabis | | Under Review |
| UP-18-21 | Alluvium Inc. | Alluvium Inc.<br>2625 Crow Court<br>Antioch, CA 94509 | 2625 Crow Court | 074-052-022 | Cannabis Retail/Delivery | | Under Review |
| UP-18-23 | Contra Costa Farms LLC | Contra Costa Farms LLC<br>420 S. 2nd Street<br>Rio Vista, CA 94571 | 3400 Wilbur Avenue | 051-051-021 | Cannabis – Cultivation, manufacturing, distribution and retail | | Under Review |

# CITY OF ANTIOCH
# DEVELOPMENT PROJECT PIPELINE

| Project Number(s) and Plans | Project | Applicant | Location | APN(s) | Project Description | Site Size | Status |
|---|---|---|---|---|---|---|---|
| UP-18-22 | Element 7 | Robert M. Divito Jr.<br>Element 7 LLC<br>7936 Hillside Avenue<br>Los Angeles, CA 90046 | 729 Fulton Shipyard Road | 065-040-030 | Cannabis – Manufacturing, distribution, delivery and retail storefront dispensary | | Under Review |
| PD-18-04 | PG&E OPS – Office | Victor Ogu<br>Pacific Gas & Electric Company<br>1850 Gateway Blvd, Suite 600<br>Concord, CA 94520 | 2111 Hillcrest Avenue | 051-160-002 | Service Center Upgrade | | Under Review |
| AR-19-01 | Target Rebrand | Sophia Lai<br>Kimley-Horn<br>100 West San Fernando St, Suite 250<br>San Jose, CA 95113 | 5769 Lone Tree Way | 056-120-059-3 | Rebrand | | Under Review |
| UP-19-01<br>AR-19-02<br>V-19-02 | Jack in the Box | Greg Borchardt<br>PM Design Group Inc.<br>6930 Destiny Dr, Suite 100<br>Rocklin, CA 95677 | 2505 A Street | 068-142-022 | Construct new 2,847 sf | | Accepted |
| ***APPROVED, UNDER CONSTRUCTION*** | | | | | | | |
| UP-17-05<br>V-17-04<br>AR-17-15<br>**PLANS** | ARCO AM/PM Gas Station and Car Wash | Patrick Lemons<br>PO Box 430<br>Tracy, CA 95478 | 1800 W. 10th St. | 074-040-041 | Demolish existing structures and replace with new gas station, convenience store and car wash | | Planning Commission approved 3/7/18<br>Under Construction |

# CITY OF ANTIOCH
# DEVELOPMENT PROJECT PIPELINE

| Project Number(s) and Plans | Project | Applicant | Location | APN(s) | Project Description | Site Size | Status |
|---|---|---|---|---|---|---|---|
| PD-16-03<br>GP-16-01<br>UP-16-08<br>AR-16-04 | Wildflower Station | Mike Evans DeNova Homes<br>1500 Willow Pass Ct.<br>Concord, CA 94520 | North Section of the intersection @ Wildflower Dr & Davison Dr. | 053-140-002 | 10.45 acres of commercial use, 7.00 acres of condominiums (98 condos), 4.5 acres of single family (22 lots) | 23.03 acres | City Council Approved 2/13/18<br>Under construction |
| UP-17-03<br>AR-17-13<br>PLANS | ARCO AM/PM Gas Station and Car Wash | Patrick Lemons<br>PO Box 430<br>Tracy, CA 95478 | Hillcrest Ave. and Wildflower Dr. | 052-460-011 | New gas station, convenience store and car wash | | Planning Commission approved 1/17/18<br>Under Construction |
| UP-16-03 AR-16-07<br>V-16-05<br>PLANS | Delta Bowl Addition & Remodel | Kenneth Melton<br>Melton Recreation Inc.<br>4745 Del Valle Pkwy<br>Pleasanton, CA 94566 | 3300 Delta Fair Blvd. | 074-122-049 | Building expansion and exterior modernization/ parking variance | 3.337 acres | Planning Commission approved 6/7/17<br>Under construction |
| UP-16-09 AR-16-05<br>V-16-02<br>PLANS | 4 Star Auto Repair | Kalsoom Ghafoor<br>3420 E. 18th Street<br>Antioch, CA 94509 | 3420 E. 18th Street | 051-200-060 | Install 4 Car Bays & Prefab Metal Bldg for Auto Repair Shop | .433 acres | Planning Commission approved 4/5/17<br>Under Construction |
| UP-16-18 AR-16-12<br>PLANS | Granite Expo | Jacky Li<br>Granite Expo<br>1368 40th Street<br>Emeryville, CA 94608 | 1888 Verne Roberts Circle | 075-051-011 | Commercial Remodel 389,000 sf | 28.31 acres | Planning Commission approved 5/3/17<br>Under construction |

# CITY OF ANTIOCH
# DEVELOPMENT PROJECT PIPELINE

| Project Number(s) and Plans | Project | Applicant | Location | APN(s) | Project Description | Site Size | Status |
|---|---|---|---|---|---|---|---|
| ***APPROVED, AWAITING CONSTRUCTION*** | | | | | | | |
| AR-18-16 | Walmart Online Pickup | Sunday Bougher<br>SGA Design Group<br>1437 South Boulder, Suite 550<br>Tulsa, OK 74119 | 4893 Lone Tree Way | 056-011-030 | Online Grocery Pickup | 21.6 acres | Zoning Administrator approved 10/31/18<br>In Plan Check |
| UP-18-16<br>AR-18-14<br>**PLANS** | Verizon Empire Shopping Center | David Haddock<br>Verizon Wireless by Ridge Communications, Inc.<br>12667 Alcosta Blvd, Suite 175<br>San Ramon, CA 94583 | 5887 Lone Tree Way | 056-390-007-5 | Install new cell site | 1.19 acres | Zoning Administrator approved 11/8/18 |
| UP-18-12<br>AR-18-11<br>**PLANS** | Costco Fuel Facility Additions | David Babcock<br>David Babcock & Associates<br>3581 Mt. Diablo Blvd, Suite 235<br>Lafayette, CA 94549 | 2201 Verne Roberts Circle | 074-052-040-8 | Expand fuel facility, increase canopy and add 4 new fuel dispensers | 15.23 acres | Zoning Administrator approved 11/8/18 |
| UP-18-05<br>AR-18-07<br>**PLANS** | AT & T Monopine | Tom Swarner<br>PEN for AT & T Mobility<br>2615 Camino Lenada<br>Oakland, CA 94611 | 3215 Fairview Drive | 074-123-009-8 | Unmanned Wireless Antenna Facility | .01 acre | Planning Commission approved 11/7/18<br>In plan check |
| AR-17-03<br>V-17-01<br>**PLANS** | Jack in the Box Remodel | Greg Borchardt<br>PM Design Group Inc.<br>6930 Destiny Drive, Suite 100<br>Rocklin, CA 95677 | 2505 A Street | 068-142-022 | Jack in the Box Remodel | .5177 acres | Zoning Administrator approved 7/13/17 |

# CITY OF ANTIOCH
# DEVELOPMENT PROJECT PIPELINE

| Project Number(s) and Plans | Project | Applicant | Location | APN(s) | Project Description | Site Size | Status |
|---|---|---|---|---|---|---|---|
| AR-17-17 | Kaiser Solar | Tyge Nason<br>Ameresco, Inc.<br>2375 E. Camelback Rd, Suite 400<br>Phoenix, AZ 85016 | 4501 Sand Creek Rd. | 057-022-021 | New Steel Parking Canopies with Solar | | Planning Commission Approved 4/18/18<br>Under construction |
| AR-17-16<br>PLANS | Revised Somersville Towne Center Out Parcels | Kevin Le<br>Courtney + Le Architects<br>801 S. Myrtle Avenue<br>Monrovia, CA 91016 | Somersville & Fairview | 074-450-033-1 | Design Review to approve 2016 CUP modification of out parcel development. Phase I to be a 3000 sf drive-thru | | Planning Commission approved 12/6/17 |
| AR-15-14 | Buchanan Crossings Shops Building E | Matt Nohr<br>Buchanan Crossings LLC<br>10 Harris Court, Suite B1 Monterey, CA 93940 | 3140 Buchanan Road | 074-080-013 | Design Review for single story multi- tenant retail building | 13.5 acres | City Council approved 10/27/15 |
| PD-16-02 AR-16-03 UP-16-06<br>PLANS PLANS | Vineyard Self Storage | Reid Hamilton American Recess<br>85 Keystone Ave, Suite E Reno, NV 89503 | E. 18th & Vineyard | 051-052-074 | Storage Facility | 6.68 acres | City Council approved 10/11/16<br>Under construction |
| PD-06-04 UP-06-21 S-08-01 | Hillcrest Summit | Bedrock Ventures Inc.<br>4045 Balfour Avenue<br>Oakland, CA 94610 | Hillcrest Avenue and E Tregallas | 052-100-055 | 1500 sq feet retail 35,077 sq ft office | 5 acres | Planning Commission approved 1/16/08<br>DRB approved 1/23/08<br>City Council approved 2/26/08 Extension until 3/11/19 |
| AR-16-08<br>PLANS | Big Break Solar | NRG Solar DG, LLC<br>c/o Joe Corning<br>100 California St, Suite 400<br>San Francisco, CA 94111 | 3201 Wilbur Avenue | 051-031-020 | Design Review for a solar generating facility | 16 acres | Planning Commission approved 5/3/17 |

# CITY OF ANTIOCH
# DEVELOPMENT PROJECT PIPELINE

| Project Number(s) and Plans | Project | Applicant | Location | APN(s) | Project Description | Site Size | Status |
|---|---|---|---|---|---|---|---|
| AR-16-15<br>PLANS | Tri Delta Park & Ride | Steve Ponte<br>Tri Delta Transit<br>801 Wilbur Avenue<br>Antioch, CA 94509 | W. 6th St. and Auto Center Drive | 074-130-081 | New Park and Ride Lot | 4.25+ acres | Planning Commission approved 5/17/17 |
| AR-17-11<br>V-17-03<br>PLANS | Pinkys Klassy Kar Wash Solar | Richard Patterson<br>Spectrum Solar Energy<br>1588 Ashwood Drive<br>Oakley, CA 94561 | 300 E. 18th Street | | Solar Canopy Installation | | Zoning Administrator approved 11/9/17 |
| AR-17-10 | Contra Loma Plaza Monument Sign | Richard Luchini<br>Arrow Sign Co.<br>1051 46th Avenue<br>Oakland, CA 94601 | 3100 Contra Loma Blvd. | | Monument Sign | 49,048 | Zoning Administrator approved 9/14/17<br>In plan check |
| AR-18-03<br>PLANS | All Star Rents | John Wooten<br>All Star Rents<br>2525 Clay Bank Rd.<br>Fairfield, CA 94533 | 1205 Sunset Drive | 068-300-016 | New Structures for equipment rental yard | 1.281 acre | Zoning Administrator approved on 8/9/18<br>In Plan Check |
| UP-18-18<br>AR-18-18 | Event Hall | Prince Nwosu<br>517 West 2nd Street<br>Antioch, CA 94509 | 509 W. 2nd Street | 066-053-009 | Event Center | | Planning Commission approved 2/20/19 |

# APPENDIX F: APPROVED/PENDING PROJECT TRIP GENERATION



**TABLE 1**

**NEAR TERM APPROVED PROJECT TRIP GENERATION ESTIMATES**

| Project ID/Name | Project ID | Land Use[1] | Daily | AM Peak | | | PM Peak | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | In | Out | Total | In | Out | Total |
| ***City of Brentwood Projects*** | | | | | | | | | |
| Brentwood CC | 15 TSM 9360 | 63 Units[2] | 595 | 12 | 35 | 47 | 39 | 23 | 62 |
| Brentwood Country Club | TSM 9486 /DR18-008 | 24 Units[2] | 227 | 5 | 14 | 18 | 15 | 9 | 24 |
| Merrill Gardens | DR18-003 | 121 Units[5] | 248 | 5 | 4 | 9 | 12 | 10 | 22 |
| Bridle Gate | TSM 8506/ DR17-007 | 252 Units[2] | 2,379 | 47 | 140 | 186 | 157 | 92 | 249 |
| Bridle Gate | TSM 8506/ DR17-008 | 258 Units[3] | 1,404 | 24 | 69 | 93 | 70 | 44 | 114 |
| Bridle Gate | TSM 8506/ DR17-008 | 25.4 ksf[4] | 962 | 15 | 9 | 24 | 47 | 50 | 97 |
| Catchings Ranch | 15 TSM 424 | 24 Units[2] | 227 | 5 | 14 | 18 | 15 | 9 | 24 |
| Cowell Ranch | (TSM 9452/DR 17-002) | 140 Units[6] | 518 | 10 | 18 | 28 | 20 | 16 | 36 |
| Villagio | 17 TSM 9173 | 160 Units[2] | 1,510 | 30 | 89 | 118 | 100 | 58 | 158 |
| The Shops at Fairview | DR04-34 | 30.9 KSF[4] | 1,761 | 18 | 11 | 29 | 57 | 61 | 118 |
| Parkside Villas | TSM 8982 | 37 units[2] | 349 | 7 | 20 | 27 | 23 | 14 | 37 |
| Pioneer Square | TSM 9451/DR 16-020 | 72 Units[6] | 266 | 5 | 9 | 14 | 10 | 9 | 19 |
| Trilogy at Vineyards | TSM 8796/DR06-02 | 1,600 units[6] | 5,920 | 112 | 208 | 320 | 229 | 187 | 416 |
| Sciortino Ranch | 9356 | 326 units[2] | 3,077 | 60 | 181 | 241 | 203 | 120 | 323 |
| City Block | DR 05-27 | 7 ksf4 | 264 | 4 | 3 | 7 | 13 | 14 | 27 |
| Anden Apartments | DR19-007 | 320 units[3] | 1,741 | 30 | 85 | 115 | 86 | 55 | 141 |
| ***City of Antioch Projects*** | | | | | | | | | |
| Heidorn Village | PDP-13-01/ PD-14-02/ UP-14-08/ AR-14-03 | 117 Units[2] | 1,104 | 22 | 65 | 87 | 73 | 43 | 116 |
| Aviano | AR-16-02/ PD-14-01/ UP-16-14 | 533 Units[2] | 5,220 | 102 | 307 | 409 | 345 | 202 | 547 |
| Vineyards @ Sand Creek | AR-18-23/ AR-18-17/ UP-18-06/ FP-14-01 | 641 Units[2] | 6,136 | 120 | 361 | 481 | 406 | 238 | 644 |
| Contra Costa County Community College District | N/A | 5,000 students[7] | 8,699 | 446 | 105 | 550 | 308 | 242 | 550 |

1. Unit = Dwelling Units, KSF = 1000 Sq ft
2. ITE Trip Generation land use category (210) - Single-Family Detached Housing (Adj Streets, 7-9A, 4-6P)
    - Daily: T = 9.44(X)
    - AM Peak Hour: T = 0.74(X) (25% in, 75% out)
    - PM Peak Hour: T = 0.99(X) (63% in, 37% out)

3. ITE land use category 221 – Multi-family (Mid Rise) Adj Streets, 7-9A, 4-6P):
    - Daily: (T) = 5.44 (X)
    - AM Peak Hour: T = 0.36(X); Enter = 26%; Exit = 74%
    - PM Peak Hour: T = 0.44(X); Enter = 61%; Exit = 39%
4. ITE land use category 820 – Retail (General Shopping) (Adj Streets, 7-9A, 4-6P):
    - Daily: (T) = 37.75 (X)
    - AM Peak Hour: T = 0.94(X); Enter = 62%; Exit = 38%
    - PM Peak Hour: T = 3.81(X); Enter = 48%; Exit = 52%
5. ITE land use category 253 – Congregate Care Facility (Adj Streets, 7-9A, 4-6P):
    - Daily: (T) = 2.02 (X)
    - AM Peak Hour: T = 0.07(X); Enter = 60%; Exit = 40%
    - PM Peak Hour: T = 0.18(X); Enter = 53%; Exit = 47%
6. ITE land use category 252- Active Adult Attached (Adj Streets, 7-9A, 4-6P):
    - Daily: (T) = 3.70 (X)
    - AM Peak Hour: T = 0.2(X); Enter = 35%; Exit = 65%
    - PM Peak Hour: T = 0.26(X); Enter = 55%; Exit = 45%
7. ITE land use category 540 – Junior/Community College (Adj Streets, 7-9A, 4-6P):
    - Daily: (T) = 1.15 (X)
    - AM Peak Hour: T = 0.11(X); Enter = 81%; Exit = 19%
    - PM Peak Hour: T = 0.11(X); Enter = 56%; Exit = 44%

# Appendix H

# PRELIMINARY STORMWATER CONTROL PLAN FOR THE VINEYARDS AT DEER CREEK PROJECT

Prepared for: Carlson, Barbee & Gibson, Inc.

Prepared by:



Balance Hydrologics, Inc.

March 2019

**March 14, 2019**

**PREPARED FOR:**

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# 1 REPORT OVERVIEW

## 1.1 Report Purpose and Summary

This report summarizes and analyzes constraints, opportunities, and preliminary design information related to managing stormwater runoff from the proposed Vineyards at Deer Creek Project ("Project") in Contra Costa County, California (**Figure 1-1**).[1] The Project site includes approximately 815 acres and straddles the divide between three regionally important east county watersheds. Proposed development consists of the phased construction of residential areas, limited commercial sites, limited commercial sites, and improvements to adjacent roadways. The watershed of the Project is approximately 841 acres and includes drainage from several off-site areas.

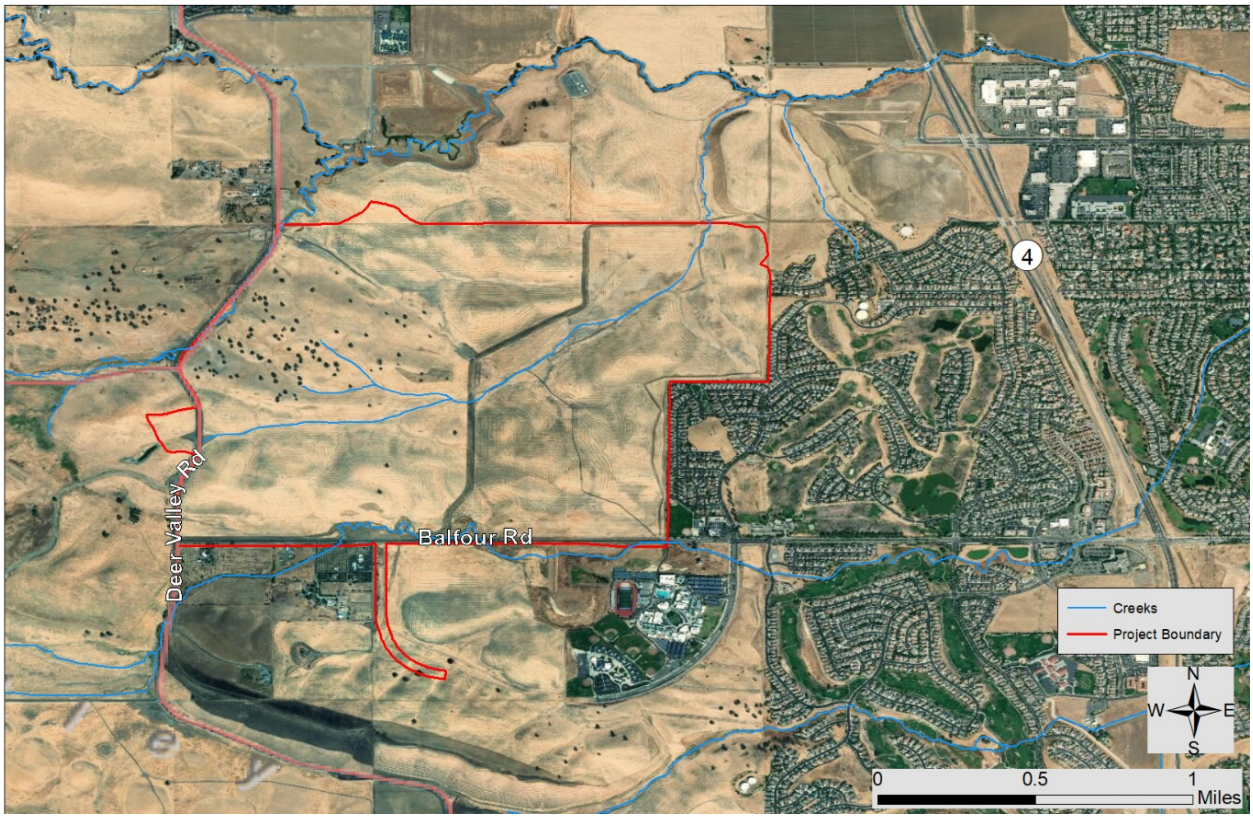



**Figure 1-1 Project location in Contra Costa County, California. [2]**

[1] At the time of this Preliminary SCP, the Project is located in unincorporated Contra Costa County, but is programmed for annexation to the City of Brentwood.

[2] The projected coordinate system for all ArcGIS maps used in this report is NAD 1983 California State Plane III FIPS 0403 Feet, Lambert Conformal Conic projection.

This document is intended to serve as a preliminary assessment document commensurate with the early planning and design status of the overall Project at the time of preparation. Detailed stormwater control plans utilizing the document template prescribed by the Contra Costa Clean Water Program will be prepared at a later date as specific, detailed design for each project phase moves forward.

Stormwater management in the context of this preliminary plan includes the requirement to assess, and if necessary, mitigate for potential impacts, and to protect the functions and values of receiving waters. Potential hydrologic impacts addressed in this report include water quality management, hydromodification management, and peak flow control. Development of the Project will directly address these issues with on-site measures and infrastructure. Furthermore, assessment of off-site constraints and opportunities related to hydrology and drainage downstream of the Project is used to identify the most effective and feasible means of achieving stormwater management goals for the Project. This plan summarizes the range of analyses, including field work, delineation of both existing on-site sub-watersheds and post-project Drainage Management Areas (DMAs), and hydrologic and hydraulic modeling used to provide preliminary design information for stormwater facilities needed to fully mitigate potential impacts.

## 1.2 Report Structure and Work Conducted

This Preliminary SCP begins with a discussion of the hydrologic setting of the Project, including factors affecting runoff generation; drainage patterns; and local stream channels that will convey runoff to the ultimate receiving waters of the greater Marsh Creek system. This is followed by a summary of the regulatory requirements for each facet of stormwater control as pertinent to the site. This information was used as the basis for hydrologic and hydraulic modeling to assess the anticipated magnitude and timing of peak flow rates for both pre- and post-project conditions, as well as modeling to characterize the magnitude and duration of low flow rates as part of the hydromodification control measures that will be implemented. Stormwater management opportunities and constraints identified through the modeling are discussed and form the basis of recommendations for the location and sizing of stormwater management basins capable of meeting all pertinent regulatory criteria.

The work proceeded from compilation and review of pertinent background materials through detailed hydrologic modeling to evaluate Project needs.

These steps included:

- *Collection and review of past studies and background information*. Previously prepared studies were compiled and reviewed for information germane to this study, and to identify any data gaps. This information included the Flood Insurance Study (FIS) for Contra Costa County prepared by the Federal Emergency Management Agency (FEMA), soil mapping information from the Web Soil Survey site maintained by the National Resources Conservation Service (NRCS), and archived documents relating to the design and operation of the adjacent County flood control facilities.

- *Summary of pertinent regulatory requirements*. Several documents were used to summarize the current regulatory framework. These include the Basin Plan issued by the Central Valley Regional Water Quality Control Board ("RWQCB") and the East Contra Costa County MS4 Permit (RWQCB Order R5-2010-0102), which regulates development within those parts of the County draining to the Sacramento-San Joaquin Delta east of Suisun Bay. Specific guidance and requirements were also taken from the Contra Costa County Clean Water Program's Stormwater C.3 Guidebook (CCCCWP, 2017; hereafter "C.3 Guidebook").

- *Hydrologic and hydraulic modeling.* Site characterization and initial facility sizing were informed through calculations using the IMP Calculator tool provided in the C.3 Guidebook as well as preliminary-stage hydrologic and hydraulic modeling using the U.S. Army Corps of Engineers' HEC-HMS platform for peak flow (flood control) analysis. Modeling was conducted for the entire study area using City and County design standards while taking into account the location and density of proposed development.

- *Conclusions and Recommendations.* The resulting recommendations for stormwater management facility siting and sizing are presented both to demonstrate the manner by which the Project can fully mitigate potential impacts and to provide a basis for further detailed design of the overall storm drainage infrastructure and its connections to downstream systems and receiving waters.

Detailed discussions herein of existing conditions the regulatory framework, and proposed management strategies can be used as supporting documentation for the project environmental review process.

# 2 HYDROLOGIC SETTING

Knowledge of the hydrologic setting of any project site provides important information about stormwater runoff potential, existing drainage patterns, opportunities and constraints associated with stormwater management, and prevailing boundary conditions of receiving waters. Key to assessing these hydrologic opportunities and constraints is development of a baseline understanding of the geographic and topographic setting, local climate conditions, and surface soils / subsurface geology interactions; each of which influence the physical character of the watershed. Land uses within a watershed exert strong pressures on runoff and flood conditions. When unmitigated, urbanization results in flashier runoff conditions[3]; mitigation is required through the design, construction, and maintenance of appropriate stormwater infrastructure.

## 2.1 Geographic Location and Topographic Setting

The Project is located in eastern Contra Costa County (**Figure 1-1**). The site is bounded to the south by Balfour Road and to the west by Deer Valley Road. To the east, the site borders existing residential areas in the City of Brentwood off West Country Club Drive, while properties to the north are currently undeveloped and located in the City of Antioch.

The site topography is characterized by low, rolling hills generally clustered in two groups that are separated by the headwaters of an unnamed tributary of Sand Creek (see discussion below). The southern group of hills rises in elevation from east to west, with a high point of just under 380 feet. The northern hills likewise are higher in the west, but only rise to approximately 300 feet at the highest. The lowest elevations, on the order of 160 feet, are in the northeast portion of the site where the unnamed tributary flows off-site toward Sand Creek.

## 2.2 Regional Watershed Overview

The Project is located entirely within the Lower Marsh Creek watershed. Marsh Creek, with a total watershed area of 93.73 square miles (59,990 acres; CCC GIS, 2017), is the largest waterway in the City of Brentwood and is divided between Upper Marsh Creek (51.45 square miles) and Lower Marsh Creek (42.28 square miles) following the portions of the

[3] "Flashier" generally means that the maximum runoff discharge from a given rain event is larger, sooner, and of shorter duration than it would be under more natural conditions.

creek upstream and downstream of the Marsh Creek Reservoir. The middle portion of Marsh Creek that forms the Lower Marsh Creek watershed originates at the outlet of the Marsh Creek Reservoir and currently flows generally northeast to its confluence with the San Joaquin River located in the City of Oakley. The major tributaries entering the middle portion of Marsh Creek include Dry Creek, Sand Creek and Deer Creek.

As noted previously, the Project drains to three separate watersheds that are components of the Marsh Creek system as shown in **Figure 2-1**.

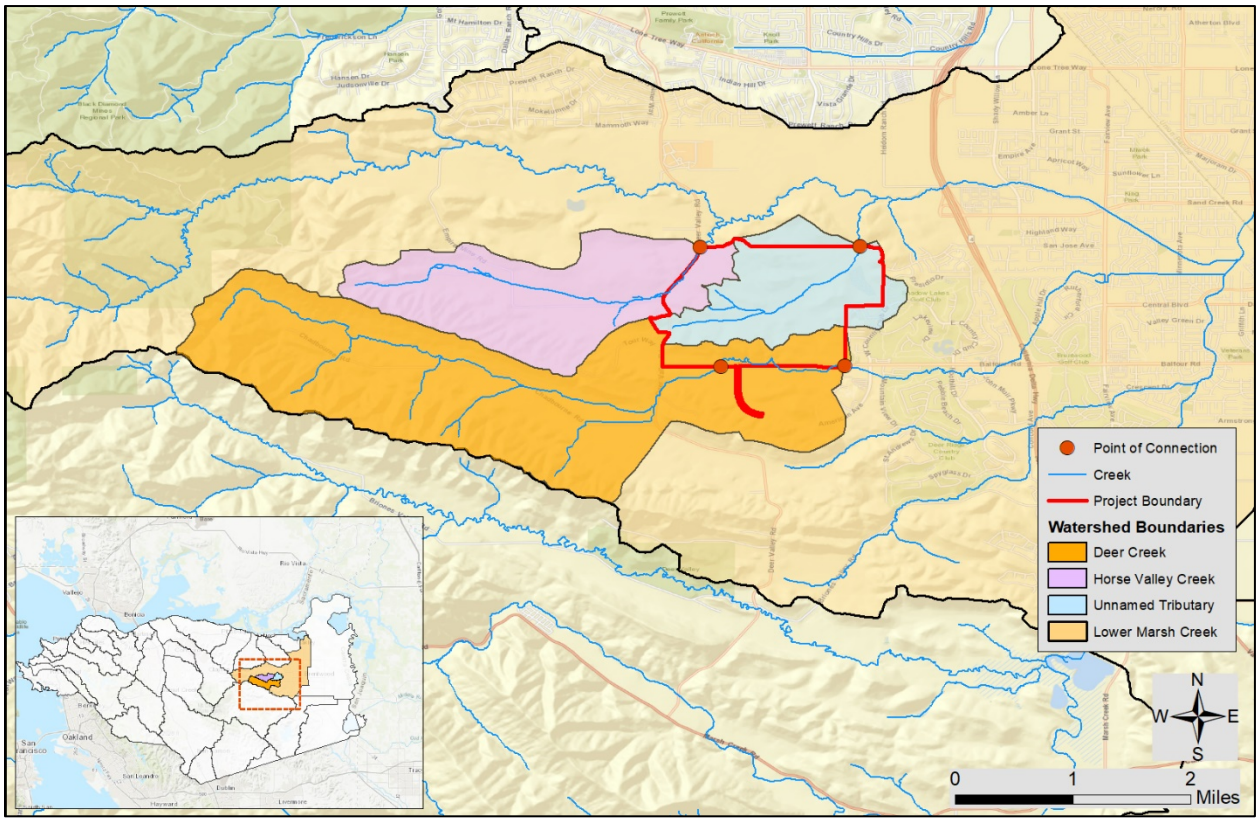



**Figure 2-1 Regional watersheds at the project site with points of connection of future stormwater systems.**

Most of the site drains to a headwater watershed that flows generally to the northeast and north to join Sand Creek approximately 2,500 feet north of the Project boundary and downstream of the recently-constructed Upper Sand Creek Basin. This headwater system is referred to herein as the "unnamed tributary". It begins west of Deer Valley Road upstream of the western Project boundary and flows approximately 7,500 feet across the site. At the northeast boundary of the Project, the unnamed tributary drains about 0.9

square miles (576 acres; USGS StreamStats, 2019), with about 97 percent of that drainage area (562 acres) lying within the Project boundaries.

The northwestern portion of the Project drains northwestward into Horse Valley Creek, which is a relatively large tributary watershed to Sand Creek. At the northwest boundary of the Project site, Horse Valley Creek drains about 1.8 square miles (1,152 acres; USGS StreamStats, 2019), with about 8 percent of that drainage area (92 acres) coming from the Project site. Horse Valley Creek continues northeasterly for about 1,000 feet downstream of the Project to its confluence with Sand Creek directly upstream of the Upper Sand Creek Basin, constructed and operated by the Contra Costa County Flood Control District ("Flood Control").

The southern portion of the Project drains southward into Deer Creek. Deer Creek enters the Project boundary at the southwest border through an undersized culvert under Balfour Road. Deer Creek meanders eastward within the Project area for approximately 2,500 feet until passing through another culvert under Balfour Road and entering Flood Control's Deer Creek Reservoir from which it continues eastward following the south side of Balfour Road. At the point just upstream of the Deer Creek Reservoir where Deer Creek leaves the project site underneath the Balfour Road culvert, Deer Creek drains a total area of 4.2 square miles (2,688 acres; USGS StreamStats, 2019), with about 7 percent of that drainage area (188 acres) contributed by the Project.

**Table 2-1** summarizes the watershed information for the three water body sources at the Project. The estimated discharge for each water body source and location was provided from the identified sources and is meant to serve as a means of reference.

**Table 2-1 Summary of watershed information for deer creek, horse valley creek, and the unnamed tributary of sand creek at the project.**

| Water Body Source and Location | Drainage Area (acres) | Estimated Discharge 10-year (cfs) | Estimated Discharge 100-year (cfs) |
|---|---|---|---|
| **Deer Creek** | | | |
| 14,100 feet upstream of Marsh Creek confluence; Downstream of Deer Creek Reservoir [1)] | 3,123 | --- | 317 |
| At the southeast Point of Connection of the Project Site; Upstream of Deer Creek Reservoir [2)] | 2,688 | 385 | 828 |
| **Unnamed Tributary** | | | |
| At the northeast Point of Connection of the Project Site [2)] | 576 | 89 | 200 |
| **Horse Valley Creek** | | | |
| At the northwest Point of Connection of the Projet Site [2)] | 1,152 | 183 | 402 |

1) Information produced by the Federal Emergency Management Agency (FEMA) as taken from the Flood Insurance Study for Contra Costa County and Incorpoated Areas (FEMA FIS, 2019)

2) Information estimated by the United States Geologic Survey (USGS) StreamStats software for respective points of delineation (USGS StreamStats, 2019).

## 2.3 Climate Characteristics of the Project Site

Geographically located in a semi-arid, Mediterranean climate region, mean annual rainfall in the vicinity ranges from just over 14 inches along the western property boundary to just under 13.5 inches along the eastern boundary, per isohyetal mapping prepared by Flood Control. (**Figure 2-2**). As with the rest of the San Francisco Bay Area, yearly climate conditions include cool, wet winters and warm, dry summers. The volume of rainfall in individual wet season storm events, as well as peak rainfall intensities, can vary considerably from storm to storm and from year to year, with essentially all precipitation occurring as rainfall in the months of October through May.

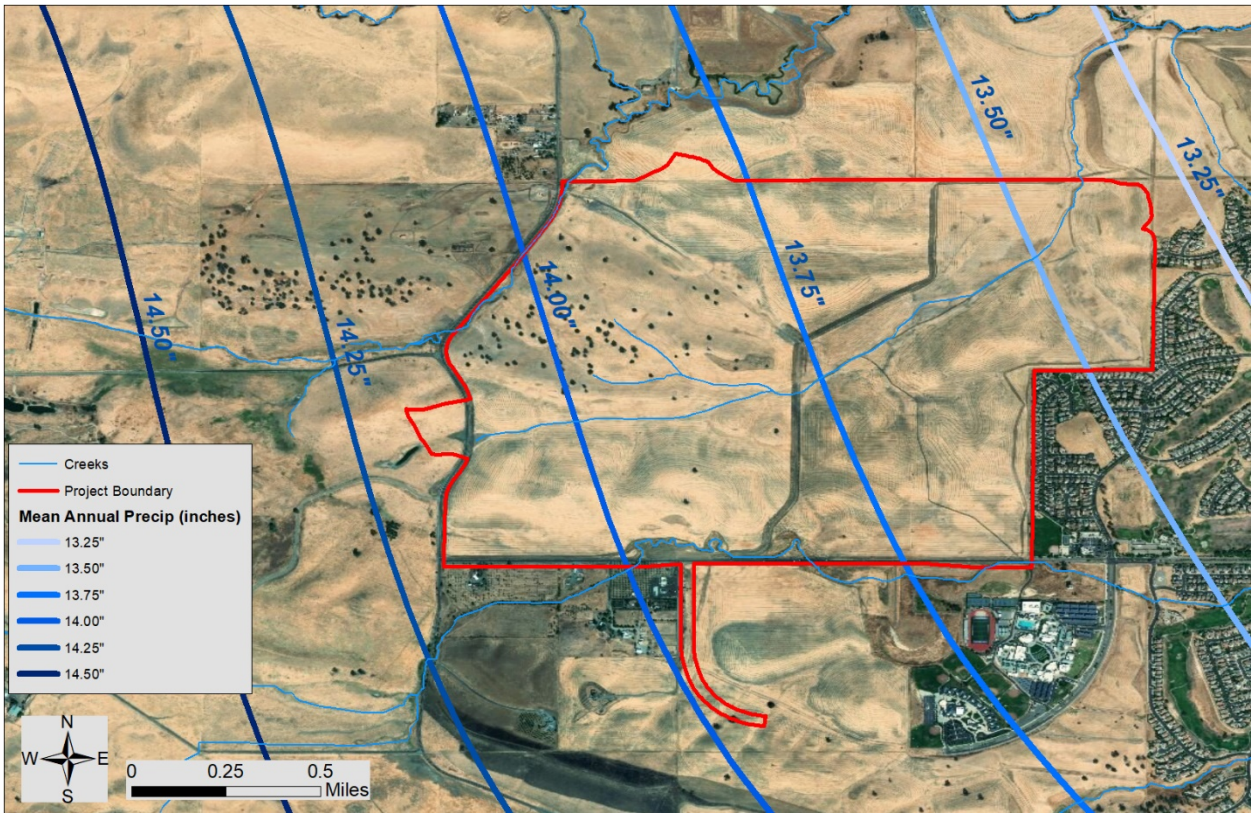



**Figure 2-2 Average yearly rainfall isohyets for the Vineyards at Deer Creek site.**
Source: Contra Costa County mean seasonal isohyetal map (1879-1973).

Dry conditions with little or no rainfall predominate from June through September each year (**Table 2-2**). Average monthly precipitation and reference evapotranspiration ($ET_o$) at the California Irrigation Management Information System Station #47, east of SR 4 and the Project, are shown in Error! Reference source not found. The data in **Table 2-2** are for the period from October 1999 through September 2018 and are from a somewhat drier part of the County but, nonetheless, show representative seasonal patterns. Monthly values for $ET_o$, driven largely by temperature and day length, run generally counter to those for precipitation. Average monthly $ET_o$ exceeds monthly precipitation in all but the three months of December, January, and February and totals approximately 56 inches/year.

**Table 2-2 Representative average monthly precipitation and reference evapotranspiration ($ET_o$) and precipitation.**

| Month | Precipitation *(inches)* | $ET_o$ *(inches)* |
|---|---|---|
| October | 0.8 | 3.9 |
| November | 1.2 | 1.9 |
| December | 2.4 | 1.3 |
| January | 2.3 | 1.2 |
| February | 2.1 | 2.1 |
| March | 1.5 | 3.9 |
| April | 1.0 | 5.4 |
| May | 0.3 | 7.2 |
| June | 0.1 | 8.1 |
| July | 0.0 | 8.3 |
| August | 0.0 | 7.2 |
| September | 0.1 | 5.9 |
| **Totals** | **11.7** | **56.3** |

## 2.4 Land Use

### 2.4.1 Historical and Existing Land Use

The site is characterized by rolling, grassland and has traditionally been used exclusively for grazing and limited dry land farming. There is no evidence of past irrigated agriculture, and, most notably, there are no existing structures (outside of powerline towers). Therefore, there are no significant areas of existing impervious cover except for the paved travel ways of Balfour Road and Deer Valley Road.

### 2.4.2 Proposed Land Use

Proposed land use will consist of a mixed-use residential community. The northwest, northeast, and southeast portions of the Project will be developed as residential with a mix of densities including public facilities (parks, water supply and stormwater infrastructure, etc). The southwest portion of the project will include mostly commercial areas. The Project will include the widening of Balfour Road at the southern boundary and an extension of American Avenue south of Balfour Road to tie into the current end of the former at a point south of Heritage High School.

## 2.5 Soil Characteristics

Surficial soil types classified by Hydrologic Soil Group[4] (HSG), as identified by the Natural Resources Conservation Service, can be found in **Appendix A**. The HSG classification shows that the NWS site is dominated by C and C/D soils with the presence of some A soils in the northwest and southeast area (**Figure 2-3**). Soil of types C and C/D are indicative of low infiltration rates, which substantially limit infiltration and recharge as primary methods for achieving stormwater management goals. Soils of type of A are indicative of higher infiltration rates and have a higher potential for utilizing infiltration and recharge to meet stormwater management goals.

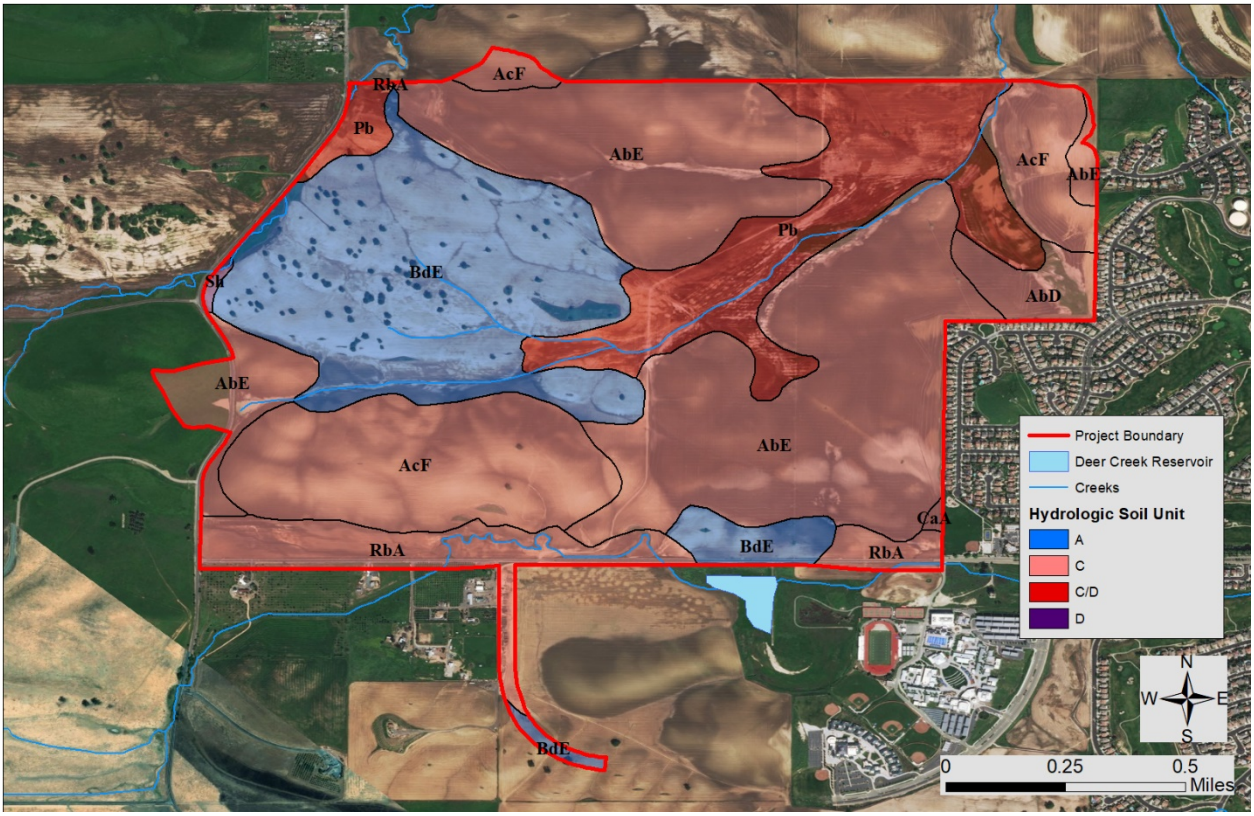



**Figure 2-3** **Soil units and hydrologic soil groups in planning area.** See **Appendix A** for soils unit legend.

[4] The NRCS classifies all soil types into one of four HSG groups based on runoff potential, ranging from Group A soils with low potential to Group D soils with the highest potential for runoff.

## 2.6 Drainage Management Areas

### 2.6.1 Pre-project Drainage Management Areas and Points of Connection

Currently, essentially all the site is undeveloped open space consisting almost exclusively of grassland with mature oak trees scattered along the northwest and southwest areas of the site. The southern boundary of the Project includes a portion of the Balfour Road right-of-way, presently a two-lane paved roadway. The pre-project drainage pattern for runoff at the site is conveyed as sheet flow that enters existing swales and natural channels.

The overall study area was divided into four drainage management areas ("DMAs") based on hydrologic points of concentration that constitute the key points of comparison for evaluating the efficacy of the proposed stormwater management strategy in meeting regulatory requirements and fully mitigating any potential adverse impacts with respect to water-quality, hydromodification, and flood control. The four DMAs are illustrated in **Figure 2-5**.

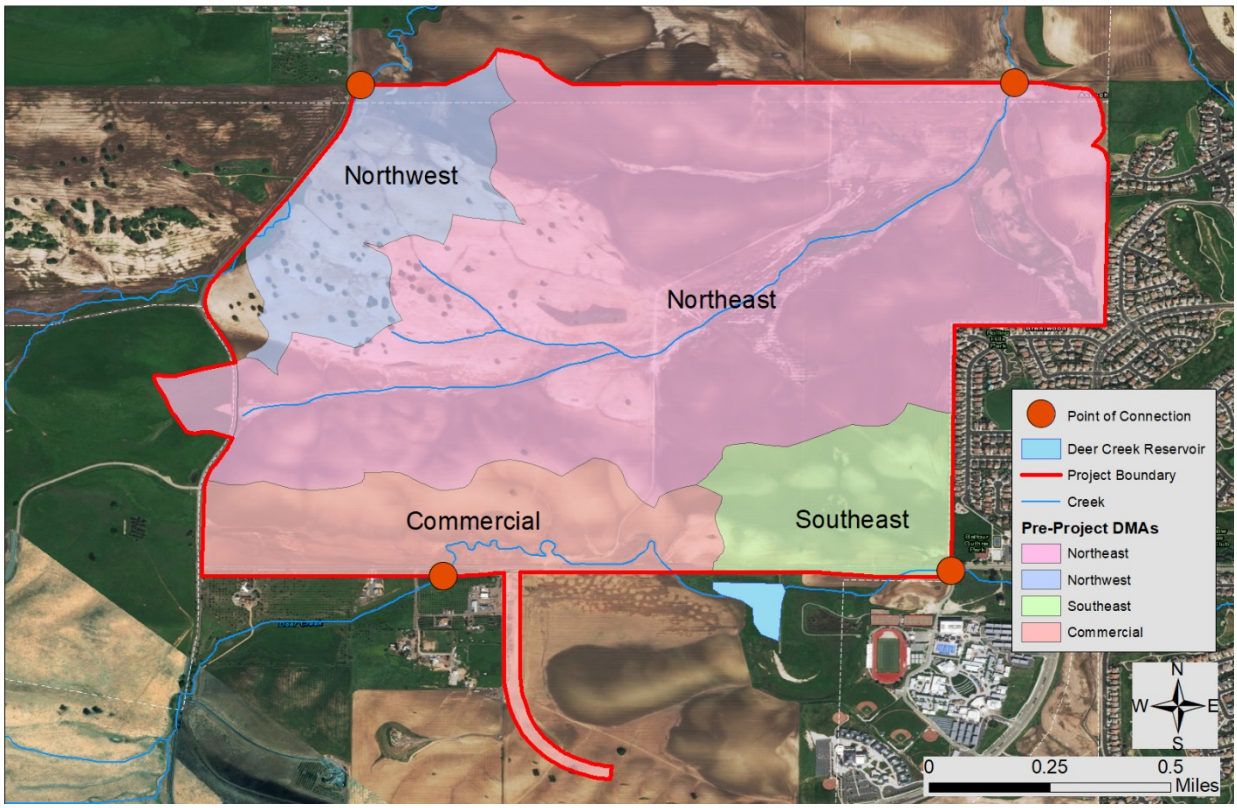



**Figure 2-4 Pre-project Drainage Management Areas (DMAs).**

Almost the entire Project area is included in one of the four DMAs. However, there are several small areas along the property boundary that will not be impacted by development and will not drain to the proposed stormwater infrastructure. Therefore, those areas are not included in the drainage analyses presented herein. Similarly, there are some areas outside the Project (such as the headwaters of the unnamed tributary) that will flow into the proposed storm drain system, even though they will not be impacted by the Project. Those areas are explicitly included in the stormwater management design.

As shown in Figure 2-5, Horse Valley Creek only barely enters the site along the reach where it flows east of Deer Valley Road. On the other hand, Deer Creek enters and then leaves the site at culvert crossings under Balfour Road. As noted previously, the upstream culvert crossing has been identified as under-capacity and discussions with Flood Control staff confirm that only a small fraction of the total creek flow is conveyed under Balfour Road, with the majority of flow entering Deer Creek Reservoir as overflow across the property south of Balfour. The restriction of flow through the Balfour Road culvert has decreased the magnitude of flood flows in Deer Creek for the 1,500-foot section within the Project boundary.

The proposed Balfour Road improvements will introduce additional impervious area and reduce the Flood Control's flowage easement for the Deer Creek Reservoir. However, these improvements to Balfour Road will be implemented in collaboration with Contra Costa County Flood Control to assure that the overall capacity of the current and future proposed Deer Creek Reservoir is not reduced or negatively impacted. The added impervious area has been explicitly accounted for in the modeling presented herein.

The characteristics of each DMA and the drainage pathways to their respective downstream points of connection are important considerations that frame the location, size, and design objectives of the proposed stormwater management infrastructure. **Table 2-3** summarizes key physical characteristics of each of the DMAs, which total 841 acres. The only notable pre-project impervious cover is along Balfour Road and is therefore included in the Southeast and Commercial DMAs.[5]

[5] Deer Valley Road flows directly into Horse Valley Creek where is runs parallel to the roadway. The portion of Deer Valley Road that drains to the unnamed tributary is not significant at the scale of the Northeast DMA.

The points of connection are located where the future stormwater infrastructure will discharge to the immediate receiving waters such that changes in land use and drainage area at each connection point can be explicitly accounted for in the hydrologic modeling.

**Table 2-3 Characteristics of the pre-project DMAs.**

| DMA | Drains to | Pre-Project Area (acres) | Pre-Project Impervious (%) |
|---|---|---|---|
| Northeast | Unnamed Tributary of Sand Creek | 562 | 0 |
| Northwest | Horse Valley Creek | 92 | 0 |
| Southeast | Deer Creek | 74 | 3 |
| Commercial | Deer Creek | 114 | 3 |
| | ***Total*** | ***841*** | ***1*** |

### 2.6.2 Post-project Drainage Management Areas and Points of Connection

Build-out of the Project will necessitate construction of entirely new drainage systems. The overarching element of the stormwater management strategy will be to maintain existing connection points to Deer Creek, Sand Creek, and the unnamed tributary while assuring that sufficient facilities are in place to fully mitigate potential changes in water quality, flow duration, and peak flood flows. The Project is proposed to be built in phases, and considerations related to the phasing plan create two distinct post-project conditions. The ultimate post-project drainage configuration is discussed first followed by the special considerations associated with the interim Phase 1 condition.

#### *Ultimate Development Post-Project Drainage Management Areas*

**Figure 2-5** shows the DMAs for the post-project condition. At the macro scale, the overall combined watershed area within the Project will remain the same. The proposed grading plan strives to maintain existing drainage boundaries to the maximum extent practicable.

The points of connection will consist of three new outfalls for three of the DMAs. The Northeast DMA will drain to a stormwater basin and outfall at the northeast property boundary. The Northwest DMA will drain via another stormwater basin to a proposed outfall to Horse Valley Creek. The Commercial DMA will likewise drain to a stormwater basin located north of Balfour Road, that will also accommodate runoff from a portion of the Balfour Road and American Avenue improvements. The Commercial DMA basin will discharge to a new outfall to Deer Creek, tentatively to be co-located with replacement of the undersized, upstream culvert on Deer Creek. The only DMA that will not have a

new outfall is the Southeast DMA, which will be connected to an existing 30-inch storm drain line that currently drains to Deer Creek downstream of the Deer Creek Reservoir.

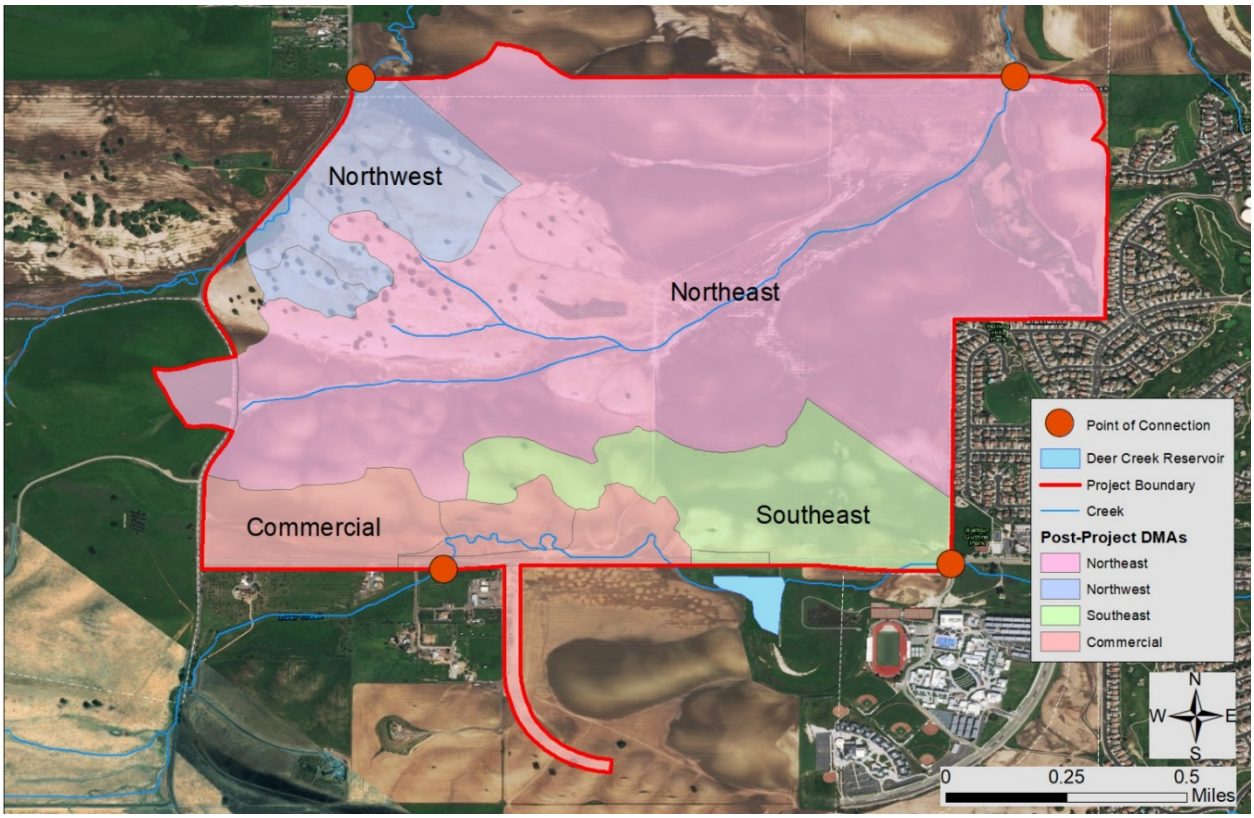



**Figure 2-5 Ultimate development post-project Drainage Management Areas (DMAs).**

**Table 2-4** summarizes key physical characteristics of each of the DMAs in the same order as that used in the earlier **Table 2-3**. The location and preliminary size of proposed stormwater basins can be seen on the Schematic Stormwater Management System exhibit prepared by Carlson, Barbee & Gibson, which is included as **Appendix B**.

**Table 2-4 Characteristics of the ultimate development post-project DMAs.**

| DMA | Drains to | Post-Project | |
|---|---|---|---|
| | | *Area (acres)* | *Impervious (%)* |
| Northeast | Unnamed Tributary of Sand Creek | 581 | 50 |
| Northwest | Horse Valley Creek | 74 | 60 |
| Southeast | Deer Creek | 96 | 75 |
| Commercial | Deer Creek | 90 | 25 |
| | ***Total*** | ***841*** | ***51*** |

There are several notable aspects of each of the post-project DMAs, including:

- *Northeast DMA*. The Northeast DMA will increase modestly in size to 581 acres from 562 acres in the pre-project condition, with the gain coming almost exclusively from areas that formerly drained to Horse Valley Creek. Preserved hillslope areas in within the drainage boundary will result in a relatively low post-project impervious cover of 50 percent.
- *Northwest DMA*. The Northwest DMA draining to Horse Valley Creek will see a marked reduction in drainage area, dropping to 74 acres from 92 acres in the pre-project case. There will be relatively less open space in this DMA, resulting in a post-project impervious cover of 60 percent.
- *Southeast DMA*. In the ultimate condition the Southeast DMA will increase in size form 74 acres in the pre-project to 96 total acres. The increase will be almost completely attributable to adjustments of the drainage boundary with the Commercial DMA, noting that both drain to Deer Creek. This portion of the Project will have the least open space area and will thus have the highest impervious cover at 75 percent.
- *Commercial DMA*. The Commercial DMA will be reduced in size from 114 acres pre-project to 90 acres post-project. This DMA will include much of the widening

of Balfour Road and the extension of American Avenue to the south.[6] Nonetheless, the large undeveloped areas proposed along Deer Creek will result low overall impervious cover of only 25 percent.

### *Phase 1 Drainage Management Areas*

Phase 1 is programmed to include the Southeast DMA and is illustrated in **Figure 2-6**.

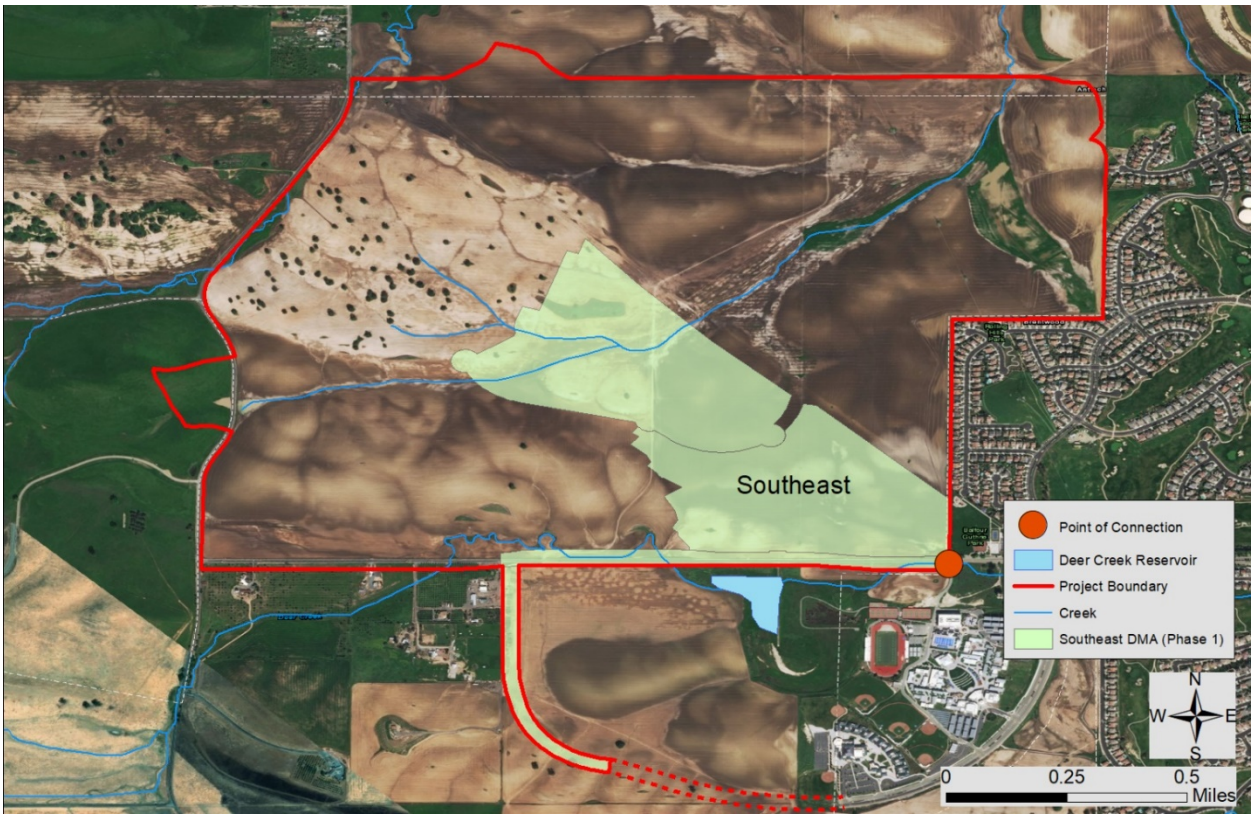



**Figure 2-6 Phase 1 post-project Drainage Management Areas (DMAs).**

A portion of the Phase 1 development will ultimately drain to the Northeast DMA, but the proposed Northeast stormwater basin and outfall to the unnamed tributary will not have been constructed yet. Therefore, the Phase 1 Southeast DMA will actually be larger than the ultimate condition. **Table 2-5** shows the proposed total area and impervious cover

[6] It is worth noting that the portion of the American Avenue improvements included in the Commercial DMA do not include all of the roadway extension to Heritage High School. This reflects the fact that there is a high point roughly midway along the extension, and runoff to the east of the high point will be routed to the existing American Avenue storm drain system that was sized in anticipation of the future connection.

for this interim condition. The total area is projected to be 166 acres, considerably larger than the 96 acres in the ultimate configuration.[7] This will require additional interim stormwater basin capacity in the southeast portion of the site to assure that there are no adverse impacts to Deer Creek during the interim configuration. Once the Northeast DMA stormwater infrastructure is in place as part of Phase 2, the upper Phase 1 storm drain lines will be tied into the former and the Southeast DMA will be reduced to its ultimate size, at which point the interim stormwater basin can be reconfigured to it final dimensions.

**Table 2-5 Characteristics of the Phase 1 post-project DMA.**

| | | Phase 1 | |
|---|---|---|---|
| **DMA** | **Drains to** | *Area (acres)* | *Impervious (%)* |
| Southeast | Deer Creek | 166 | 64 |
| | ***Total*** | ***166*** | ***64*** |

## 2.7 Local and Regional Flood Hazards

Local and regional flood hazards play an important role in framing the stormwater management approach, particularly with respect to peak flow rates from large storm events. Both Horse Valley Creek and Deer Creek have mapped approximate Special Flood Hazard Areas ("SFHAs"), more commonly known as 100-year floodplains. The SFHAs in both cases are designated as Zone A on the currently-effective Flood Insurance Rate Map prepared by the Federal Emergency Management Agency (FEMA) that cover the area.[8] This designation indicates that the 100-year flood boundaries are approximate only and that base flood elevations have not been determined through detailed study. The extents of the 100-year floodplains for the two creeks are shown in **Figure 2-7,** and illustrate several overbank flooding locations, with flood flows generally conveyed parallel to the channels.

[7] The extra drainage area that will flow to Deer Creek via the Southeast DMA will come exclusively from the unnamed tributary. Since the unnamed tributary watershed will be reduced in size and no developed area runoff will be routed to it, there are no anticipated impacts to water quality or need for peak flow controls for the unnamed tributary in Phase 1.

[8] FIRM Panels 06013CO335F and 06013CO345F, both with publication dates of June 16, 2009.

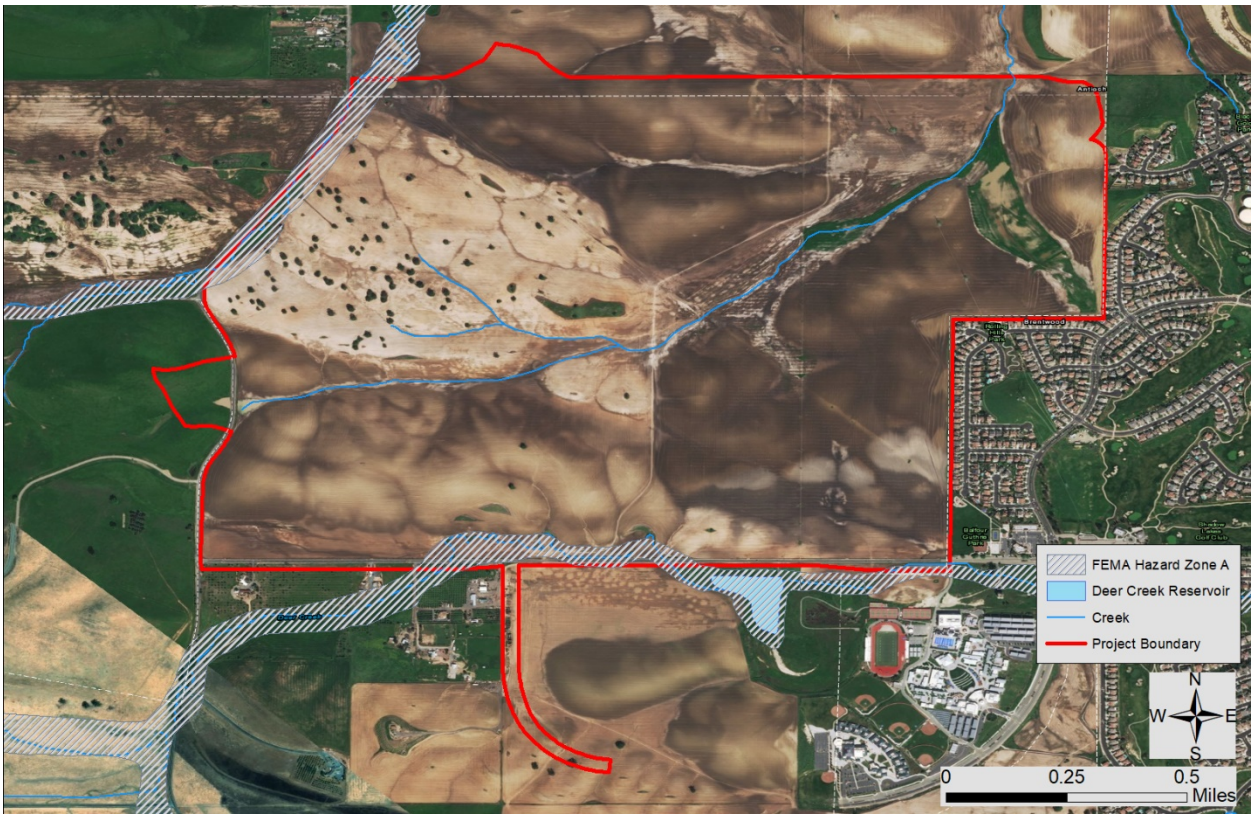



**Figure 2-7 Mapped FEMA flood hazard zones along the Deer Creek and Horse Valley Creek adjacent to the Project site.**

The lack of detailed study information also implies that FEMA has not identified base flood discharge values for either of the two creeks. Nonetheless, there are alternative sources for such information and example values are summarized in Table 2-5 as taken from the Federal Emergency Management Agency (FEMA) Flood Insurance Study (FIS) for Contra Costa County and incorporated areas and the United States Geological Survey (USGS) StreamStats software. The Project does not anticipate significant encroachments into mapped floodplain areas except for improvements related to Balfour Road and American Avenue along Deer Creek. Those encroachments will require analyses and hydraulic modeling consistent with the protocols of the National Flood Insurance Program to assess any impacts and assure that there are no increased risks to life or property due to the encroachments. Such analyses are typically handled in the form of a Conditional Letter of Map Revision that would be prepared in close cooperation with the City and with County Flood Control.

# 3 GROUNDWATER

A general understanding of groundwater conditions within the Project boundary is another important factor in framing the overall stormwater management strategy. There are two primary considerations in this regard: (1) characterizing how the increased impervious cover might impact groundwater recharge and (2) identifying whether stormwater infrastructure design and location should promote infiltration and/or avoid impairment of shallow groundwater resources.

Overall, the Project site is likely not conducive to aquifer recharge for two primary reasons. First, the soils are generally alluvial clays that have low infiltration capacities (**Figure 2-3**, **Appendix A**). For example, predominate soil types within the areas proposed for development such as the Pescadero clay loam, Altamont clay, and Altamont-Fontana complex all have limited saturated hydraulic conductivities well below 0.25 inches/hour. Higher infiltration soils, such as the Briones sandy loam underlay less than one-quarter of the site and even less of the proposed development area. In fact, the latter soil type is mapped as having a restrictive layer at depth of only a few feet that is characterized by conductivities of less than 0.4 inches/hour. Second, given the Mediterranean climate conditions of mild to warm weather and average yearly rainfall under 14 inches (**Figure 2-2**), most of the precipitation that does soak into the upper soil column transpires into the atmosphere rather than percolating into the deeper groundwater system (**Table 2-2**). Combined, these factors suggest that existing groundwater recharge at the site is low and is not subject to substantial alteration through the introduction of increased impervious cover. Although bioretention basins may provide opportunities for groundwater infiltration, basins should not be considered as primary recharge zones; most runoff will likely be metered out of the basins via outflow orifices.

# 4 CLIMATE CHANGE

In the current state of rapidly changing climate, patterns in precipitation, air temperatures, and water supplies have the potential to change in terms of quantity, magnitude, duration, timing, and departures from what has been thought of as "average" conditions in previous years and decades. For example, flood management infrastructure could also be affected as a result of potentially more frequent high magnitude events, even while average conditions may remain relatively stable.

Climate change projections associated with another development project (Ballman and Pretzlav, 2017) along the Bay-Delta found that general trends through 2035 indicate mean annual precipitation may increase slightly, with projected increases concentrated in the wet winter months of January, February, and March, and decreases in precipitation in spring and fall months. Warmer temperatures are projected across all months, with the largest increases in fall and winter months.

Considering the impacts of these projected changing climate conditions, it is important to note that the current 10- and 100-year design storms may not remain applicable over long-term time scales. Under potential climate change impacts, flood peaks may increase above those related to development only. This indicates the need to incorporate adaptive measures in the design of stormwater management infrastructure such that facilities can be readily modified, and operational performance maintained over the long-term. Examples in this regard include initial construction that includes side slopes and berm tops that can be reconfigured to provide additional storage capacity and outlet structures with control orifices that can be re-sized as needed.

One important aspect of climate change, sea level rise, is not a realistic concern at the Project site. As noted earlier, the lowest elevations at the site, along the unnamed tributary in the Northeast DMA are on the order of 160 feet, well above the highest planning guideline elevations suggested in the State of California Sea-Level Rise Guidance Update (2018). Increased flood risk due directly to elevated Delta flood elevations is not to be expected.

# 5 REGULATORY SETTING

The California State Water Resources Control Board (SWRCB or State Board) and nine Regional Water Quality Control Boards have the authority in California to protect and enhance water quality through their designation as lead agencies in implementing provisions of the Federal Clean Water Act, and those of the State's primary water-pollution control legislation, the Porter-Cologne Act. The Central Valley RWQCB ("RWQCB") Region 5 office provides guidance and regulates all aspects of water quality in streams and aquifers for watersheds draining to the Central Valley, through designation of beneficial uses, establishment of water-quality objectives, administration of the National Pollution Discharge Elimination System (NPDES) permit program for stormwater and construction site runoff, and 401 water-quality certification where development results in fill of jurisdictional wetlands or waters of the United States, under Section 404 of the Clean Water Act. The Project site is located within the jurisdiction of the Region 5 RWQCB.

## 5.1 California State Laws and Regulations

The California Municipal Storm Water Permitting Program regulates storm water discharges from municipal separate storm sewer systems (MS4s). MS4s are defined as a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains) owned or operated by a public body (e.g. city, county) designed or used to collect or convey stormwater, not a combined sewer, and not part of a publicly owned treatment works. Under the Phase 1 MS4 permit program, the RWQCB issued a Municipal Regional Stormwater National Pollution Discharge Elimination System (NPDES) Permit, Order R5-2010-0102, which regulates development within the eastern portions of Contra Costa County that drain to the Sacramento-San Joaquin Delta east of Suisun Bay. This permit recognizes impairments to receiving waters and prescribes compliance requirements for municipalities to avoid violations of water quality standards. Sand Creek is listed with seven impairments: chlorpyrifos, DDE, DDT, dieldrin, E. coli, salinity, and unknown toxicity. Deer Creek has no listed impairments.

The MRP imposes regulations and requirements that must be met for all new development projects, primarily through implementation of stormwater management strategies to enhance runoff water quality and assure that adverse impacts due to changes in the flow rates and durations of runoff are avoided. The Contra Costa County Clean Water Program has compiled a Stormwater C.3 Guidebook (CCCCWP, 2017;

hereafter "C.3 Guidebook") to help ensure that new development projects comply with the pertinent requirements.

## 5.2 Local Beneficial Uses

In addition to the NPDES permitting program, the RWQCB regulates water quality for the region in accordance with the Water Quality Control Plan or 'Basin Plan' (RWQCB, 2018). The Basin Plan presents the beneficial uses that the Regional Board has designated for local aquifers, streams, marshes, rivers, and the Delta as well as the water-quality objectives and criteria that must be met to protect these uses. The objectives, though occasionally numeric, are generally in narrative form and are to be applied to ensure that there is no degradation of the receiving waters and that the beneficial uses as defined are not impaired.

Multiple beneficial uses have been designated for Marsh Creek (to which Deer Creek and the Sand Creek tributaries drain), as well as for the Sacramento-San Joaquin Delta complex. Marsh Creek beneficial uses include warm freshwater habitat (WARM), wildlife habitat (WILD), preservation of rare and endangered species (RARE), and contact and non-contact water recreation (REC1 and REC2, both as potential).

Aquatic habitat beneficial uses are the most sensitive to potential impacts from development of the proposed Project. Pollution from driveways, roads, and parking lots, if not mitigated, could contribute petroleum products and heavy metals to storm runoff and degrade water quality downstream. Inappropriately used pesticides and fertilizers applied to residential and commercial landscaping could potentially be mobilized by rainfall and transported to Horse Valley Creek, Deer Creek, and Sand Creek, therefore affecting aquatic and terrestrial wildlife species that use the creeks and adjacent riparian zones.

## 5.3 Stormwater and Water Quality Requirements

The overarching objective of stormwater management requirements is to avoid impairment of downstream receiving waters by implementing comprehensive measures including site design, source control, and treatment control approaches. The MRP and C.3 Guidebook include the following conceptual strategies for stormwater treatment and water quality requirements:

1. Optimize the site layout by preserving natural drainage features and minimizing impervious surfaces.

2. Use pervious surfaces or retention surfaces, such as turf, gravel, or green roofs.
3. Disperse runoff from impervious to pervious surfaces.
4. Drain impervious surfaces to engineered integrated management practices (IMPs), typically bioretention facilities as well as flow-through planters.

Section C.3.d.i in the overarching Municipal Regional Permit ("MRP") requires that all detention/retention/water-quality systems be sized appropriately to treat storm-related runoff by meeting at least one of the following hydraulic sizing design criteria:

- Volume capacity: the volume of runoff produced from the calculated 24-hour, 85$^{th}$ percentile storm event using historical rainfall records, or achieve 80 percent or more capture of annual runoff estimated using historical rainfall records.
- Flow capacity: treatment of (a) 10 percent of the 50-year flow rate, or (b) the flow rate produced by a rain event equal to at least two times the 85$^{th}$ percentile hourly rainfall intensity for the Project area using historical records of hourly rainfall depths, or (c) the flow rate from a rain event equal to at least 0.2 inches per hour intensity.
- Combination flow and volume design basis: use a combination of flow and volume capacity sized to treat at least 80 percent of total runoff over the life of the project using local rainfall data.

## 5.4 Hydromodification Requirements

Hydromodification Management ("HM") requirements must be implemented for projects that create and/or replace one acre or more of impervious surface. The HM Standard is defined in the MRP and the C-3 Guidebook as:

- Increases in runoff flow and volume shall be managed so that post-project runoff does not exceed estimated pre-project rates and durations likely to cause increased potential for erosion of creek beds and banks, silt pollution generation, or other adverse impacts on beneficial uses due to increased erosive forces.

The default to achieve the above flow control standard is by managing post-project flows in the range from 10 percent of the pre-project 2-year peak flow (0.1Q2) up to the pre-project 10-year peak flow (Q10), with duration curve exceedances of no more than 10 percent over no more than 10 percent of the range of flows to control. HM compliance

can be achieved by using MRP and C.3 Guidebook design guidance to meet flow-control requirements as well as stormwater treatment requirements.

Bioretention facilities for stormwater quality and HM control are typically sized using the Integrated Management Practices (IMP) Calculator program provided by the Clean Water Program and that practice has been followed in preliminary sizing of the stormwater management facilities at the site.

# 6 STORMWATER MANAGEMENT OVERVIEW

## 6.1 Stormwater Management Opportunities and Constraints

Prior report sections have detailed multiple opportunities and constraints that range from overarching regulatory requirements that apply to all developments of similar size in the region to those quite specific and unique to the Vineyards at Deer Creek Project site. A brief summary of the opportunities and constraints unique to this site include the following:

### *Opportunities*

- The Project presents an opportunity to preserve and enhance sections of Deer Creek and Horse Valley Creek that have remained essentially natural streams to the present.
- Preservation of open space areas and inclusion of park areas will significantly limit the total amount of new impervious cover that will be constructed.
- The relief at the site generally allows stormwater runoff from the developed areas to be routed to, through, and away from treatment controls without pumping.
- The areas designated for the stormwater basins are large enough to accommodate stormwater management for water-quality treatment and detention/hydromodification control purposes, while still preserving an appropriate set-back distance from creek banks.
- New construction provides an opportunity for a comprehensive land use plan that clearly meets regulatory requirements, which would include state-of-the-art source control measures such as limiting the amount of directly connected impervious areas (DCIAs).
- The proposed widening of Balfour Road provides opportunities to replace existing, undersized culverts and avoid the overland flow issues that currently affect the site and adjacent properties.

### *Constraints*

- An 8.5-acre section of land to the west of the site along Deer Valley Road is not within the Project boundary but drains to the site. The Project will need to provide drainage for this off-site watershed area.
- Outflow from the Northeast, Northwest, and Commercial stormwater basins will each require a new outfall into their respective water bodies. These outfalls will

need to be constructed in an appropriate manner to assure that they do not impair existing creek functions and values.

- The low permeability soils at the site (all DMAs with the exception of some areas in the Northwest DMA) constitute a constraint in that stormwater management strategies cannot rely on infiltration as a water-quality and peak flow control measure.

## 6.2 Stormwater Management Approach

The purpose of a stormwater control plan is to demonstrate that the Project complies with all applicable requirements in the NPDES Permit, which include:

- minimizing imperviousness and reducing runoff,
- slowing runoff rates and retain or detain stormwater,
- incorporation of required source controls,
- treatment of stormwater prior to discharge from the site,
- control of runoff rates and durations as required, and
- providing for operation and maintenance of stormwater facilities.

These requirements, coupled with site condition opportunities and constraints, drive selection of strategies for managing runoff. The site design measures embodied in the Stormwater C.3 Guidebook require permitees to design facilities to evapotranspire, infiltrate, harvest/use, and/or biotreat storm water. Design elements that support these requirements include optimizing the site layout, using pervious surfaces where possible, dispersing runoff to slow flows, and when necessary routing runoff to engineered bioretention facilities for treatment. All these measures, including end-of-pipe facilities, are also optimized to control flow-duration for hydrograph modification management purposes and peak flow rates from large storms for flood control purposes.

# 7 WATER-QUALITY MANAGEMENT

Implementation of an effective water-quality management approach is a key component of the overall stormwater management strategy at the Project site. Successful water-quality programs are based on an understanding of existing conditions that leads to a comprehensive multi-pronged strategy for reducing pollutant loading to receiving waters.

## 7.1 Existing Water Quality Conditions

The most immediate water-quality concern with respect to the Project is to protect the functions and values of the aquatic resources in the area. Currently, there are no waterbody Category 5 303(d) listings for Deer Creek or Horse Valley Creek. However, it is important to consider the current listings and conditions of the downstream Sand Creek water body. There are seven waterbody Category 5 303(d) listings for Sand Creek (SFBRWQCB, 2017): chlorpyrifos, DDE, DDT, dieldrin, E. coli, salinity, and unknown toxicity. All source pollutants were added to the list in 2010. Category 5 waterbodies are those where at least one beneficial use is not supported and a TMDL (total maximum daily limit) is needed. TMDLs are a calculation of the maximum amount of pollution allowed to enter a waterbody and still meet water quality standards for that particular pollutant. The 303(d) list reports that a TMDL program for all source pollutants is expected to be complete by the United States Environmental Protection Agency by 2021. There are no 303(d) listings for Deer Creek.

## 7.2 Water-Quality Best Management Practices

In light of the opportunities and constraints that exist at the Project site, developing an effective best management practice ("BMP") framework requires implementing a number of strategies specific to the site conditions. The BMP framework will be based on a hierarchical approach advocated by stormwater quality regulators (e.g., see BASMAA, 1999). The hierarchical approach has the following levels:

- *Level I – Site Design.* One of the key elements of the stormwater strategy for the Project will be incorporating appropriate site design elements that enhance efforts to limit water-quality impacts. Properly implemented features in essence "set the stage" for an effective plan by establishing a land use pattern that limits the amount of DCIAs to the greatest extent practicable.

- *Level II – Source Control.* Another of the primary focuses of this plan is a strong and broad-based source control program. This approach capitalizes on the fact that it is generally more effective, both in impacts and costs, to prevent or limit constituents of concern from being released than it is to remove them from the environment once they have been mobilized (BASMAA, 1999).

- *Level III – Treatment Controls*. The term "treatment controls" refers to those BMPs that are designed to reduce constituents of concern once mobilized in stormwater runoff. Treatment controls are generally considered necessary BMPs since even the most environmentally-attuned site design and source control programs cannot guarantee that constituents of concern will not be mobilized from the site. In sites with low infiltration soils, such as the Project site, treatment controls will be an essential element in helping to mitigate for water-quality effects from development.

### 7.2.1 Site Design Elements

The primary goal of water-quality-sensitive site design is to limit the amount of DCIAs within the development envelope. Limiting DCIAs promotes infiltration, increases times of concentration within drainage areas, and reduces runoff volumes. Additionally, less impervious area generally leads to increased amounts of space that can be dedicated to landscaping and open space uses that limit the introduction of pollutants to the environment and can work to filter out pollutants that get mobilized.

Specific site design features that will limit DCIAs to the maximum extent practicable include the following:

- *Open space*. The Project will use a compact site design within the developed areas, freeing up substantial areas that will be preserved as park, trails, or open space. In fact, roughly 25 percent of the total property area will not be developed in any significant way.

- *Preservation of natural drainage.* Aside from the non-jurisdictional, unnamed tributary, no natural drainage features will be impacted by the project. The corridor of both Deer Creek and Horse Valley Creek will remain preserved.

- *Minimization of impervious surfaces*. Imperviousness is limited primarily through the clustering of development to reduce the overall developed area footprint and preservation of extensive open space areas.

- *Reduced street widths. The Project will use reduced street widths that will minimize impervious cover and allow more areas to be used for landscape and self-treating areas.*

### 7.2.2 Source Control Elements

The source control program will incorporate a number of elements:

- *Education and outreach.* The City of Brentwood has several outreach strategies designed to engage residents in the need to control non-point source pollution. One proven tactic is the marking of storm drain inlets and collection points to indicate that runoff can directly impact receiving waters. At this site, such markings may be along the lines of "Drains to Horse Valley Creek", "Drains to Deer Creek" or "Drains to Sand Creek".
- *Landscaping.* All landscaping will incorporate plant species appropriate for the site soils and climate. The Project will utilize drip irrigation to the maximum extent practicable.
- *Trash storage areas.* All trash storage areas in commercial areas will be covered to prevent run-on and contained to prevent off-site transport of pollutants and trash.

### 7.2.3 Treatment Control Elements

Treatment controls are generally considered necessary as a final element in water-quality protection even when the use of approved site planning and source control BMPs is maximized. Pollutants typically found in urban runoff include heavy metals (i.e., copper, lead, zinc, cadmium, mercury), oils and greases, nutrients (especially nitrogen and phosphorus), household and lawn-care chemicals (insecticides, herbicides, fungicides and rodenticides), and coliform bacteria.

Ultimately, BMPs must comply with the requirements of the MRP which regulates development within Contra Costa County. The site design measures included in the permit require permitees to design facilities to evapotranspire, infiltrate, harvest/use, and/or biotreat stormwater runoff. The clayey soils and low infiltration rates of the Project site make infiltration generally infeasible, therefore bioretention basins are proposed as the primary treatment mechanism. C.3 provisions in the MRP require bioretention facilities to include an 18-inch layer of select soil mix suitable to maintain infiltration rates of up to 5 inches per hour, underlain by a gravel sub-drain layer. Underdrains will be installed in

the gravel layer to facilitate percolation through the bioretention medium and to prevent long-duration ponding.

Preliminary sizes for bioretention basins were estimated using the sizing relationships embodied in the IMP Calculator program. In order to define the minimum bioretention area that would be required to meet the requirements of the MRP, multi-function stormwater basins were simulated for all DMAs, with the majority of the facilities using the "cistern + bioretention" configuration.[9] This configuration essentially represents a two-bay basin with an upstream detention bay separated by an internal berm from a downstream bioretention bay. Runoff is routed to the detention bay first from where it is released in a controlled manner to the bioretention bay for water-quality treatment through the required biosoil media.

As is typical of mixed-use developments, the required bioretention treatment area varies considerably across the various DMAs depending on factors such as total impervious cover and the adjunct capacity needed to provide flow-duration and peak flow control. Bioretention area requirements for the Project DMAs are summarized in **Table 7-1**. All facilities proposed are two-bay configurations.

As previously described, during Phase 1 development the Project will require the Southeast DMA's stormwater system to temporarily treat and control runoff from an additional 70 acres that will eventually drain to the Northeast DMA in Phase 2 (**Figure 2-6**). As such, the configuration of the Southeast DMA's bioretention system was designed to account for the additional water-quality treatment and flow control needed during Phase 1. Current planning for the site envisions continued use of the Phase 1 bioretention bay throughout ultimate development, in which case there will be considerably more provided bioretention capacity than would be required. That said, the need for a larger detention bay in the Phase 1 condition will be accommodated by constructing an interim, auxiliary basin for Phase 1. The auxiliary detention basin would be removed when the Phase 2 drainage improvements are constructed.

[9] Final design of various components within the planning area may well include "head-of-pipe" LID measures, which may or may not provide hydromodification control in addition to water-quality treatment. In those cases, bioretention surface area may be as large or larger than 4 percent of the contributing directly-connected impervious area. The analysis and modeling presented herein is intended to identify the minimum bioretention area that would be needed.

## Table 7-1 Bioretention requirements for the Project DMAs

| DMA | Area *(acres)* | Impervious *(%)* | Bioretention Area *(square feet)* |
|---|---|---|---|
| Northeast | 581 | 50 | 142,000 |
| Northwest | 74 | 60 | 23,800 |
| Southeast [1)] | 96 | 75 | 44,500 |
| Commercial | 90 | 25 | 18,300 |
| **Total** | 841 | 51 | 228,600 |

1) The bioretention area for the Southeast DMA was designed to treat the additional 70 acres of runoff from Phase 1.

# 8 HYDROLOGIC MODELING METHODOLOGY

Preliminary sizing of the stormwater management facilities necessary to meet the mitigation and performance objectives was derived through an iterative set of hydrologic model builds and model runs. Work progressed systematically beginning with delineation and characterization of pre-project DMAs to set up existing conditions models. With pre-project conditions quantified, modeling work shifted to defining and parameterizing post-project DMAs based on the latest land plans. Initial sizing of the facilities for each DMA with proposed development was completed using the IMP Calculator in treatment and flow control mode. The initial IMP Calculator results were then used as the starting point of basin sizes for more refined hydrologic modeling.

Final preliminary sizing recommendations involved iterative hydrologic model runs using two model platforms. The use of multiple platforms allowed for separate assessment of compliance with hydromodification management flow-duration criteria (control range from one-tenth of the 2-year flow to the 10-year flow) and peak flow management criteria (control range from the 10-year flood up to the 100-year flood event). Modeling of peak flow events was carried out using the U.S. Army Corps of Engineers HEC-HMS platform (version 4.3), strictly following the modeling guidance from the Contra Costa County Flood Control and Water Conservation District ("Flood Control").

Points of comparison to assess compliance with mitigation objectives for the Project DMAs were set at each of the four existing connection points (**Figure 2-5**). The use of these points of comparison allowed for a direct assessment of the efficacy of the proposed flow-duration and peak flow control measures.

## 8.1 Pre-Project Hydrologic Parameters

The pre-project input hydrologic parameters for the Project DMAs are summarized in **Table 8-1**.

**Table 8-1 Pre-project hydrologic modeling parameters for the Project DMAs.**

| DMA | Total Area *(acres)* | MAP *(inches)* | Loss Rate *(inches/hour)* | Lag Time *(hours)* |
|---|---|---|---|---|
| Northeast | 562 | 13.75 | 0.17 | 0.82 |
| Northwest | 92 | 13.75 | 0.18 | 0.37 |
| Southeast | 74 | 13.75 | 0.17 | 0.30 |
| Commercial | 114 | 13.75 | 0.16 | 0.69 |

The parameterization followed Flood Control guidelines throughout, with the following additional observations:

- *Mean annual precipitation ("MAP")*. Reference mean annual precipitation (MAP) was averaged over the project site from the isohyetal mapping prepared by flood control (**Figure 2-2**). MAP at the Project site ranged from 13.25 inches to 14.25 inches with an average of 13.75 inches.
- *Loss rate*. Precipitation losses were accounted for using constant loss rates derived by weighting on the basis of percent impervious cover. All DMAs except for the Northwest are predominated by Hydrologic Soil Group C and C/D soils with the Southeast and Commercial DMAs containing about 3percent impervious cover. DMAs with C and C/D soils were given a loss rate of 0.17 inches/hour, and impervious area given a value of 0.00 inches/hour (no infiltration). The Northwest DMA is predominated by Hydrologic Soil Group A and was given a loss rate of 0.18 inches/hour with no impervious cover. The loss rate for the pre-project DMAs areas ranged from a low of 0.16 inches/hour (Commercial DMA) to a high of 0.18 (Northwest DMA).
- *Lag time*. Lag time calculations followed Flood Control protocols using longest flow path, flow path length from the DMA centroid, and overall slope. Lag times ranged from a low of 0.30 hours for the smallest DMA to a maximum of 0.82 hours for the largest DMA with longest flow path.
- *Design storms*. For peak flow modeling, runs were completed for the 10- and 100-year, 24-hour storm events. Total rainfall for the 10-year, 24-hour event was 2.81 inches. The equivalent values for the 100-year, 24-hour storm was 4.20 inches.

## 8.2 Post-Project Hydrologic Parameters

The post-project input hydrologic parameters for the Project DMAs are summarized in **Table 8-2.** Development of the respective parameters was analogous to that for the pre-project conditions.

**Table 8-2 Post-project hydrologic modeling parameters for the Project DMAs.**

| DMA | Total Area *(acres)* | MAP *(inches)* | Loss Rate *(inches/hour)* | Lag Time *(hours)* |
|---|---|---|---|---|
| Northeast | 581 | 13.75 | 0.09 | 0.48 |
| Northwest | 74 | 13.75 | 0.07 | 0.28 |
| Southeast | 96 | 13.75 | 0.04 | 0.25 |
| Commercial | 90 | 13.75 | 0.13 | 0.29 |

## 8.3 Phase 1 Hydrologic Parameters

The Phase 1 project input hydrologic parameters for the Project DMAs are summarized in **Table 8-2.** Similar to the post-project DMAs, development of the respective Phase 1 parameters was analogous to methodologies for the pre-project conditions.

**Table 8-3 Phase 1 hydrologic modeling parameters for the Southeast DMA.**

| DMA | Total Area *(acres)* | MAP *(inches)* | Loss Rate *(inches/hour)* | Lag Time *(hours)* |
|---|---|---|---|---|
| Southeast | 166 | 13.75 | 0.06 | 0.40 |

# 9 HYDROLOGIC MODELING RESULTS

## 9.1 Post Project Watersheds

The modeling results for the Post Project DMAs in the project watersheds that are impacted by proposed development are summarized in **Table 9-1**.

**Table 9-1 Peak flow modeling results for stormwater basins in the Project DMAs**

| | 10-year, 24-hour Storm | | | 100-year, 24-hour Storm | | |
|---|---|---|---|---|---|---|
| DMA | Inflow (cfs) | Outflow (cfs) | Peak Storage (ac-ft) | Inflow (cfs) | Outflow (cfs) | Peak Storage (ac-ft) |
| Northeast | 319 | 20 | 56.2 | 566 | 91 | 78.7 |
| Northwest | 64 | 30 | 7.5 | 101 | 59 | 8.8 |
| Southeast | 91 | 33 | 13.0 | 137 | 64 | 15.3 |
| Commercial | 59 | 21 | 8.0 | 111 | 56 | 9.3 |

Reductions in peak flow rates within each DMA are generally quite large, and particularly so for the 10-year design storm. This result reflects the large storage capacity included in each stormwater basin (relative to the contributing drainage areas), which is driven largely by the need for flow-duration control to meet hydromodification management requirements. The large available storage volumes can be optimized with respect to high flow outlets to give exceptional peak flow control for large design storms (10-year event and larger).

The large storage capacity and ability to optimize basin performance for flood control design storms leads to substantial decreases in predicted peak flow rates at the four connection points to the creek outfalls and existing City storm drain system (**Table 9-2**).

Each of the basins will be equipped with creek outfalls that will be specifically designed to work with the restoration plan for the creek corridor. These designs will include an outlet structure with energy dissipation flowing into a swale feature on the restored floodplain.

**Table 9-2 Predicted pre- and post-project peak flow rates for Post-Project DMAs.**

| | 10-year, 24-hour Storm | | 100-year, 24-hour Storm | |
|---|---|---|---|---|
| DMA | Pre-Project *(cfs)* | Post-Project *(cfs)* | Pre-Project *(cfs)* | Post-Project *(cfs)* |
| Northeast | 171 | 20 | 371 | 91 |
| Northwest | 41 | 30 | 89 | 59 |
| Southeast | 42 | 33 | 83 | 64 |
| Commercial | 47 | 21 | 91 | 56 |

As shown in **Table 9-2**, the reductions in peak flow is substantial. This reflects the fact that the existing stormwater control basin in each DMA is well optimized for peak flow control, making it particularly difficult to achieve substantial reductions above and beyond those already present.

## 9.2 Phase 1 Watershed

The Phase 1 watershed has only one DMA that is impacted by development and was modeled using the same multi-function two-bay stormwater basin with the addition of an auxiliary detention facility. The runoff flow produced by the additional area from Phase 1 will be regulated with an auxiliary detention basin ("Southeast Auxiliary") located directly upstream of the main cistern-bioretention stormwater system from the Post-Project configuration. As shown in Table 9-3, runoff from the Phase 1 watershed is collected as inflow to the Southeast Auxiliary basin where it is discharged at a regulated rate into the Southeast Main detention basin (cistern). From then, the system operates in similar fashion as the Post-Project Southeast DMA configuration and outlets from the bioretention facility after being treated for water quality.

**Table 9-3 Peak flow modeling results for the Phase 1 Southeast DMA's stormwater basins.**

| | 10-year, 24-hour Storm | | | 100-year, 24-hour Storm | | |
|---|---|---|---|---|---|---|
| Basin | Inflow (cfs) | Outflow (cfs) | Peak Storage (ac-ft) | Inflow (cfs) | Outflow (cfs) | Peak Storage (ac-ft) |
| Southeast Auxiliary | 120 | 33 | 10.2 | 191 | 50 | 14.0 |
| Southeast Main [1)] | 33 | 37 | 13.1 | 50 | 76 | 16.0 |

The combined effect of the multiple basins is summarized in **Table 9-4**, which looks at only one point of comparison at the Southeast DMA.

**Table 9-4 Predicted pre- and post-project peak flow rates for the Phase 1 Southeast DMA.**

| | 10-year, 24-hour Storm | | 100-year, 24-hour Storm | |
|---|---|---|---|---|
| Point of Comparison | Pre-Project (cfs) | Phase 1 (cfs) | Pre-Project (cfs) | Post-Project (cfs) |
| Southeast | 42 | 37 | 83 | 76 |

It is important to note that the pre-project runoff values in **Table 9-4** are representative of the 74-acre Southeast watershed. The predicted runoff values show that although the Southeast watershed will increase by over twice its original size during Phase 1, post-project flows will still be well controlled under the existing stormwater basin configuration and with the addition of an auxiliary detention basin.

# 10 LIMITATIONS

This report was prepared in general accordance with the accepted standards of practice in surface-water hydrology and stormwater management existing in Northern California for projects of similar scale at the time the investigations were performed. No other warranties, expressed or implied, are made.

Concepts, findings and interpretations contained in this report are intended for the exclusive use of the Project proponents, at the site and for the purposes discussed therein, under the conditions presently prevailing except where noted otherwise. Their use beyond the boundaries of the site could lead to environmental or structural damage, and/or to noncompliance with policies, regulations or permits. They should not be used for other purposes without great care, updating, review of analytical methods used, and consultation with Balance staff familiar with the Project site.

As is customary, we note that readers should recognize that the interpretation and evaluation of factors affecting the hydrologic context of any site is a difficult and inexact art. Judgments leading to conclusions and recommendations are generally made with an incomplete knowledge of the conditions present. More extensive or extended studies, including hydrologic baseline monitoring, can reduce the inherent uncertainties associated with such studies. We note that many factors affect local and regional issues related to the management of stormwater from both a quantity and quality perspective. We have used standard environmental information -- such as rainfall, topographic mapping, and soil mapping -- in our analyses and approaches without verification or modification, in conformance with local custom. New information or changes in regulatory guidance could influence the plans or recommendations, perhaps fundamentally. As updated information becomes available, the interpretations and recommendations contained in this report may warrant change.

To aid in revisions, we ask that readers or reviewers who have additional pertinent information of new plans, data or other information, who have observed changed conditions, or who may note material errors should contact us with their findings at the earliest possible date, so that timely changes may be made.

# 11 REFERENCES

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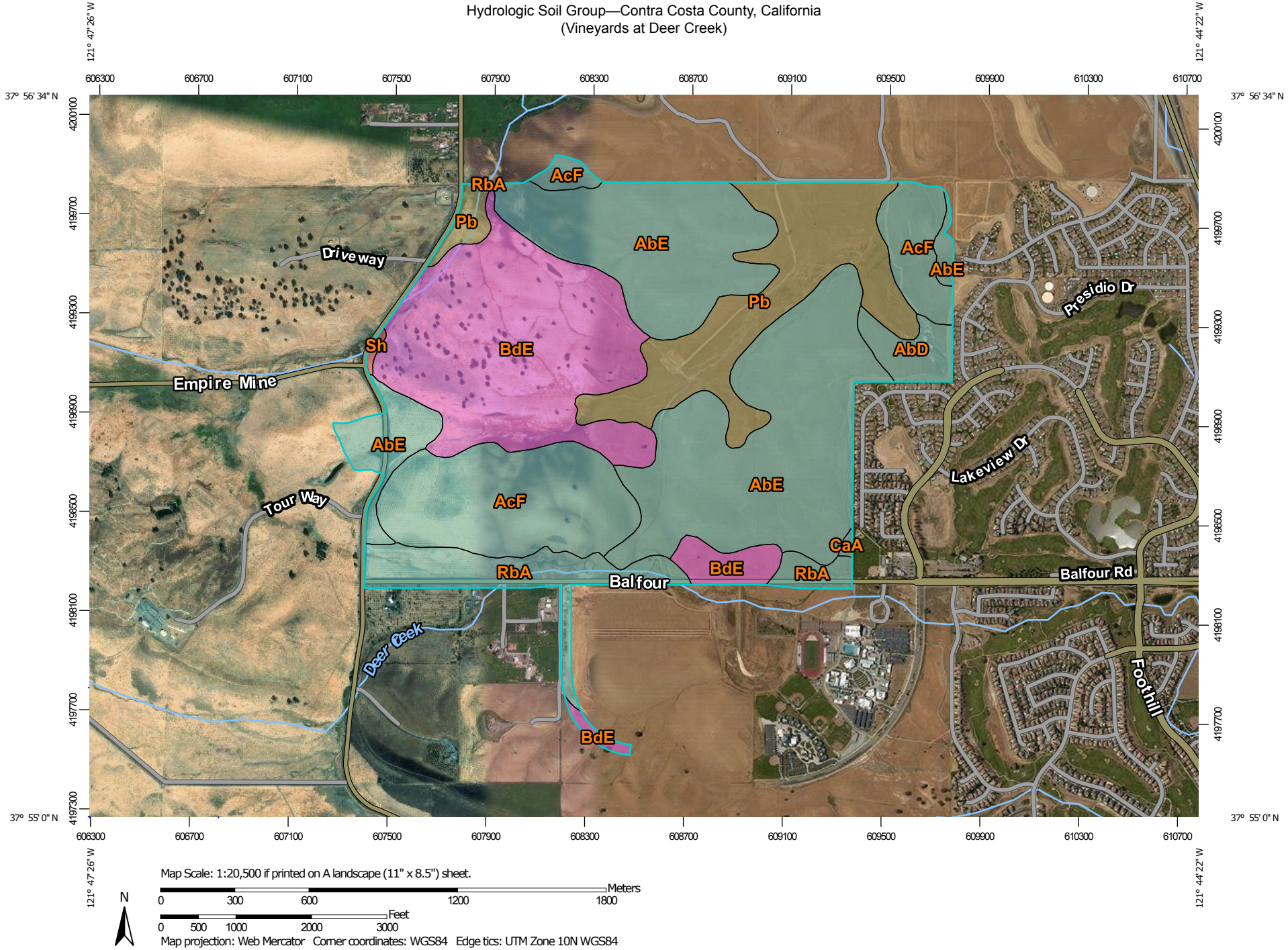
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# APPENDICES

# APPENDIX A

## Natural Resources Conservation Services, Web Soil Survey Data for the Vineyards at Deer Creek Project Area

Hydrologic Soil Group—Contra Costa County, California
(Vineyards at Deer Creek)




Map Scale: 1:20,500 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 300 600 1200 1800

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

## MAP LEGEND

**Area of Interest (AOI)**

Area of Interest (AOI)

**Soils**

**Soil Rating Polygons**

A
A/D
B
B/D
C
C/D
D
Not rated or not available

**Soil Rating Lines**

A
A/D
B
B/D
C
C/D
D
Not rated or not available

**Soil Rating Points**

A
A/D
B
B/D
C
C/D
D
Not rated or not available

**Water Features**

Streams and Canals

**Transportation**

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

**Background**

Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Contra Costa County, California
Survey Area Data: Version 15, Sep 14, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 12, 2010—Mar 16, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

# Hydrologic Soil Group

| Map unit symbol | Map unit name | Rating | Acres in AOI | Percent of AOI |
|---|---|---|---|---|
| AbD | Altamont clay, 9 to 15 percent slopes, MLRA 15 | C | 18.1 | 2.1% |
| AbE | Altamont clay, 15 to 30 percent slopes, MLRA 15 | C | 318.0 | 37.4% |
| AcF | Altamont-Fontana complex, 30 to 50 percent slopes | C | 133.7 | 15.7% |
| BdE | Briones loamy sand, 5 to 30 percent slopes | A | 200.0 | 23.5% |
| CaA | Capay clay, 0 to 3 percent slopes, MLRA 17 | C | 1.0 | 0.1% |
| Pb | Pescadero clay loam, 0 to 6 percent slopes, MLRA 14 | C/D | 121.2 | 14.2% |
| RbA | Rincon clay loam, 0 to 2 percent slopes, MLRA 14 | C | 57.5 | 6.8% |
| Sh | Solano loam | D | 1.4 | 0.2% |
| **Totals for Area of Interest** | | | **850.9** | **100.0%** |

## Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

## Rating Options

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff: None Specified*

*Tie-break Rule:* Higher

# APPENDIX B

## Schematic Stormwater Management System Exhibit

CITY OF ANTIOCH

ALBERS WEST

ALBERS EAST

GINOCHIO SOUTH

GINOCHIO WEST

NORTHWEST BASIN

NORTHEAST BASIN

DEER VALLEY ROAD

PHASE 1

PHASE 2

PHASE 3

PHASE 4

PHASE 5

SD

SOUTHEAST BASIN

BASIN DISCHARGES TO EXISTING CULVERT

EXISTING CULVERT

WEST COUNTRY CLUB DRIVE

EBPRD

SMITH

BALFOUR ROAD

AMERICAN AVENUE

| WATER SHED | SHED AREA |
|---|---|
| SOUTHEAST BASIN | 146± AC |
| TOTAL | 146± AC |

LEGEND

SOUTHEAST BASIN WATER SHED

SD — PROPOSED STORM DRAIN

EXISTING DRAINAGE SHED BOUNDARY

# PRELIMINARY
## PHASE 1 STORM DRAIN EXHIBIT
# VINEYARDS AT DEER CREEK

CITY OF BRENTWOOD CONTRA COSTA COUNTY CALIFORNIA

0' 200' 600' 800'

SCALE: 1" = 200'

DATE: JANUARY 9, 2019

cbg CIVIL ENGINEERS • SURVEYORS • PLANNERS
SAN RAMON • (925) 866-0322
SACRAMENTO • (916) 375-1877
WWW.CBANDG.COM

F:\974974-70\ACAD\EXHIBITS\EXH3-ER_PRELIMINARY PHASING_STORM DRAIN PHASE 1.DWG

10/2/2019 8:51 AM

CITY OF ANTIOCH

ALBERS WEST

ALBERS EAST

GINOCHIO WEST

GINOCHIO SOUTH

BASIN DISCHARGES TO EXISTING CHANNEL

BASIN DISCHARGES TO EXISTING CHANNEL

NORTHWEST BASIN

NORTHEAST BASIN

SOUTHEAST BASIN

COMMERCIAL BASIN

DEER VALLEY ROAD

PHASE 1

PHASE 2

PHASE 3

PHASE 4

PHASE 5

SD

DISCONNECT PIPE TO SOUTH AND RE-ROUTE STORM DRAIN TO NORTHEAST BASIN

POTENTIAL BASIN LOCATION

POTENTIAL BASIN LOCATION

POTENTIAL BIO RETENTION AREAS IN MEDIAN, TYP

REPLACE/EXTEND EXISTING CULVERT

REPLACE/EXTEND EXISTING CULVERT

DEER CREEK

BASIN DISCHARGES TO EXISTING CULVERT

EXISTING DUAL 30" SD

DEER CREEK

BALFOUR ROAD

AMERICAN AVENUE

CANMORE CT.

WEST COUNTRY CLUB DRIVE

EBPRD

SMITH

SMITH

EBPRD

CCC BASIN

## LEGEND

- NORTHWEST BASIN WATER SHED
- NORTHEAST BASIN WATER SHED
- SOUTHEAST BASIN WATER SHED
- COMMERCIAL BASIN WATER SHED
- SD — PROPOSED STORM DRAIN
- EXISTING DRAINAGE SHED BOUNDARY

| WATER SHED | SHED AREA |
|---|---|
| NORTHWEST BASIN | 74± AC |
| NORTHEAST BASIN | 581± AC |
| SOUTHEAST BASIN | 96± AC |
| COMMERCIAL BASIN | 90± AC |
| TOTAL | 841± AC |

# PRELIMINARY
# MASTER STORM DRAIN PHASING EXHIBIT
# VINEYARDS AT DEER CREEK

CITY OF BRENTWOOD CONTRA COSTA COUNTY CALIFORNIA

0' 200' 600' 800'

SCALE: 1" = 200'

DATE: MARCH 6, 2019

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SHEET 1 OF 1

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# APPENDIX C

## Contra Costa County C-3 Guidebook Excerpt, Table 3-8

TABLE 3-8. NON-LID TREATMENT SYSTEMS may be allowed in these "Special Projects," subject to a demonstration of the infeasibility of using 100% LID and local staff review and approval.
Note: This table is a summary only. Consult with local staff regarding applicability to your project.

| *Category* | *Impervious Area* | *Project Characteristics* | *Criteria (Acreage refers to total site acreage)* | *LID Credit* | *Comments* |
|---|---|---|---|---|---|
| **A** Lot Line to Lot Line | X ≤ ½ Ac | Urban/Pedestrian design[1] in Business/ Downtown Districts[1] | No density criterion | 100% | Zero surface parking[1] ≥ 85% Site Coverage[1] |
| **B** High Density | ½ Ac ≤ X ≤ 2 Ac | Urban/Pedestrian design[1] in Business/ Downtown Districts[2] | Floor Area Ratio[1] (FAR) ≥ 2:1; OR for Residential (Res) projects, ≥ 50 Dwelling Units (DU)/Acre[1]; OR either for mixed-use projects. | 50% | Zero surface parking[3] ≥ 85% Site Coverage[4] |
| | | | FAR ≥ 3:1; OR Res ≥ 75 DU/Acre | 75% | |
| | | | FAR ≥ 4:1; OR Res ≥ 100 DU/Acre | 100% | |
| **C** Transit Oriented | No limit | TOD characteristics Non-auto-use project FAR ≥ 2:1 OR Res ≥ 25 DU/Ac | *Location Credits (count only one)* | | |
| | | | within ¼ mi of transit hub[1] | 50% | 50%+ of site w/in distance |
| | | | within ½ mi of transit hub[7] | 25% | |
| | | | within a Priority Development Area | 25% | 100% of site w/in PDA |
| | | | *Density/FAR Credits* | | |
| | | | FAR ≥ 2:1; OR Res ≥ 30 DU/Acre | 10% | |
| | | | FAR ≥ 4:1; OR Res ≥ 60 DU/Acre | 20% | |
| | | | FAR ≥ 6:1; OR Res ≥ 100 DU/Acre | 30% | |
| | | | *Minimized Parking Credits* | | |
| | | | ≤ 10% at-grade surface parking | 10% | Surface parking uses LID |
| | | | Zero surface parking[3] | 20% | |

[1] Built as part of a municipality's stated objective to preserve or enhance a pedestrian-oriented type of urban design.

[2] Located in a municipality's designated central business district, downtown core area or downtown core zoning district, neighborhood business district or comparable pedestrian-oriented commercial district, or historic preservation site and/or district.

[3] Incidental parking allowed: surface parking required for emergency vehicle access, ADA accessibility, and passenger and freight loading zones.

[4] Remaining portion to be used for safety access, parking structure entrances, trash and recycling service, utility access, pedestrian connections and public uses.

[5] Floor Area Ratio (FAR) is the ratio of total floor areas on all floors of all buildings at a project site (except structures, floors, or floor areas dedicated to parking) to the total project site area.

[6] Gross Density (DU/Acre) is the total number of residential units divided by the acreage of the entire site area, including land occupied by public ROW, recreational, civic, commercial, and other non-residential uses.

[7] Transit hub is a rail, light rail, or commuter rail station, or bus transfer station served by 3 or more bus routes. A bus stop with no supporting services does not qualify. A planned transit hub is a station on the Metropolitan Transportation Commission's Regional Transit Expansion Program's list.

# Appendix I

ENNIS CONSULTING

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April 26, 2019

Andrea Bellanca, PE
Carlson, Barbee & Gibson, Inc.
2633 Camino Ramon, Ste. 350
San Ramon, CA 94583

**Water Distribution System Analysis - The Vineyards at Deer Creek**

Ennis Consulting has been retained your office to determine the water system demands for the subject development and to ascertain what, if any, master plan improvements would be required as a result of construction of the new master plan area.

Background

According to the information provided by your office and attached herein as Figure 1, it is the intent of the developer(s) to construct a new, 815 acre master planned community consisting of 555 acres of low density residential comprising 2,400 units, 15 acres of a community recreation center and 20 acres of commercial/civic area along with 225 acres of open space. As reference, the 2015 Urban Water Management Plan prepared by Brown and Caldwell designated the project site as 'Agricultural'; however, the 2017 Water Master Plan prepared by Ennis Consulting modeled infrastructure for 'SPA-3' as provided by the City of Brentwood planning department. The land use equivalent for SPA-3 was modeled as having an average day water demand of 0.815 million gallons and a maximum day water demand of 1.467 million gallons as shown is Table 1.

**The Vineyards**
**General Plan Land Use**
**Water System Demand - Full Build Out**

| Use Type | Description | Acres | Density (units/acre) | Water Duty (gpd/unit) | Water Duty (gpd/acre) | Water Duty (mgd/acre) | Water Duty (gpm/acre) | Average Day Demand (mg) | Max. Day Demand (mg) | Min. Day Demand (mg) |
|---|---|---|---|---|---|---|---|---|---|---|
| SPA 3 | Special Planning Area #3 | 815 | 4 | 250 | 1000 | 0.0010 | 0.69 | 0.815 | 1.467 | 0.408 |
| | | | | | | | **MGD** | **0.815** | **1.467** | **0.408** |
| | | | | | | | **GPM** | **566** | **1,019** | **283** |

***Table 1***

The development is expected to occur in five (5) distinct development phases as provided in Figure 2. As requested, a separate hydraulic modeling scenario was conducted at each development phase in order to ascertain which master planned facilities would be required at each milestone of construction, particularly in compliance with the California Environmental Quality Act (CEQA) for the mitigation of development impacts.

As shown in Figure 3, the vast majority of the Vineyards development will be built within Zone 2, with a portion being pumped to Zone 3 by a new Pump Station 3.4. The Vineyards master plan calls for a new Pump Station 3.4 to be constructed next to a new Reservoir 2.4 located in the southwest quadrant of the new development area. The new Pump Station 3.4 and Reservoir 2.4 were previously identified in the City of Brentwood Water Master plan as provided by Ennis Consulting.

All modeling scenarios for future phases of the Vineyards development have been conducted with maximum day demands.

Existing System Infrastructure

As discussed in the 2017 Water Distribution Master Plan conducted by Ennis Consulting, the existing City of Brentwood water distribution system has a lack of adequate interconnection between and across Zone 2, primarily in conveying water between the southern region around Reservoir 2.3 and the more middle/northern region around Reservoir 2.1.

One immediate remedy to this lack of interconnection is the construction of a 16" water distribution main within the future John Muir Parkway. It is understood, via conversations with City Staff, that this transmission main will be built within the next 3 to 5 years. Therefore, and for the sake of these analyses, all modeling of future phases of the Vineyards development have been made with the presence of this transmission main. If this link has not been constructed by the time construction starts on Phase 1 of the Vineyards project, then the project shall be responsible for the construction and connection of the 16" water main in John Muir Parkway to Foothill Drive (approx. 700 lf).

Another matter regarding the lack of Zone 2 interconnection is the location of Pump Station 2.3 and the resulting behavior of Reservoir 2.3. Pump Station 2.3 has more than adequate pumping capacity; however, Reservoir 2.3 will fill at a quicker rate and maintain a higher water level than Reservoir 2.1, resulting in the under-utilization of Pump Station 2.3. As a review of the City of Brentwood water distribution system illustrates, the majority of system demands within Zone 2 are more in the northern and central regions of this zone and hence, Pump Station 2.3 does not have the opportunity to carry more of the pumping load due to piping friction losses and the lack of interconnection across the zone.

The reason for providing the previous information becomes more evident with the phasing and construction of the Vineyards development, which is being constructed more in the central and northern region of Zone 2 and not in proximity to Pump Station 2.3 and the southern region around Reservoir 2.3.

Water Generation Rates

Table 2 shows the anticipated water demands for each planned land use within the proposed Vineyards development. Water duties were taken directly from the 2017 Water Master Plan for each respective land use. The original land use within the former SPA 3 had a much lower water duty as the city was anticipating a more clustered, high density development with very little landscaping requirements. The new Vineyards proposal is to do more of a mass grading development with low density housing and commensurate landscaping, thus increasing the water duty on a per unit basis.

**The Vineyards**
**General Plan Land Use**
**Water System Demand - Full Build Out**

| Use Type | Description | Acres | Density (units/acre) | Water Duty (gpd/unit) | Water Duty (gpd/acre) | Water Duty (mgd/acre) | Water Duty (gpm/acre) | Average Day Demand (mg) | Max. Day Demand (mg) | Min. Day Demand (mg) |
|---|---|---|---|---|---|---|---|---|---|---|
| PF | Public Facility | 15 | | | 1000 | 0.0010 | 0.69 | 0.015 | 0.027 | 0.008 |
| RC | Commercial - Regional | 20 | | | 2000 | 0.0020 | 1.39 | 0.040 | 0.072 | 0.020 |
| R-LD | Residential - Low Density | 555 | 4.32 | 590 | 2548.8 | 0.0025 | 1.77 | 1.415 | 2.546 | 0.707 |
| **Total** | | **590** | | | | | **MGD** | **1.470** | **2.645** | **0.735** |
| | | | | | | | **GPM** | **1,021** | **1,837** | **510** |

***Table 2***

The data indicate that the Vineyards development will require approximately 1.47 million gallons of potable water on an average day and 2.65 million gallons on a maximum day, which are approximately 80% more than the water demands modeled in the 2017 water master plan, due primarily to the change 'water duty' for differing land use types. The maximum day pumping rate is expected to be approximately 1,837 gpm with a peak hour pumping rate requirement approximating 3,000 gpm.

Vineyards - Phase 1 Analysis

An analysis of the Phase 1 – Vineyard development shows that no significant impacts occur and that the existing Zone 2 system can accommodate this development phase. Figure 4 has been provided to show the behavior of Reservoirs 2.1 and 2.2 and Reservoir 2.3 with the addition of Phase 1.

Vineyard - Phase 2 Analysis

An analysis of the Phase 2 – Vineyard development shows that no significant impacts occur and that the existing Zone 2 system can accommodate this development phase along with the Phase 1 development. However, the data do show that Pump Station 2.1 and Pump Station 2.2 would be running nearly full time during consecutive maximum day events in order satisfy the demands from the full construction of Phases 1 and 2. Figure 5 has been provided to show the behavior of Reservoirs 2.1 and 2.2 and Reservoir 2.3 with the addition of the addition of the development phase.

Vineyard - Phase 3 Analysis

Figure 6 illustrates the decaying nature of Reservoir 2.1 during a series of maximum day events as there is insufficient pumping capacity within Zone 2 which would allow for the adequate filling of this reservoir. While the tank system could reasonably accommodate such a condition, the larger concern for the City of Brentwood would an emergency condition at either Pump Station 2.1 or Pump Station 2.2. Therefore, the CEQA recommendation is as follows:

> ***Prior to the first building permit being authorized within Phase 3 of the Vineyard development, the City of Brentwood shall have under contract, the design and construction of Pump Station 2.4 which has been master planned at or near the intersection of San Jose and St. Regis. Prior to the issuance of the 50% permit threshold of the build-out of Phase 3 of the Vineyard development, Pump Station 2.4 shall become operational.***

Vineyard - Phase 4+5 Analysis

Figure 7 has been provided to illustrate what would happen if all of Phase 4 and Phase 5 of the Vineyards development were constructed in the absence of Pump Station 2.4. Reservoirs 2.1 and 2.2 and the new Reservoir 2.4 could not be adequately filled and Pump Stations 2.1 and 2.2 would operate continuously.

As a remedy to this condition, Figure 8 illustrates the operational behavior of these tanks with the addition of Pump Station 2.4.

Future + Project Analysis

As a final modeling condition, the entirety of the proposed Vineyards development was modeled on top of the full build out of the City of Brentwood General Plan. As shown in Table 3 which was included in the 2017 Water Master Plan, the future City of Brentwood will require 30.43 million gallons a day during a maximum day demand.

**City of Brentwood**
**General Plan Land Use**
**Water System Demand - Full Build Out**

| Use Type | Description | Acres | Density (units/acre) | Water Duty (gpd/unit) | Water Duty (gpd/acre) | Water Duty (mgd/acre) | Water Duty (gpm/acre) | Average Day Demand (mg) | Max. Day Demand (mg) | Min. Day Demand (mg) |
|---|---|---|---|---|---|---|---|---|---|---|
| AGCON | Agricultural Conservation | 12,081 | | | 0 | 0.0000 | 0.00 | 0.000 | 0.000 | 0.000 |
| BBSP | Brentwood Blvd. Specific Plan | 276 | | | 2000 | 0.0020 | 1.39 | 0.553 | 0.995 | 0.276 |
| BP | Business Park | 202 | | | 2000 | 0.0020 | 1.39 | 0.405 | 0.728 | 0.202 |
| CC | Community College | 17 | | | 2000 | 0.0020 | 1.39 | 0.034 | 0.061 | 0.017 |
| DSP | Downtown - Specific Plan | 63 | | | 2000 | 0.0020 | 1.39 | 0.126 | 0.227 | 0.063 |
| GC | Commercial - General | 205 | | | 2000 | 0.0020 | 1.39 | 0.409 | 0.737 | 0.205 |
| I | Industrial | 28 | | | 2000 | 0.0020 | 1.39 | 0.056 | 0.100 | 0.028 |
| MUPT | Mixed Use Pedestrian Transit | 255 | 10 | 150 | 2000 | 0.0020 | 1.39 | 0.511 | 0.919 | 0.255 |
| NO GP | No Designation | 252 | | | 0 | 0.0000 | 0.00 | 0.000 | 0.000 | 0.000 |
| P | Park * | 675 | | | 1000 | 0.0010 | 0.69 | 0.675 | 1.214 | 0.337 |
| PD | Planned Development | 126 | 10 | 350 | 3500 | 0.0035 | 2.43 | 0.442 | 0.796 | 0.221 |
| PF | Public Facility | 594 | | | 1000 | 0.0010 | 0.69 | 0.594 | 1.069 | 0.297 |
| PO | Professional Office | 53 | | | 2000 | 0.0020 | 1.39 | 0.107 | 0.193 | 0.053 |
| P-OS | Permanent Open Space | 458 | | | 0 | 0.0000 | 0.00 | 0.000 | 0.000 | 0.000 |
| RC | Commercial - Regional | 249 | | | 2000 | 0.0020 | 1.39 | 0.499 | 0.898 | 0.249 |
| RE | Ranchette Estate | 593 | 1 | 950 | 950 | 0.0010 | 0.66 | 0.563 | 1.013 | 0.282 |
| R-VLD | Residential - Very Low Density | 1,426 | 2 | 725 | 1450 | 0.0015 | 1.01 | 2.067 | 3.721 | 1.034 |
| R-LD | Residential - Low Density | 3,029 | 3 | 590 | 1770 | 0.0018 | 1.23 | 5.362 | 9.651 | 2.681 |
| R-MD | Residential - Medium Density | 476 | 8 | 450 | 3600 | 0.0036 | 2.50 | 1.714 | 3.084 | 0.857 |
| R-HD | Residential - High Density | 85 | 15 | 275 | 4125 | 0.0041 | 2.86 | 0.352 | 0.634 | 0.176 |
| R-VHD | Residential - Very High Density | 38 | 20 | 150 | 3000 | 0.0030 | 2.08 | 0.113 | 0.203 | 0.056 |
| SCH | School | 312 | | | 1500 | 0.0015 | 1.04 | 0.468 | 0.843 | 0.234 |
| SPA 2 | Special Planning Area #2 | 378 | 4 | 250 | 1000 | 0.0010 | 0.69 | 0.378 | 0.681 | 0.189 |
| SPA 3 | Special Planning Area #3 | 815 | 4 | 250 | 1000 | 0.0010 | 0.69 | 0.815 | 1.467 | 0.408 |
| SPF | Semi-Public Facility | 666 | | | 1000 | 0.0010 | 0.69 | 0.666 | 1.199 | 0.333 |
| UR | Urban Reserve | 80 | | | 0 | 0.0000 | 0.00 | 0.000 | 0.000 | 0.000 |
| **Total** | | **23,433** | | | | | **MGD** | **16.908** | **30.434** | **8.454** |
| **Buildable Acres (Less Ag. and Reg. Park)** | | **11,352** | | | | | **GPM** | **11,742** | **21,135** | **5,871** |

*** - Regional Park of 3,012 acres removed for determing water demands**

As a comparison of the total impact from the Vineyards development on the entirety of the City of Brentwood water system, the planned SPA 3 had a total maximum day demand of 1.47 million gallons per day (4.8% of the total max day demand) while the new Vineyards development is expected to have a total maximum day demand of 2.65 million gallons per day (and overall increase of 1.18 million gallons per day). This change increases the overall maximum day demand from 30.43 MGD to 31.61 MGD with the full build out of the Vineyards development now accounting for 8.3% of the total system demand.

In modeling this increase on top of the overall, future City of Brentwood water system, no substantial impacts were found. In the end, the max day increase of 1.18 MGD from the Vineyards development results in an overall increase of 819 gpm – which can satisfied by pumping from Zone 1 into Zone 2. The key component in adding this pumping capacity is still Pump Station 2.4 and the City of Brentwood will need to ensure that this pump station, when constructed, has sufficient pumping capacity to serve all of the future growth planned within Zone 2.

Mitigation Measures

The mitigations for the Vineyards development are as follows:

- Prior to the development of the Vineyards project, the 16" water transmission line in John Muir Parkway shall become constructed and operational which shall include the connection at Foothill Avenue.

- As discussed in the Phase 3 analysis, the City shall determine 'fair share' for the design and construction of Pump Station 2.4 and this pump station shall become operational at the 50% threshold of development within Phase 3.

- Prior to the issuance of the first certificate of occupancy within Phase 4 of the development, the City shall determine 'fair share' for the design and construction of Reservoir 2.4 and Pump Station 3.4. Reservoir 2.4 shall become operational at the 50% development threshold of Phase 4.

John T. Ennis, P.E.

Civil Engineer



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**Figure 1 – Land Use of The Vineyards Development**

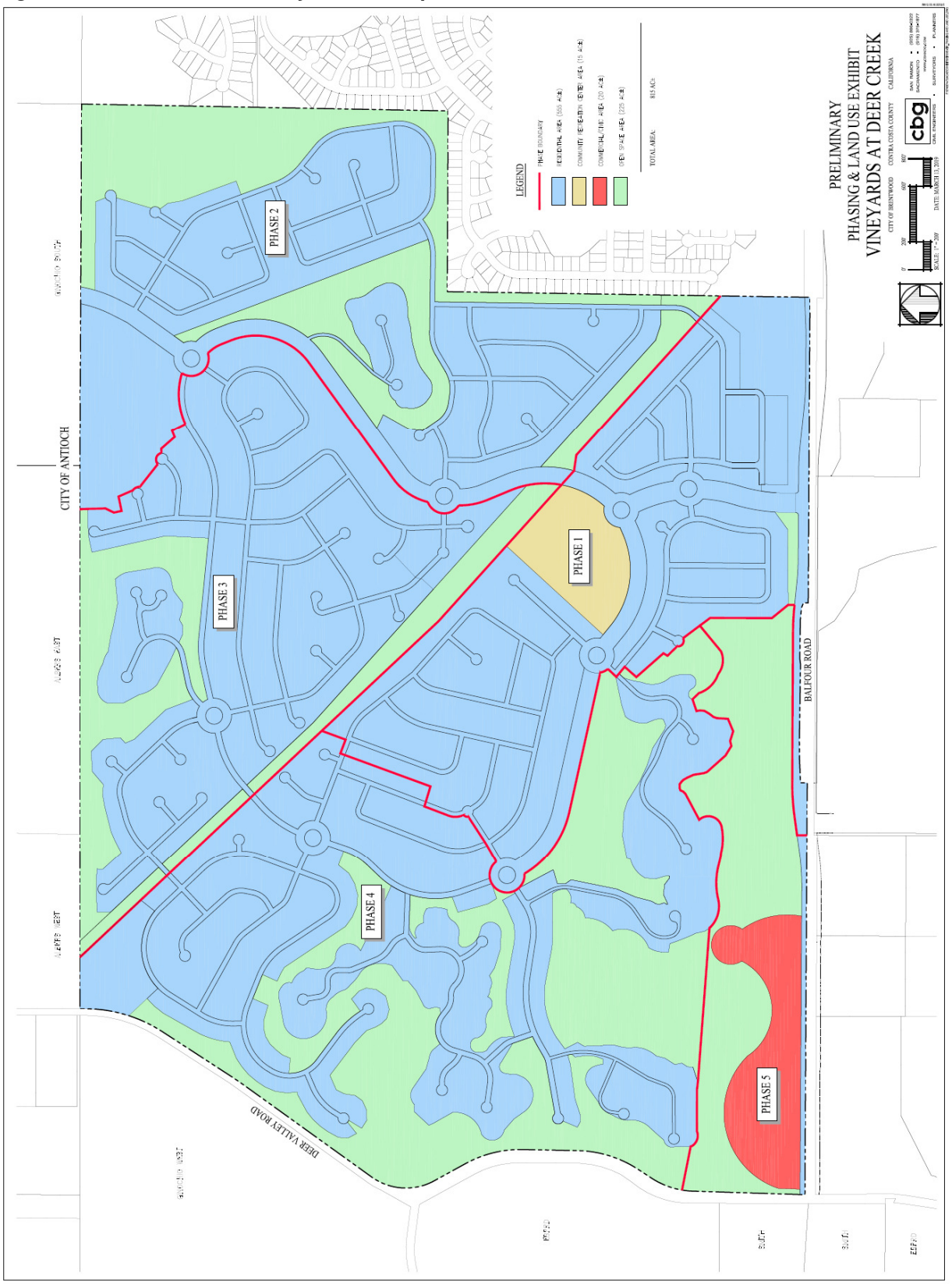


**Figure 2 - Map of Deer Ridge Development**

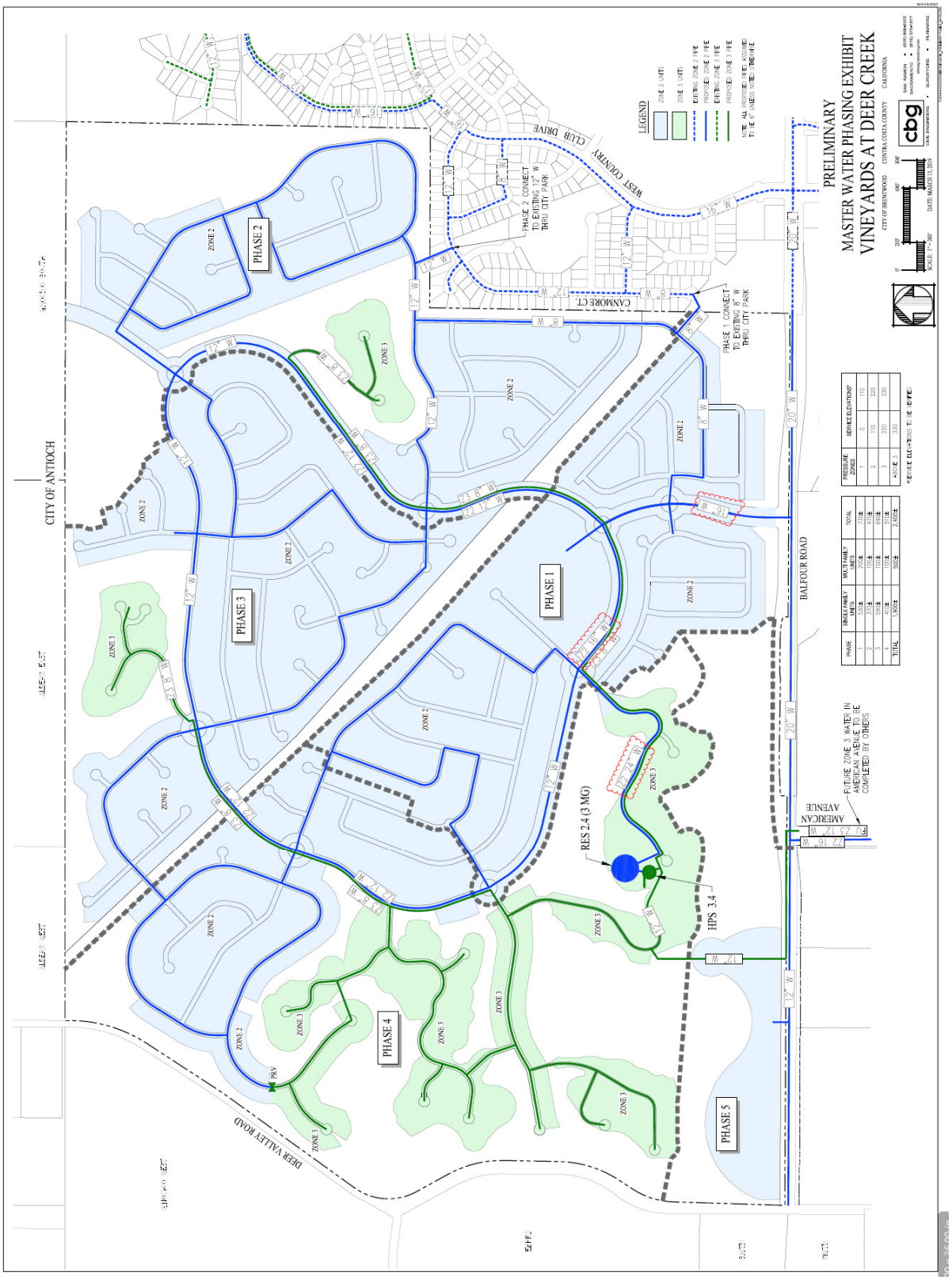


**Figure 3 – Map of Pressure Zones (Blue = Zone 2, Green = Zone 3)**

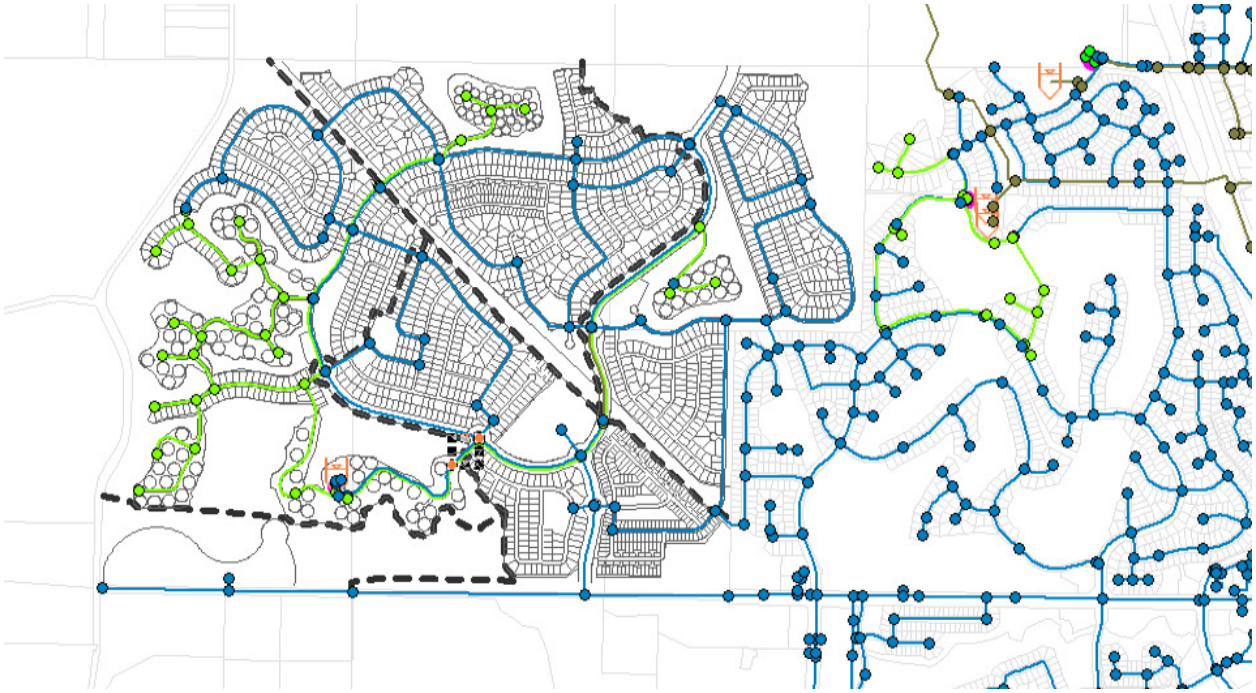


**Figure 4 - Zone 2 Tanks (Phase 1 Vineyards + Exist Maximum Day Demands)**

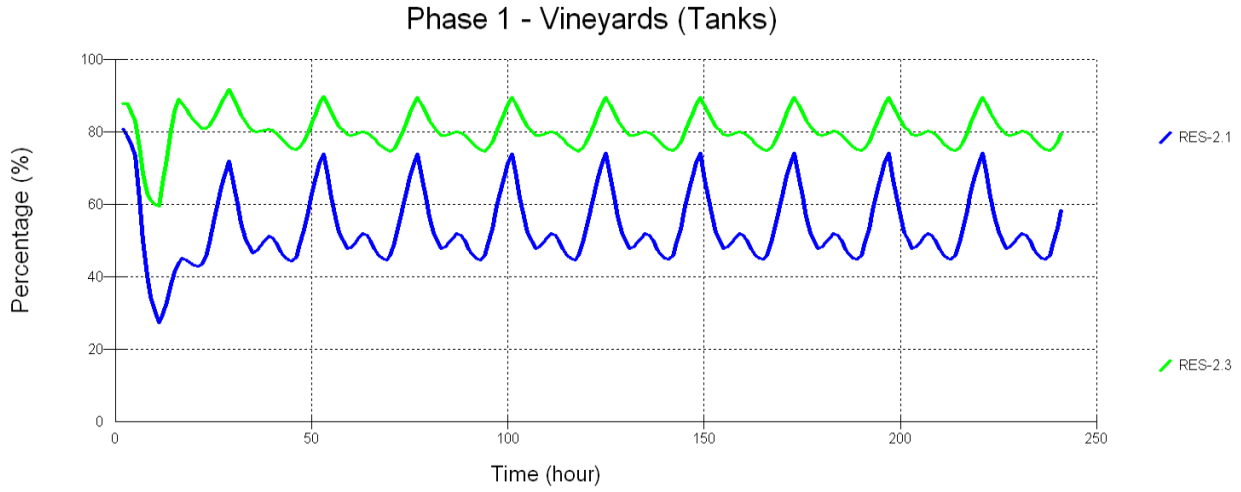


**Figure 5 - Zone 2 Tanks (Phase 2 Vineyards + Exist Maximum Day Demands)**

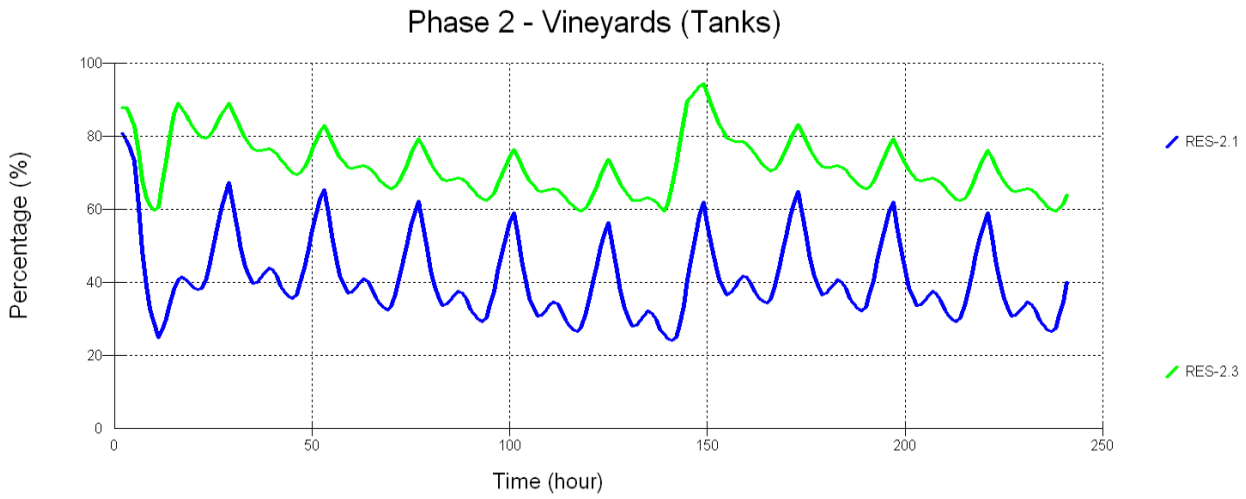



**Figure 6 - Zone 2 Tanks (Phase 3 Vineyards + Exist Maximum Day Demands)**

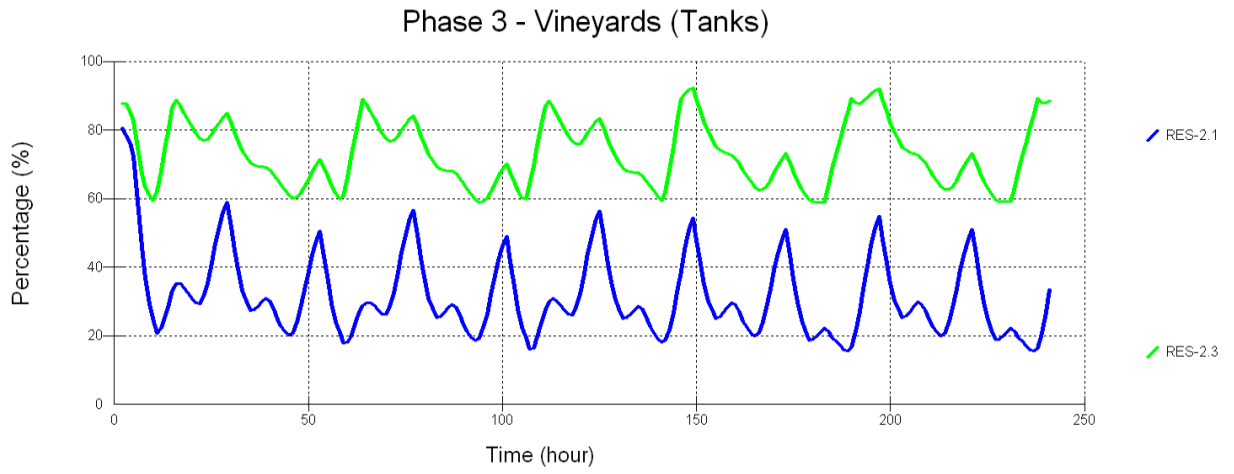


**Figure 7 - Zone 2 Tanks (Phase 4 Vineyards + Exist Maximum Day Demands)**

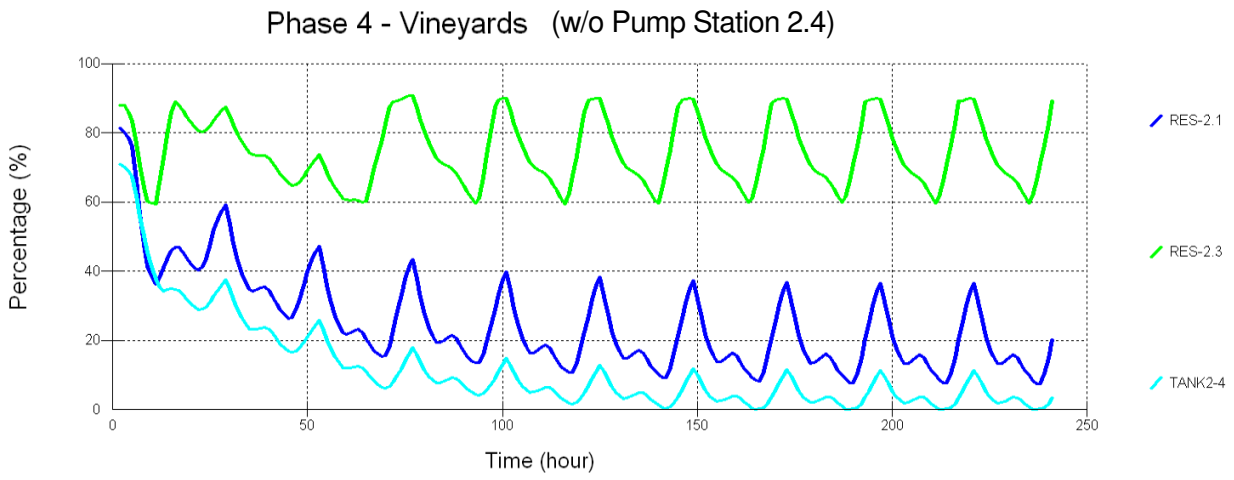
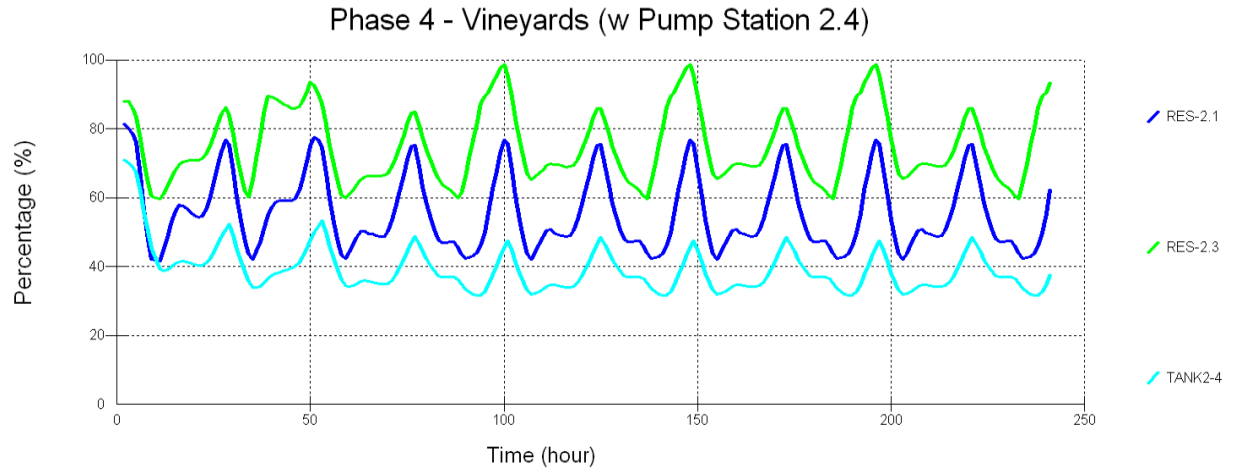



**Figure 8 - Zone 2 Tanks (Phase 4 Vineyards + Exist Maximum Day Demands + PS 2-4)**



ENNIS CONSULTING

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April 26, 2019

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**Sewer Collection System Analysis - The Vineyards at Deer Creek**

Ennis Consulting has been retained your office to determine the sewer generation for the subject development and to ascertain what, if any, master plan improvements would be required as a result of construction of the new master plan area.

Background

According to the information provided by your office and attached herein as Figure 1, it is the intent of the developer(s) to construct a new, 815 acre master planned community consisting of 555 acres of low density residential comprising 2,400 units, 15 acres of a community recreation center and 20 acres of commercial/civic area along with 225 acres of open space. As reference, the 2017 Water Master Plan prepared by Ennis Consulting modeled infrastructure for 'SPA-3' as provided by the City of Brentwood planning department. The land use equivalent for SPA-3 was approximately 1,500 units and was modeled as having an average day sewer generation of 461,000 gallons and a maximum day sewer generation of 743,000 gallons as shown is Table 1.

**City of Brentwood**
**General Plan Land Use**
**Sewer System Generation - Full Build Out**

| Use Type | Description | Acres | Density (units/acre) | Sewer Gen (gpd/unit) | Sewer Gen (gpd/acre) | Sewer Load (mgd/acre) | Sewer Load (gpm/acre) | Average Day Inflow (mgd) | Max. Day Inflow (mgd) | Min. Day Inflow (mgd) |
|---|---|---|---|---|---|---|---|---|---|---|
| SPA 3 | Special Planning Area #3 | 815 | 4 | 141 | 566 | 0.0006 | 0.39 | 0.461 | 0.743 | 0.387 |

***Table 1***

The development is expected to occur in five (5) distinct development phases as provided in Figure 2. A single analysis of sewer flow rates was conducted in order to ascertain which master planned facilities would be required at full-build out of the development, particularly in compliance with the California Environmental Quality Act (CEQA) for the mitigation of development impacts.

Sewer Generation Rates

Table 2 shows the anticipated sewer generation for each planned land use.

**City of Brentwood**
**Existing System Land Use**
**Sewer System Generation**

| Use Type | Description | Acres | Density (units/acre) | Sewer Gen (gpd/unit) | Sewer Gen (gpd/acre) | Sewer Load (mgd/acre) | Sewer Load (gpm/acre) | Average Day Inflow (mgd) | Max. Day Inflow (mgd) | Min. Day Inflow (mgd) |
|---|---|---|---|---|---|---|---|---|---|---|
| PF | Public Facility | 15 | | | 800 | 0.0008 | 0.56 | 0.012 | 0.019 | 0.010 |
| RC | Commercial - Regional | 20 | | | 1500 | 0.0015 | 1.04 | 0.030 | 0.048 | 0.025 |
| R-LD | Residential - Low Density | 555 | 4.32 | 141 | 611 | 0.0006 | 0.42 | 0.339 | 0.546 | 0.285 |
| | | | | | | | **MGD** | **0.381** | **0.614** | **0.320** |
| | | | | | | | **GPM** | **265** | **426** | **222** |

***Table 2***

The difference between the original SPA-3 land use designation (461,000 gallons/day) and the actual land use make-up of The Vineyards development (381,000 gallons/day) is a decrease of approximately 80,000 gallons/day. Since the expected sewer generation from the Vineyards development is less than the modeled SPA-3, no mitigations are required beyond the recommendations of the 2017 Sewer Master Plan.

As shown in Figure 3, the Vineyards master plan calls for a splitting of the sewer flows between the Balfour Road sewer trunk and the San Jose Avenue sewer trunk. Approximately 65% of all future flows (247,650 gallons or 0.247 MGD) are to be routed to the San Jose trunk while roughly 35% of flows (133,350 gallons or 0.133 MGD) will be routed to the Balfour trunk.

The tributary area of the Vineyards development to be routed to the San Jose trunk split will be served by a new lift station capable of lifting approximately 0.25 MGD per day at ultimate build out.

Vineyard - Full Build-Out Analysis

The results of the analysis show that the San Jose trunk is sufficient to accommodate the 0.247 mgd from the northern portion of the Vineyards development and that no new master plan improvements are required. Subsequently, all downstream lines were also analyzed with no deficiencies encountered. The existing sewer hydraulic model does not contain information regarding the sewer trunk within St. Regis Avenue; however, the current proposal to replace the existing 8" sewer line with a 12" line to the point of connection to the force main from the sewer lift station, or the construction of a parallel sewer in St. Regis Avenue as shown in Figure 4 is deemed as sufficient mitigation.

Conclusions and Recommendations

With regard to the sewer system, it is recommended that the City, prior to finalizing its Capital Improvement Plan, include 1,200 linear feet of parallel 12" sewer pipe on Balfour Road from West Country Club Drive to Ranchwood Road into a special Zone of Benefit that all new growth (including the Vineyards project) shall contribute to on a 'fair share' basis.

John T. Ennis, P.E.

Civil Engineer



- Page 3

**Figure 1 – Land Use of The Vineyards Development**

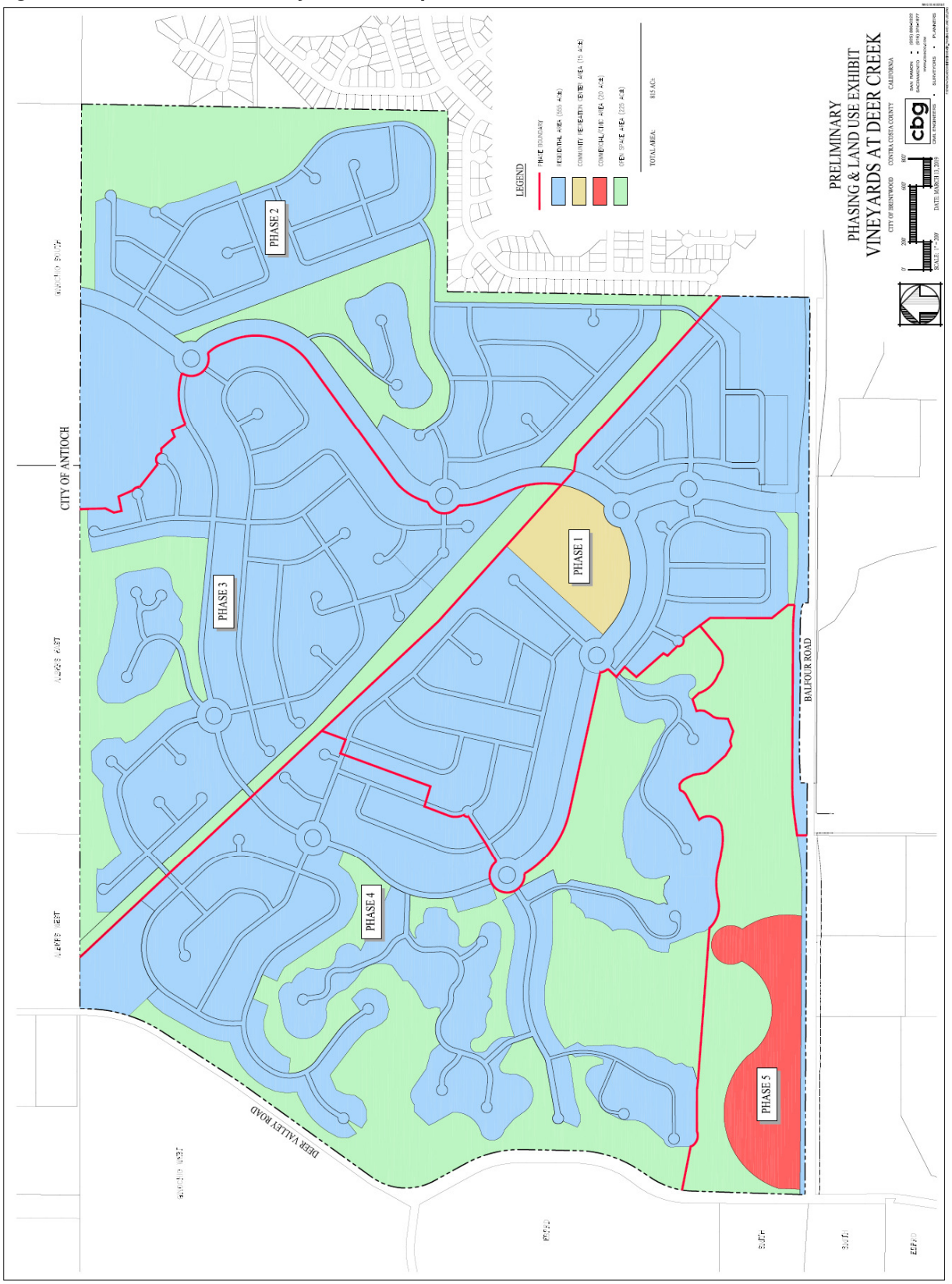


**Figure 2 - Map of Deer Ridge Development**



**Figure 3 – Map of Tributary Areas (Purple = Balfour Trunk, Green = San Jose Trunk)**

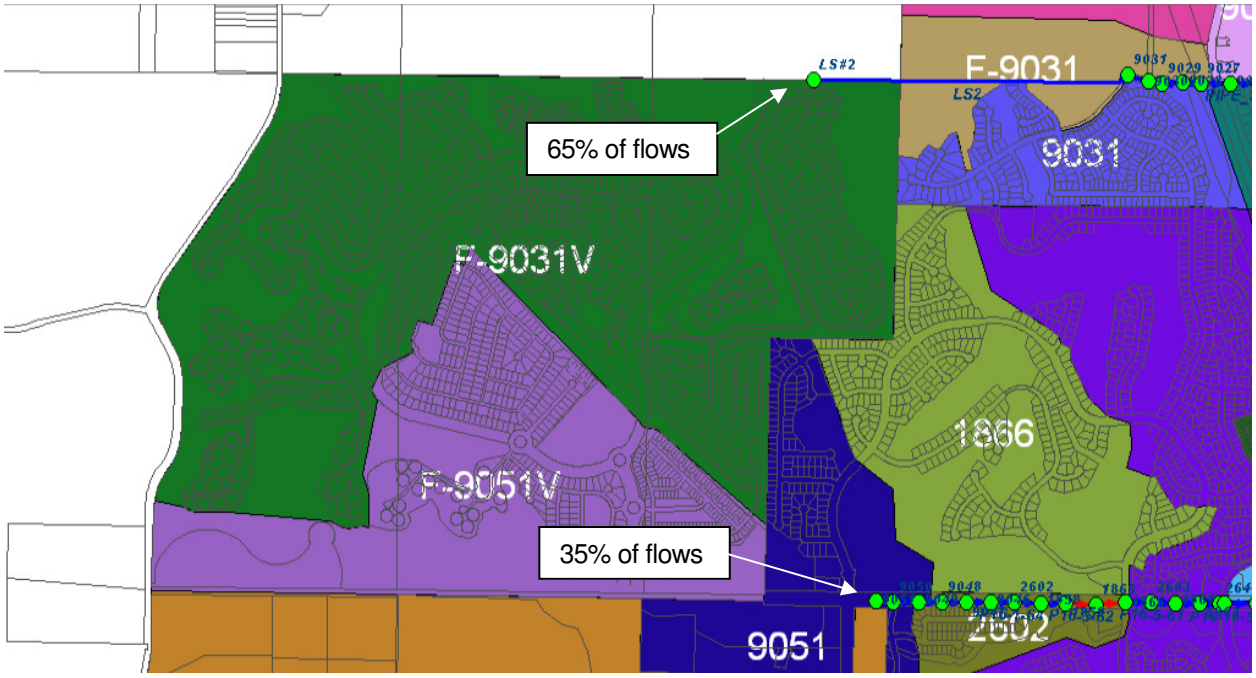



**Figure 4 – Proposed Sewer Trunk Improvements – St. Regis Avenue**

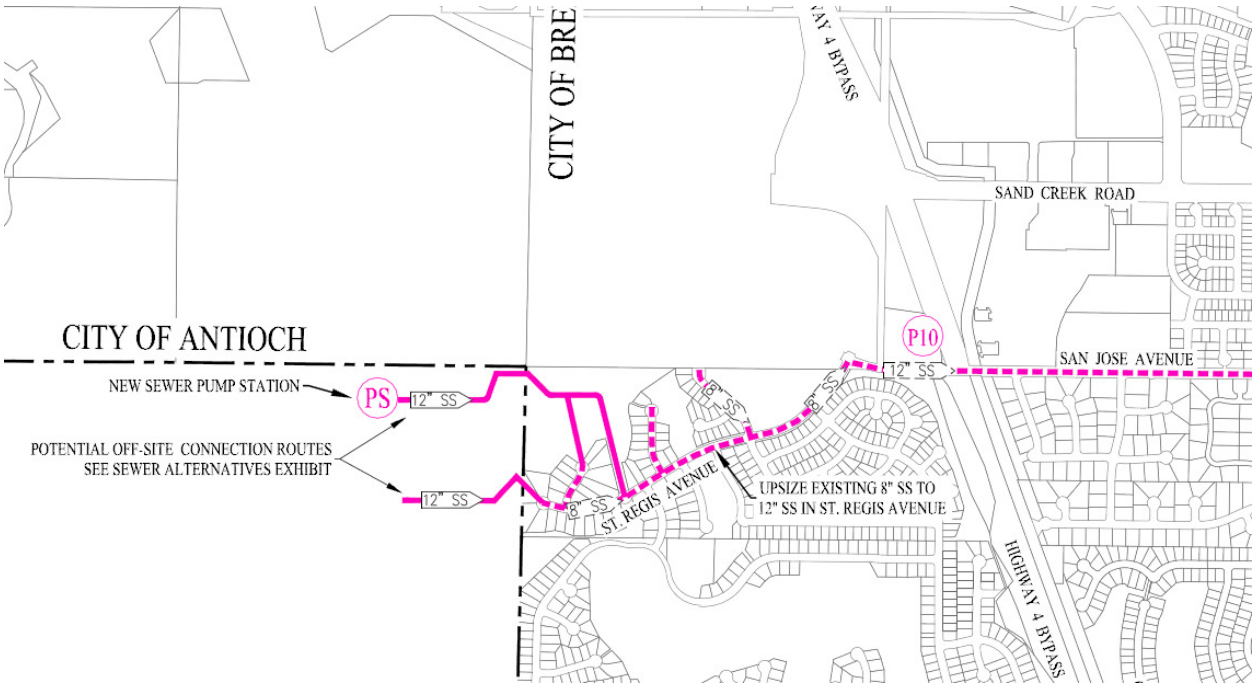
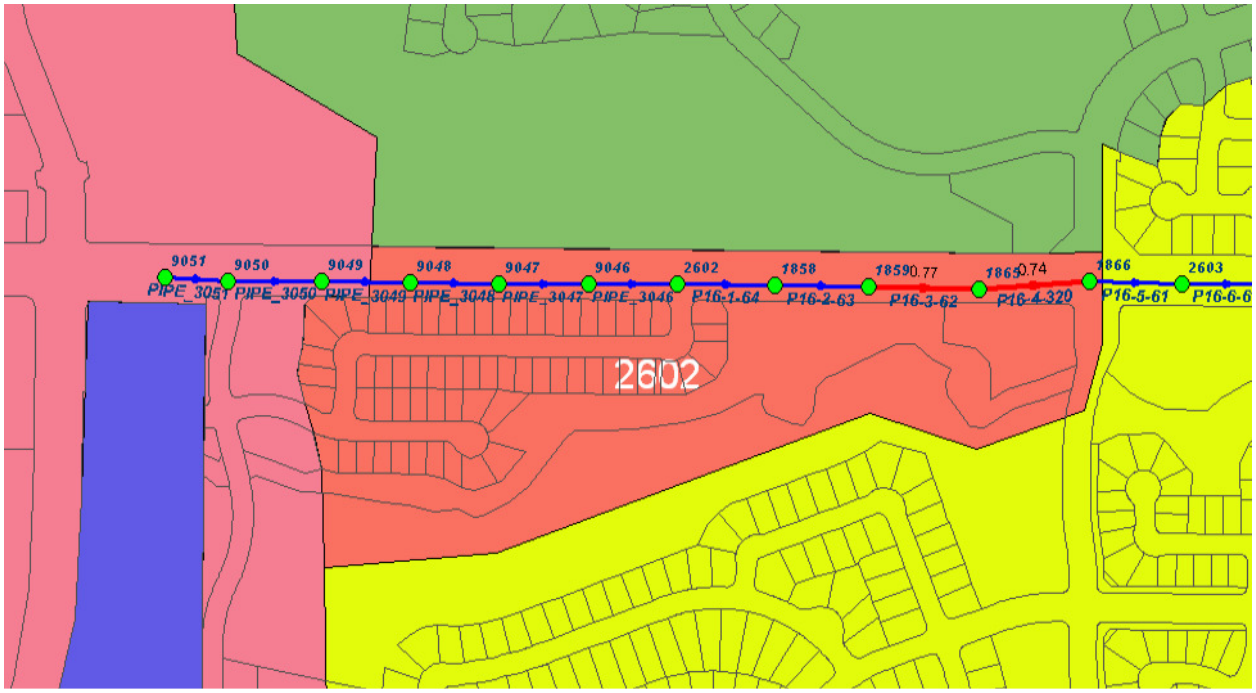


**Figure 5 – Balfour Trunk Deficiencies (Vineyards + General Plan Build-Out)**



ADMINISTRATIVE DRAFT REPORT

# Vineyards at Deer Creek Water Supply Assessment

**PREPARED FOR**

City of Brentwood

**APRIL 2019**

WEST YOST ASSOCIATES

# Vineyards at Deer Creek
# Water Supply Assessment

**Prepared for**

## City of Brentwood

**Project No. 869-60-19-01**

Project Engineer: Nathaniel Homan

Date

QA/QC Review: Jim Connell

Date

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## List of Acronyms and Abbreviations

| | |
|---|---|
| af/yr | Acre Feet Per Year |
| bgs | Below Ground Surface |
| CASGEM | California Statewide Groundwater Elevation Monitoring |
| CCWD | Contra Costa Water District |
| CEQA | California Environmental Quality Act |
| City | City of Brentwood |
| COBWTP | City of Brentwood Water Treatment Plant |
| DRU | Demographic Research Unit |
| DU | Dwelling Units |
| DWD | Diablo Water District |
| DWR | Department of Water Resources |
| ECCID | East Contra Costa Irrigation District |
| EIR | Environmental Impact Report |
| gpd | Gallons Per Day |
| Mgd | Million Gallons Per Day |
| MGY | Million Gallons Per Year |
| RBWTP | Randall-Bold Water Treatment Plant |
| SB 221 | Senate Bill 221 |
| SB 610 | Senate Bill 610 |
| SGMA | Sustainable Groundwater Management Act |
| SOI | Sphere of Influence |
| SPA2 | Special Planning Area 2 |
| SWRCB | State Water Resource Control Board |
| UWMP | Urban Water Management Plan |
| WELO | Water Efficient Landscape Ordinance |
| WMP | Water Master Plan |
| WSA | Water Supply Assessment |
| WSCP | Water Shortage Contingency Plan |
| WWTP | City of Brentwood Wastewater Treatment Plant |

# VINEYARDS AT DEER CREEK WATER SUPPLY ASSESSMENT

## EXECUTIVE SUMMARY

### Purpose of Water Supply Assessment

The purpose of this Water Supply Assessment (WSA) is to perform the evaluation required by California Water Code Sections 10910 through 10915, as established by Senate Bill 610 (SB 610), in connection with the City of Brentwood's (City) proposed Vineyards at Deer Creek development (Proposed Project), and to support the Environmental Impact Report (EIR) being prepared for the Proposed Project. This WSA evaluates the adequacy of the City's total projected water supplies, including existing water supplies and future planned water supplies, to meet the City's existing and projected future water demands, including those future water demands associated with the Proposed Project, under all hydrologic conditions (Normal Years, Single Dry Years, and Multiple Dry Years).

### Proposed Project Overview

The Proposed Project will be a mixed-use development that will include approximately 2,400 single-family and multi-family residential units, a community clubhouse, a community and civic area, agricultural open space, and natural open space. Approximately 80 percent of the residential units will be reserved for active adult residents, while the remaining 20 percent of the residential units will be unrestricted. The community clubhouse will be accessible to the public and will include pools, tennis or pickleball courts, a post office, offices, a library, meeting rooms, and a restaurant and spa. The commercial and civic area is projected to include a 1,000 to 2,000 seat amphitheater, community garden plots, restaurant, winery tasting room, commercial nursery, and/or a community meeting room. The agricultural open space will primarily be planted with vineyards and olive trees.

The Proposed Project meets the definition of a "Project" per California Water Code Sections 10910 through 10915, as established by SB 610 in 2001, thus requiring the preparation of this WSA.

### Potable and Recycled Water Demands and Supply Availability

The total water demand for the Proposed Project at buildout is projected to be approximately 1,140 acre feet per year (af/yr) (372 million gallons per year (MGY)). Of this total water demand, the potable water demand at buildout is projected to be approximately 1,051 af/yr (342 MGY) and the non-potable water demand at buildout is projected to be approximately 89 af/yr (29.2 MGY). These demands may not have been included in the City's 2015 Urban Water Management Plan (UWMP) demand projections because the Proposed Project area was not explicitly shown to be included in the 2015 UWMP planning area. Raw water supplies, possibly supplemented with recycled water in the future, will be used to meet the non-potable water demands associated with the Proposed Project.

It is anticipated that the Proposed Project, if approved by the City, would be served from the City's existing and future portfolio of water supplies. The City currently receives water supplies from five sources:

- Surface water from the Delta purchased from East Contra Costa Irrigation District (ECCID). This water is delivered to the City by three separate sources:
  - Surface water treated at the Randall-Bold Water Treatment Plant, which receives water from the Contra Costa Canal.
  - Surface water treated at the City of Brentwood Water Treatment Plant, which receives water from the Contra Costa Canal.
  - Raw water used for non-potable uses, delivered via the ECCID Canal.
- Groundwater pumped from groundwater wells located within the City.
- Recycled water treated at the City of Brentwood Wastewater Treatment Plant (WWTP). This water may only be used for non-potable uses.

The City has always met system water demand, regardless of regional hydrology. The City expects no reductions from normal-year supply during single or multiple dry years. In the event of a water shortage, the City would implement demand reduction measures as outlined in its Water Shortage Contingency Plan, which would apply to all customers completely, including those within the Proposed Project. Table ES-1 compares the projected available water supplies and water demands (including the Proposed Project) through 2040. Potable and non-potable water demands for the Proposed Project are in addition to those projected in the 2015 UWMP. As shown in Table ES-1, available water supplies are more than sufficient to meet the projected water demands for the next 20 years.

Pursuant to Water Code Section 10910(c)(4), and based on the technical analyses described in this Water Supply Assessment, this Water Supply Assessment demonstrates that the City's existing and additional planned future water supplies are sufficient to meet the City's existing and projected future water demands, including those future water demands associated with the Proposed Project, to the year 2040 under all hydrologic conditions (including Normal Years, Single Dry Years, and Multiple Dry Years).

**Table ES-1. Summary of Water Demand Versus Supply During Hydrologic Normal, Single Dry, and Multiple Dry Years, af/yr[a,b]**

| | | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|---|
| Available Potable and Raw Water Supply | | 20,402 | 20,402 | 20,402 | 20,402 | 20,402 |
| Potable and Raw Water Demand[c] | 2015 UWMP Projection (No Project)[d] | 13,205 | 14,191 | 15,246 | 16,382 | 17,603 |
| | Increase due to Project[e] | 1,140 | 1,140 | 1,140 | 1,140 | 1,140 |
| | Total Demand with Project | 14,345 | 15,331 | 16,386 | 17,522 | 18,743 |
| Potential Potable and Raw Water Surplus | | 6,057 | 5,071 | 4,016 | 2,880 | 1,659 |
| Available Recycled Water Supply[f] | | 7,813 | 10,419 | 10,419 | 10,419 | 10,419 |
| Recycled Water Demand | 2015 UWMP Projection (No Project)[d] | 632 | 865 | 1,096 | 1,329 | 1,559 |
| | Increase due to Project[g] | 0 | 0 | 0 | 0 | 0 |
| | Total Demand with Project | 632 | 865 | 1,096 | 1,329 | 1,559 |
| Potential Recycled Water Surplus | | 7,181 | 9,553 | 9,323 | 9,090 | 8,860 |

(a) Projected available water supply and water demands are assumed to be the same for normal, single dry, and multiple dry years
(b) Projected water supplies are from *City of Brentwood 2015 UWMP*, Table 6-10, converted to af/yr.
(c) Projected raw water and potable water demands are not estimated separately in the City's 2015 UWMP. Because the City's raw and potable surface water supplies are from the same entitlement, it is assumed that the City will adjust the balance between potable and raw water supplies to meet demands.
(d) Projected water demands are from *City of Brentwood 2015 UWMP*, Table 4-4, converted to af/yr.
(e) From Table 2-3. It is assumed that the non-potable demands for the Proposed Project will initially be met by raw water supplies.
(f) Values for projected recycled water supply are the total safe yield from the City's 2015 UWMP. A revised version of Table 6-9 from the City's 2015 UWMP assumed that the reasonably available volume of recycled water is equal to the projected recycled water demand. In either scenario, the projected recycled water supplies are adequate to meet the demands of the Proposed Project.
(g) Recycled water demand for the Proposed Project may increase to 89 af/yr when recycled water infrastructure is available to deliver recycled water to the Project and if the Proposed Project connects to it.

## Water Supply Assessment Approval Process

The Brentwood City Council must approve this WSA at a regular or special meeting. Furthermore, the City must include this WSA in the Draft EIR that is being prepared for the Proposed Project.

In addition, Senate Bill 221 (SB 221) applies to residential subdivisions of over 500 dwelling units (DU) and requires that the water supplier provide a written verification that the water supply for the project is sufficient, prior to issuance of the final permits. Because the Proposed Project includes up to 2,400 residential DUs, it is subject to the requirements of SB 221 (Government Code Section 66473.7).

# 1.0 INTRODUCTION

## 1.1 Legal Requirement for Water Supply Assessment

California Senate Bill 610 (SB 610) and Senate Bill 221 (SB 221) amended state law, effective January 1, 2002, to improve the link between information on water supply availability and certain land use decisions made by cities and counties. SB 610 and SB 221 were companion measures which sought to promote more collaborative planning between local water suppliers and cities and counties. Both statutes require detailed information regarding water availability to be provided to the city and county decision-makers prior to approval of specified large development projects. The purpose of this coordination is to ensure that prudent water supply planning has been conducted, and that planned water supplies are adequate to meet existing demands, anticipated demands from approved projects and tentative maps, and the demands of proposed projects.

SB 610 amended California Water Code Sections 10910 through 10915 (inclusive) to require land use lead agencies to:

- Identify any public water purveyor that may supply water for a proposed development project; and
- Request a Water Supply Assessment (WSA) from the identified water purveyor.

The purpose of the WSA is to demonstrate the sufficiency of the purveyor's water supplies to satisfy the water demands of the proposed project, while still meeting the water purveyor's existing and planned future uses. Water Code Sections 10910 through 10915 delineate the specific information that must be included in the WSA.

## 1.2 Need for and Purpose of Water Supply Assessment

The purpose of this WSA is to perform the evaluation required by Water Code Sections 10910 through 10915 in connection with the City of Brentwood's (City) proposed Vineyards at Deer Creek development (Proposed Project). It is not to reserve water, or to function as a "will serve" letter or any other form of commitment to supply water (see Water Code Section 10914). The provision of water service will continue to be undertaken in a manner consistent with applicable City policies and procedures, consistent with existing law.

## 1.3 Water Supply Assessment Preparation, Format and Organization

The format of this WSA is intended to follow Water Code Sections 10910 through 10915 to clearly delineate compliance with the specific requirements for a WSA. The WSA includes the following sections:

- Section 1: Introduction
- Section 2: Description of Proposed Project
- Section 3: Required Determinations
- Section 4: City of Brentwood Water Service Area

- Section 5: City of Brentwood Water Demands
- Section 6: City of Brentwood Water Supplies
- Section 7: Determination of Water Supply Sufficiency Based on the Requirements of SB 610
- Section 8: Water Supply Assessment Approval Process
- Section 9: References

Relevant citations of Water Code Sections 10910 through 10915 are included throughout this WSA in *italics* to demonstrate compliance with the specific requirements of SB 610.

# 2.0 DESCRIPTION OF PROPOSED PROJECT

## 2.1 Proposed Project Location

The Proposed Project is located west of the City, just outside the City Sphere of Influence (SOI) and City Limits. The Proposed Project area includes approximately 800 acres of land located south of the City of Antioch, west of Waterville Drive and Presidio Drive, north of Balfour Road, and east of Deer Valley Road. To the north and west of the Proposed Project area is undeveloped land located outside the City SOI. To the south are the existing Heritage High School and Adams Middle School as well as undeveloped land within the City Limits designated for very low density residential development by the City's General Plan. To the east are existing residential developments. Figure 2-1 depicts the vicinity of the Proposed Project.

Currently, the Proposed Project area is largely undeveloped, although there are several existing powerlines and other utilities which run through the site. The Proposed Project area is designated as Special Planning Area 2 (SPA2) in the City's General Plan. A Special Planning Area is a large area of land adjacent to the City Limits which may be suitable for annexation in the future. SPA2 is designated for development as Very Low Density Residential, Ranchette Estate, or age-restricted housing units by the City's General Plan, and any development in SPA2 is required to include a significant area of protected open space.

## 2.2 Proposed Land Uses and Acreages

The Proposed Project will be a mixed-use development that will include approximately 2,400 single-family and multi-family residential units, a community clubhouse, a community and civic area, agricultural open space, and natural open space. Approximately 80 percent of the residential units will be reserved for active adult residents, while the remaining 20 percent of the residential units will be unrestricted. The community clubhouse will be accessible to the Public and will include pools, tennis or pickleball courts, a post office, offices, a library, meeting rooms, and a restaurant and spa. The commercial and civic area is projected to include a 1,000 to 2,000 seat amphitheater, community garden plots, restaurant, winery tasting room, commercial nursery, and/or a community meeting room. The agricultural open space will primarily be planted with vineyards and olive trees.

Proposed land uses for the Proposed Project are summarized in Table 2-1 and shown on Figure 2-2.

**Table 2-1. Proposed Land Uses for the Proposed Project**

| Land Use | Approximate Area, acres[a] | Projected DUs |
|---|---|---|
| Single-family Residential, Unrestricted | 530 | 480[b] |
| Single-family Residential, Active Adult | | 1,420[c] |
| Multi-family Residential, Active Adult | | 500[d] |
| Community Clubhouse | 15 | - |
| Commercial and Civic Area[e] | 20 | - |
| Agricultural Open Space[f] | 113 | - |
| Detention Basins[g] | 25 | - |
| Natural Open Space[g] | 112 | - |
| **Total** | **815** | **2,400** |

(a) From email from GBN staff received on March 7th, 2019.
(b) From Working Project Description for Vineyards at Deer Creek, dated January 14, 2019.
(c) Active adult single-family units = 1,420 DU (1,900 single-family units total (Preliminary Master Water Phasing Exhibit for Vineyards at Deer Creek, dated January 14, 2019) - 480 unrestricted single-family units.)
(d) From Preliminary Master Water Phasing Exhibit Vineyards at Deer Creek, dated January 14, 2019.
(e) Potential uses include restaurant, offices, amphitheater, community garden, and commercial nursery.
(f) Crops will primarily be vineyards and olives.
(g) Detention basins and natural open space will not be irrigated.

## 2.3 Projected Water Demand

### 2.3.1 Water Use Factors and Assumptions

As part of the City's 2017 Water Master Plan (WMP) (Ennis Consulting, 2017), the City used unit water use factors to estimate the water demands associated with land uses presented in the City's General Plan. These water use factors were derived from the 2006 Water System Master Plan model and were then adjusted accordingly to be in compliance with the Northern California Water Alliance Land Use/Water Supply Analysis Guidebook (City of Brentwood 2017 WMP). Residential and Commercial water use factors used to project demands for the Proposed Project are from Table 8 of the City's 2017 WMP. For the unrestricted single-family residential units, the City's Low-Density Residential water use factor of 590 gallons per day (gpd)/DU was assumed. For the active adult single-family and multi-family residential units, the City's Low-Density Residential and Medium-Density Residential water use factors, respectively, were adjusted to account for the lower average number of persons per household in active adult households than in average City households. For the community clubhouse and commercial and civic area, the City's Commercial water use factor of 2,000 gpd/acre was assumed.

It was assumed that non-potable water will be used for all of the Proposed Project's irrigation demands, with the exception of irrigation demand for the single-family residential units. Projected irrigation demands were calculated using the methodology outlined in the City's Water Efficient Landscape Ordinance (WELO). It was assumed that irrigated area will be 10 percent of the total area for the multi-family residential units, community clubhouse, and commercial and civic area. All agricultural open space will be irrigated with non-potable water.

Losses were assumed to be 12.5 percent of total water deliveries, based on raw and potable water use data from the City's 2015 UWMP (Brown and Caldwell, 2016). No data on losses for recycled water were available, so it was assumed that the losses for the recycled water system are also 12.5 percent of total recycled water deliveries.

Table 2-2 summarizes the unit water use factors for the land use designations applicable to the Proposed Project.

**Table 2-2. Water Use Factors for the Proposed Project**

| Land Use | Water Use Factor[a] | Units |
|---|---|---|
| Single-family Residential, Unrestricted | 590[b] | gpd/DU |
| Single-family Residential, Active Adult | 278[c] | gpd/DU |
| Multi-family Residential, Active Adult | 212[d] | gpd/DU |
| Community Clubhouse | 2,000[e] | gpd/acre |
| Commercial and Civic Area | 2,000[e] | gpd/acre |
| Agricultural Open Space | 0.5[f] | af/acre |
| Detention Basins | - | gpd/acre |
| Natural Open Space | - | gpd/acre |
| Losses[g] | 12.5 | percent of total water delivered |

(a) Water use factors for non-residential uses assumed to be based on gross area. Water use factors assumed to include irrigation demand.

(b) Low Density Residential Water Use Factor from the City of Brentwood's Water Master Plan (Ennis Consulting, 2017).

(c) Active adult single-family Water Use Factor is the low density residential Water Use Factor (see footnote b) adjusted to account for the lower average number of people per dwelling unit in active adult communities. The average household size in Brentwood is 3.18 persons per household (City of Brentwood Housing Element, 2015). It is assumed that there will be an average number of 1.5 persons per household in the active adult residences developed for the Project (a similar assumption was made in the Brentwood Golf Course Redevelopment WSA, dated June 13, 2017). Therefore, the active adult single-family Water Use Factor = 278 gpd/DU (590 gpd/DU x (1.5 / 3.18)).

(d) Active adult multi-family Water Use Factor is an adjusted medium density residential Water Use Factor (450 gpd/DU, from City of Brentwood's Water Master Plan (Ennis Consulting, 2017)) adjusted to account for the lower average number of people per dwelling unit in active adult communities. The average household size in Brentwood is 3.18 persons per household (City of Brentwood Housing Element, 2015). It is assumed that there will be an average number of 1.5 persons per household in the active adult residences developed for the Project (a similar assumption was made in the Brentwood Golf Course Redevelopment WSA, dated June 13, 2017). Therefore, the active adult multi-family Water Use Factor = 212 gpd/DU (450 gpd/DU x (1.5 / 3.18)).

(e) Commercial Water Use Factor from the City of Brentwood's Water Master Plan (Ennis Consulting, 2017).

(f) Typical water use factor for vineyards.

(g) Losses are assumed to be 12.5 percent of water use. Based on the *City of Brentwood 2015 UWMP* (Brown and Caldwell, 2016), Table 4-1.

### 2.3.1 Water Demand Calculations

Based on the water use factors described above, the projected water demand at buildout of the Proposed Project is shown in Table 2-3. The detailed water demand projections for the Proposed Project are included in Appendix A. The total water demand for the Proposed Project at buildout is projected to be approximately 1,140 af/yr (372 MGY). Of this total water demand, the potable water demand at buildout is projected to be approximately 1,051 af/yr (342 MGY) and the non-potable water demand at buildout is projected to be approximately 89 af/yr (29.2 MGY).

**Table 2-3. Projected Water Demands for the Proposed Project, af/yr**

| Land Use | Total Water Demand[(a)] | Potable Water Demand[(b)] | Non-potable Water Demand[(c)] |
|---|---|---|---|
| Single-family Residential, Unrestricted[(d)] | 317 | 317 | 0 |
| Single-family Residential, Active Adult[(d)] | 443 | 443 | 0 |
| Multi-family Residential, Active Adult[(e)] | 119 | 103 | 16 |
| Community Clubhouse[(e)] | 34 | 31 | 3 |
| Commercial and Civic Area[(e)] | 45 | 41 | 4 |
| Agricultural Open Space[(f)] | 57 | 0 | 57 |
| Detention Basins | 0 | 0 | 0 |
| Natural Open Space | 0 | 0 | 0 |
| **Subtotal** | **1,014** | **934** | **80** |
| Losses[(g)] | 126 | 117 | 9 |
| **Grand Total** | **1,140** | **1,051** | **89** |

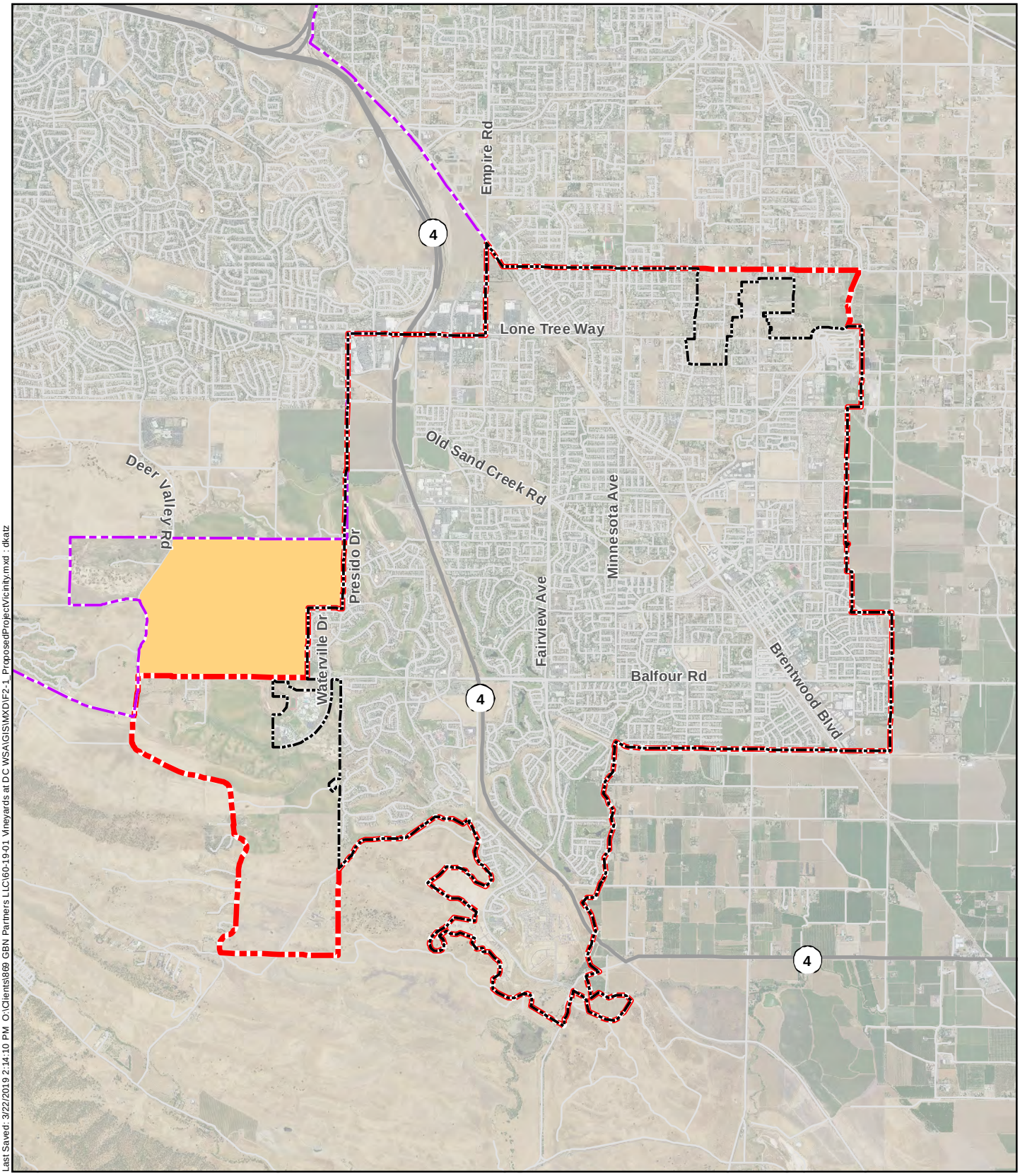
(a) Based on water use factors presented in Table 2-2.
(b) Potable water demand = total water demand - non-potable water demand.
(c) Non-potable water assumed to be used for irrigation purposes for all proposed land use types, except for single-family residential land use types.
(d) Single-family residential land use types assumed to use potable water for irrigation, and therefore no non-potable demands are projected.
(e) Irrigation unit demand is based on the *City of Brentwood Water Efficient Landscape Ordinance* (City of Brentwood, 2017).
(f) Irrigation unit demand is a typical water use factor for vineyards (presented in Table 2-2).
(g) Losses are assumed to be 12.5 percent of water use. Based on the *City of Brentwood 2015 UWMP*, Table 4-1.

## 2.1 Projected Water Supply

Water demands for the Proposed Project will be served using the City's existing and future portfolio of water supplies. The inclusion of existing and planned future water supplies is specifically allowed by the Water Code:

> *Water Code Section 10631(b): Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a).*

Non-potable water demands for the Project are assumed to be met initially by raw (untreated) ECCID water. Non-potable water demands may be met by the City's recycled water supply in the future once recycled water infrastructure is available to deliver recycled water to the Proposed Project, and if the Proposed Project connects to the City's recycled water system. Proponents of the Proposed Project will provide their proportionate share of required funding to the City for the acquisition and delivery of treated potable and non-potable water supplies to the Proposed Project area.




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**Symbology**

- Proposed Project Area
- Brentwood City Limits
- Brentwood Sphere of Influence
- Antioch City Limits

N

0 0.5 1

Scale in Miles

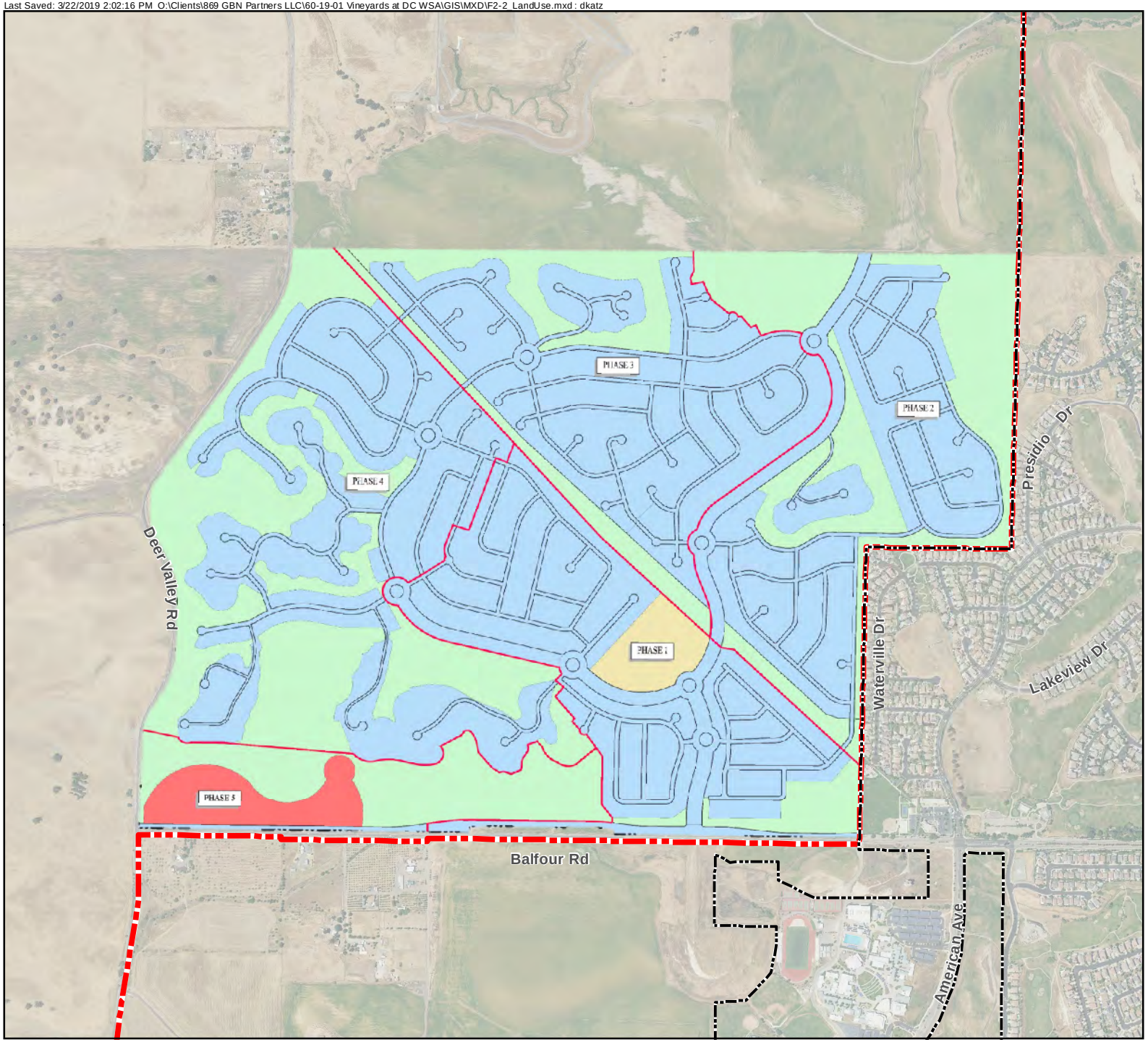
WEST YOST ASSOCIATES

## Figure 2-1

## Proposed Project Vicinity

GBN Partners LLC
Water Supply Assessment for
Vineyards at Deer Creek

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N

0 625 1,250

Scale in Feet

**Symbology**

- Brentwood City Limits
- Brentwood Sphere of Influence
- Phase Boundary

Proposed Land Use

- Residential
- Community Recreation Center
- Commercial/Civil
- Open Space

WEST YOST ASSOCIATES

## Figure 2-2

## Proposed Project Land Use Plan

GBN Partners LLC
Water Supply Assessment for
Vineyards at Deer Creek

## 3.0 REQUIRED DETERMINATIONS

### 3.1 Does SB 610 apply to the Proposed Project?

*10910 (a) Any city or county that determines that a project, as defined in Section 10912, is subject to the California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) under Section 21080 of the Public Resources Code shall comply with this part.*

*10912 (a) "Project" means any of the following:*

*(1) A proposed residential development of more than 500 dwelling units.*

*(2) A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.*

*(3) A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.*

*(4) A proposed hotel or motel, or both, having more than 500 rooms.*

*(5) A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.*

*(6) A mixed-use project that includes one or more of the projects specified in this subdivision.*

*(7) A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500-dwelling unit project.*

Based on the following facts, SB 610 does apply to the Proposed Project.

- The City of Brentwood has determined that the Proposed Project is subject to the California Environmental Quality Act (CEQA) and that an EIR is required.
- The Proposed Project includes residential, commercial, and agricultural land uses, and therefore is a mixed-use project. The residential development portion of the Proposed Project includes 2,400 residential DUs and therefore meets the definition of a "Project" as specified in Water Code Section 10912(a) paragraph (1) as defined for residential development. The Proposed Project therefore meets the definition of a "Project" as specified in Water Code Section 10912(a) paragraph (6) for mixed-use projects.

The Proposed Project has not been the subject of a previously adopted WSA and has not been included in an adopted WSA for a larger project. Therefore, according to Water Code Section 10910(a), a WSA is required for the Proposed Project.

### 3.2 Who is the Identified Public Water System?

*10910(b) The city or county, at the time that it determines whether an environmental impact report, a negative declaration, or a mitigated negative declaration is required for any project subject to the California Environmental Quality Act pursuant to Section 21080.1 of the Public Resources Code, shall identify any water system that is, or may become as a result of supplying water to the project identified pursuant to this subdivision, a public water system, as defined by Section 10912, that may supply water for the project*

*10912 (c) "Public water system" means a system for the provision of piped water to the public for human consumption that has 3,000 or more service connections…*

As shown on Figure 2-1, the Proposed Project is not located within the City of Brentwood Limits or SOI. However, the Project area is designated as Special Planning Area 2 in the City's General Plan, indicating that the City intends to annex it in the future. In addition, projected future demands for the Project area were included in the City's 2017 Water Master Plan. Therefore, the City is the identified public water system for the Proposed Project.

### 3.3 Does the City have an adopted Urban Water Management Plan (UWMP) and does the UWMP include the projected water demand for the Proposed Project?

*10910(c)(1) The city or county, at the time it makes the determination required under Section 21080.1 of the Public Resources Code, shall request each public water system identified pursuant to subdivision (b) to determine whether the projected water demand associated with a proposed project was included as part of the most recently adopted urban water management plan adopted pursuant to Part 2.6 (commencing with Section 10610).*

The City's most recently adopted UWMP (the City's 2015 UWMP) was adopted by the Brentwood City Council in June 2016 and is incorporated by reference into this WSA[1]. The City's 2015 UWMP included water demand projections for current water demands within the City (baseline demand) and anticipated water demands associated with future development projects and planning areas within the City's General Plan Sphere of Influence through 2040.

Although projected future demands for the Project area were included in the City's 2017 Water Master Plan, the Project area does not appear to be included in the planning area for the City's 2015 UWMP. Therefore, for purposed of this WSA, water demands for the Project represent an increase in demands from those projected in the City's 2015 UWMP and must be met by surplus water supply. The City's ability to meet the projected water demands for the Proposed Project using available surplus water supply is described in Section 7.0 of this WSA.

[1] City of Brentwood 2015 Urban Water Management Plan, prepared by Brown and Caldwell, June 2016.

# 4.0 CITY OF BRENTWOOD WATER SERVICE AREA

## 4.1 Water Service Area

The City of Brentwood is located in Eastern Contra Costa County, California, and was incorporated in 1948. The existing incorporated area of the City encompasses approximately 14.8 square miles. The City's General Plan includes the City's Sphere of Influence (SOI), the area outside of the City limits that the City expects to annex and urbanize in the future. The City's SOI encompasses an area of approximately 17.4 square miles and is 2.6 square miles larger than the current City limits. (City of Brentwood 2015 UWMP)

With a few exceptions, the City's water service area is coterminous with the City Limits. As future developments outside the City Limits are approved, they will be annexed into the City and served by the City water system. Figure 2-1 illustrates the current City Limits and the SOI.

## 4.2 Population

When the City of Brentwood was incorporated in 1948, it had a population of 1,700. During the late 1990's and early 2000's the City's population grew rapidly, from 7,563 in 1990 to 51,481 in 2010 (De Novo, 2013). The City experienced a dramatic economic boom from 2000 through 2008, which contributed substantially to the high growth rate. This growth stalled in 2009 in response to changes in the U.S. economy, particularly the real estate market collapse in California. As a result, the City experienced a 1 percent decrease in population from 2009 to 2010. Since then, the annual growth rate has averaged 1.6 percent before peaking in 2015 at 2.8 percent. Moving forward, the annual growth rate is projected to average approximately 1.5 percent, with the City's population projected to reach 80,917 citizens at build out. (City of Brentwood 2015 UWMP)

Current population data for the City came from the California Department of Finance Demographic Research Unit (DRU) as control totals for each jurisdiction. Data from DRU were also used to project future population growth. Economic and demographic mathematical models are used to drive population projections. These models can be adjusted by considering historical and present trends, taking into account available vacant land, redevelopment activities, and current land use policies and plans. The City expects 9,348 new residents over the next decade, based on the number of new single-family houses and multi-family permits projected to be approved through 2024. (City of Brentwood 2015 UWMP)

Demographic factors that affect water management planning include the uncertainty in estimating future population growth and per capita water use. Affordability of housing has many people choosing to reside in Brentwood. Even though population and employment rates in the City continue to grow, nearly 75 percent of Brentwood residents commute to jobs outside of the City. The largest employers within the City are community-service retail and government employers. While agriculture remains important to the local economy, it has declined in relative importance as the City has become more suburban. The City has no heavy industry and only a small light industry area in the northeastern part of the City. Changes in the economy can have a strong impact on growth. (City of Brentwood 2015 UWMP)

Table 4-1 shows the City's existing and projected population in five-year increments to the year 2040.

**Table 4-1. City of Brentwood Existing and Projected Population**

| | Year | | | | | |
|---|---|---|---|---|---|---|
| | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 |
| Population Projection[a] | 56,493[b] | 60,702 | 65,225 | 70,084 | 75,306 | 80,917 |

(a) From *City of Brentwood 2015 UWMP*, Table 3-2.
(b) Actual 2015 population.

## 4.3 Climate

The City has cool, humid winters, and hot, dry summers. Based on the historical data obtained from the California Irrigation Management Information System, the City's average daily temperature ranges from 37 to 90°F; the extreme low and high temperatures have been 11 and 109°F, respectively, over the time period from January 1986 to December 2015. The rainy season typically begins in November and ends in March. Average monthly precipitation during the winter months is about 2 to 3 inches, but records show that the monthly winter precipitation has been as high as 8 inches (in February 1998) and as low as 0 inches (multiple months). Water demands during the winter are low relative to summer months (May to September). The combination of hot and dry weather during the summer results in high water demands during these periods. Landscape irrigation, including turf irrigation in the summer, significantly contributes to the higher summer demands. (City of Brentwood 2015 UWMP)

Evapotranspiration records, which measure the loss of water from the soil both by evaporation and by transpiration from the plants growing thereon, indicate average monthly values ranging from 1.0 inches in the City's wet Januarys to 7.9 inches in much drier Julys.

Table 4-2 summarizes the City's average temperature and rainfall data. Temperature and rainfall data were obtained from the City's 2015 UWMP. Evapotranspiration data were obtained from the City's Water Efficient Landscape Ordinance (2017).

**Table 4-2. City of Brentwood Climate Data**

| Month | Average $ET_{o, inches}$[(a)] | Average Rainfall, inches[(b)] | Average Max Temperature, F[(b)] | Average Min Temperature, F[(b)] |
|---|---|---|---|---|
| Jan | 1.0 | 2.34 | 55.49 | 39.19 |
| Feb | 1.5 | 2.31 | 59.24 | 40.22 |
| Mar | 2.9 | 1.32 | 64.91 | 43.19 |
| Apr | 4.5 | 0.74 | 69.48 | 44.76 |
| May | 6.1 | 0.56 | 75.76 | 48.45 |
| Jun | 7.1 | 0.29 | 82.62 | 51.04 |
| Jul | 7.9 | 0.10 | 87.59 | 54.61 |
| Aug | 6.7 | 0.13 | 89.94 | 55.60 |
| Sep | 5.3 | 0.26 | 86.11 | 53.89 |
| Oct | 3.2 | 0.74 | 77.35 | 48.92 |
| Nov | 1.4 | 1.22 | 64.73 | 41.87 |
| Dec | 0.7 | 2.40 | 54.95 | 37.17 |
| **Annual Total** | **48.3** | **12.41** | **-** | **-** |

(a) From *City of Brentwood Water Efficient Landscape Ordinance*, Appendix A
(b) *City of Brentwood 2015 UWMP*, Table 3-1.

## 5.0 CITY OF BRENTWOOD WATER DEMANDS

*10910(c)(2) If the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from the urban water management plan in preparing the elements of the assessment required to comply with subdivisions (d), (e), (f), and (g).*

The descriptions provided below for the City's water demands have been taken, for the most part, from the City's 2015 UWMP, which was adopted in June 2016. Supplemental information from other available reports has been included to provide the most recent data available and to meet the specific requirements of SB 610.

### 5.1 Historical and Existing Water Demand

In recent years, the City's water demand has decreased as a result of the economic downturn of 2008 through 2011 and water use reductions in response to recent drought conditions. Table 5-1 shows the City's historical water demands for 2005, 2010, and 2015. Historical water deliveries were obtained from the City's annual reports sent to the Department of Water Resources (DWR) and the California Department of Public Health/State Water Resources Control Board Division of Drinking Water.

**Table 5-1. Historical Water Demand, af/yr**

| | 2005[a] | 2010[a] | 2015[b] |
|---|---|---|---|
| Total Potable and Raw Water Demand[c] | 11,910 | 11,714 | 8,918 |
| Total Recycled Water Demand[c] | - | - | 399 |
| **Total Water Demand** | **11,910** | **11,714** | **9,317** |

(a) Historical Water Delivery data for 2005 and 2010 is from the *City of Brentwood 2010 UWMP* (ICF International, 2011), Table 4-6 and Table 4-7.
(b) Historical Water Delivery data for 2005 and 2015 is from the *City of Brentwood 2015 UWMP,* Table 4-1 and Table 4-4.
(c) Recycled Water Demand was not tracked separately for 2005 and 2010, and is included in the potable and raw water demand for these years.

### 5.1 Future Water Demand

The City's water demand is anticipated to continue to increase as approved projects build out and new developments are approved and constructed in accordance with the City's General Plan within the City's water service area. Based on the City's General Plan, the projected average annual water use at buildout was approximately 21,800 acre-feet per year. The City's General Plan tabulated this buildout demand using the City's average per capita baseline water use of 241 gallons per capita per day (gpcd) that occurred from 2001 through 2010. With the onset of the drought, the City's per capita demand has decreased substantially. While a rebound in per capita water use from drought to pre-drought levels is expected, water use is not likely to increase back to the 241 gpcd baseline. Instead, normal year water demands through 2040 are projected based on assuming per capita demands will increase back to approximately 90 percent of the 2012 gpcd and the projected population. This approach is based on the assumption that 2012 was a normal water demand year and that some conservation measures implemented by the City and its customers during the

drought are permanent and will result in some level of continued reduced water demands into the future. (City of Brentwood 2015 UWMP)

The City has developed preliminary planning documents to identify uses for recycled wastewater at both existing and future sites. Recycled wastewater is projected to primarily be used for the irrigation of parks and landscape amenities. The City already has constructed a portion of the recycled water distribution system and will continue to expand the system as the City grows. The City has identified several parks that have the potential to be served with recycled water. Recycled water demands were estimated to be 2,111 af/yr at buildout. However, expansion of the recycled water system to meet the demand for some customers will likely come at a high cost per acre-foot of demand added. A buildout (2040) demand totaling 1,560 af/yr was deemed more feasible. (City of Brentwood 2015 UWMP)

Table 5-2 shows the projected potable and recycled water demand through 2040 as presented in the City's 2015 UWMP.

**Table 5-2. Projected Future Water Demand, af/yr[(a)]**

| | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|
| Total Potable and Raw Water Demand[(c)] | 13,205 | 14,191 | 15,246 | 16,382 | 17,603 |
| Total Recycled Water Demand[(c)] | 632 | 865 | 1,096 | 1,329 | 1,559 |
| **Total Water Demand** | **13,838** | **15,056** | **16,342** | **17,711** | **19,162** |

(a) Data from the *City of Brentwood 2015 UWMP,* Table 4-4.

## 5.1 Dry Year Water Demand

As shown in Table 5-1, the City's 2015 demand was significantly lower than the 2010 demand in response to the drought and the Governor's April 2015 Executive Order B-29-15 mandating 25 percent water conservation statewide. To reduce water use by 25 percent statewide, the State Water Resource Control Board (SWRCB) adopted a regulation which placed each urban water supplier into one of nine tiers which were assigned a conservation standard, ranging between 4 percent and 36 percent. Each month, the SWRCB compared each urban water supplier's water use with their use for the same month in 2013 to determine if they were on track for meeting their conservation standard. The City of Brentwood was initially placed into Tier 8 with a water conservation standard of 32 percent as compared to 2013 use (the City's conservation standard was reduced to 28 percent in early 2016) (SWRCB, 2015; SWRCB, 2016).

In response, the City adopted a Resolution at their April 28, 2015 Council meeting requiring customers to reduce potable water use by 35 percent relative to the amounts they used in 2013. Besides implementing the mandatory restrictions set by the State, the City increased the frequency of their water conservation workshops and disseminated additional information to the public encouraging water conservation. Penalties were levied to those customers that were non-compliant with the mandatory 35 percent reduction. Water use in 2015 reflects water conservation efforts as a result of the Governor's Executive Order precipitated by a four-year drought in California. (City of Brentwood 2015 UWMP)

The City currently has a demand management program in place, as described in Section 9 of the City's 2015 UWMP. The projected future water demand presented in Table 5-2 includes continued implementation of the City's existing demand management program, and is based on future normal hydrologic years. The City's Water Shortage Contingency Plan, outlined in Section 8 of the City's 2015 UWMP, includes a four-stage plan describing specific actions to reduce water demand by up to 50 percent in the event of a water supply shortage or emergency. In the City's 2015 UWMP and this WSA, the additional water conservation which may occur in single dry or multiple dry years is not assumed to happen. This is a conservative assumption, as additional water conservation may indeed occur as a result of the City's implementation of additional water conservation measures in response to multiple dry years or other water supply shortages.

Table 5-3 presents the projected future dry year potable water demand.

**Table 5-3. Projected Future Dry Year Total Water Demand, af/yr**

| Hydrologic Condition | Demand Reduction | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|---|
| Single Dry Year[(b)]r | 0% | 13,838 | 15,056 | 16,342 | 17,711 | 19,162 |
| Multiple Dry Years [(b,c)] | 0% | 13,838 | 15,056 | 16,342 | 17,711 | 19,162 |

(a) Conservatively assumes no demand reduction in dry years. Demands may be reduced in dry years as a result of the City's implementation of its Water Shortage Contingency Plan; however, such a demand reduction is not assumed or relied upon for the purposes of the Single Dry Year and Multiple Dry Year evaluations for this WSA.
(b) Data from the City of Brentwood 2015 UWMP, Table 4 4.
(c) Represents demands for each year of the 3 year multiple dry year period.

## 6.0 CITY OF BRENTWOOD WATER SUPPLIES

*10910(c)(2) If the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from the urban water management plan in preparing the elements of the assessment required to comply with subdivisions (d), (e), (f) and (g).*

*10910(d)(1) The assessment required by this section shall include an identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and a description of the quantities of water received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts*

*10910(d)(2) An identification of existing water supply entitlements, water rights, or water service contracts held by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall be demonstrated by providing information related to all of the following:*

*(A) Written contracts or other proof of entitlement to an identified water supply.*

*(B) Copies of a capital outlay program for financing the delivery of a water supply that has been adopted by the public water system.*

*(C) Federal, state, and local permits for construction of necessary infrastructure associated with delivering the water supply.*

*(D) Any necessary regulatory approvals that are required in order to be able to convey or deliver the water supply.*

*10910(e) If no water has been received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts, the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall also include in its water supply assessment pursuant to subdivision (c), an identification of the other public water systems or water service contract-holders that receive a water supply or have existing water supply entitlements, water rights, or water service contracts, to the same source of water as the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has identified as a source of water supply within its water supply assessments.*

It is anticipated that the Proposed Project, if approved by the City, would be served from City's existing and future portfolio of water supplies. The inclusion of existing and planned future water supplies is specifically allowed by the Water Code:

*Water Code Section 10631(b): Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a).*

The water supply for the Proposed Project will have the same water supply reliability and water quality as the water supply available to the City's other existing and future water customers. Proponents of the Proposed Project will provide their proportionate share of required funding to the City for the acquisition and delivery of treated potable and recycled water supplies to the Proposed Project area.

The water supplies needed to serve the Proposed Project (together with existing water demands and planned future uses) are described in the City's 2015 UWMP. Therefore, the descriptions provided below for the City's water supplies have been taken, for the most part, from the City's 2015 UWMP, which was adopted in June 2016. Supplemental information from other available reports has also been included to provide the most recent data available and to meet the specific requirements of SB 610.

## 6.1 Existing Water Supplies

The City currently receives water supplies from five sources:

- Surface water from the Delta purchased from ECCID. This water is delivered to the City by three separate sources:
  - — Surface water treated at the Randall-Bold Water Treatment Plant, which receives water from the Contra Costa Canal
  - — Surface water treated at the City of Brentwood Water Treatment Plant, which receives water from the Contra Costa Canal
  - — Raw water used for non-potable uses, delivered via the ECCID Canal
- Groundwater pumped from groundwater wells located within the City
- Recycled water treated at the City of Brentwood WWTP. This water may only be used for non-potable uses

Each of these existing supplies is described below.

### 6.1.1 ECCID Surface Water

In 1999, the City entered into an agreement with ECCID that provides the City with a permanent entitlement to purchase 14,800 af/yr of surplus irrigation water from the Delta. ECCID has pre-1914 water rights, which are not subject to delivery reductions during water shortages, including regulatory restricted and drought years. The water purchased by the City may only be used by the City and its retail customers within the City limits or within the ECCID service area. Surface water supplies for the City originate from Rock Slough or Indian Slough. The majority of the supply is transported through the Contra Costa Canal for treatment at either the Randall-Bold Water Treatment Plant (RBWTP) or the City of Brentwood Water Treatment Plant (COBWTP). A small portion of the supply is transported through the ECCID Canal for distribution for non-potable uses. (City of Brentwood 2015 UWMP)

#### *6.1.1.1 Purchased Potable Water from the Randall-Bold Water Treatment Plant*

The City has purchased a permanent capacity share of 6 million gallons per day (mgd) at the Randall-Bold Water Treatment Plant and may use additional capacity on an as-need basis. The City uses the entire 6 mgd, but does not project to use additional capacity in future years. Contra Costa Water District (CCWD) has operated the RBWTP since 1992. The RBWTP has a design capacity to treat up to 40 mgd. The RBWTP is jointly owned by Diablo Water District (DWD) and CCWD. The City receives water from the CCWD portion of the facility. Raw water is pumped to the RBWTP from the Rock Slough intake via the Contra Costa Canal, which is operated by CCWD, for treatment prior to distribution to a public water supply. Water can also be stored in the off-stream Los Vaqueros Reservoir from the Old River and Middle River intakes. During periods of low salinity in the Delta, raw water is pumped into the Los Vaqueros Reservoir and stored for future use. This stored water is supplied to the Contra Costa Canal and blended with raw water from the Rock Slough intake as needed. (City of Brentwood 2015 UWMP)

#### 6.1.1.2 Potable Water from the City of Brentwood Water Treatment Plant

The City of Brentwood Water Treatment Plant was built in 2008 to serve the City. The City and the CCWD constructed the COBWTP as a joint venture. The completed first phase of the COBWTP, which has been constructed and is in operation, can treat up to 16.5 mgd of surface water. However, the COBWTP is designed so that it can be expanded to an ultimate capacity of 33 mgd to serve a portion of the City's projected water demands through 2040. COBWTP processes include flocculation, sedimentation, ozonation, filtration, and disinfection. (City of Brentwood 2015 UWMP)

#### 6.1.1.3 Raw Water from the ECCID Canal

The City obtains raw surface water for non-potable landscape irrigation from the ECCID Canal, which diverts water from the Indian Slough on the Old River. Water is pumped to the non-potable irrigation system via the Roddy Ranch Pump Station, located on the canal. Current users include golf courses, parks, schools, and commercial landscape areas. The City purchased 822 acre-feet in 2015. The City projects a purchase of about 807 acre-feet per year for 2020 through 2040, based on the assumption that 10 percent of the ECCID water entitlement allocated to the COBWTP will be used for non-potable uses (City of Brentwood 2015 UWMP, Table 6-10).

### 6.1.2 Groundwater

*10910(f) If a water supply for a proposed project includes groundwater, the following additional information shall be included in the water supply assessment.*

*10910(f)(1) A review of any information contained in the urban water management plan relevant to the identified water supply for the proposed project.*

*10910(f)(2) A description of any groundwater basin or basins from which the proposed project will be supplied. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current bulletin of the department that characterizes the condition of the groundwater basin, and a detailed description by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), of the efforts being undertaken in the basin or basins to eliminate the long-term overdraft condition.*

*10910(f)(3) A detailed description and analysis of the amount and location of groundwater pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), for the past five years from any groundwater basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historical use records.*

*A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), from any basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historical use records.*

*10910(f)(4) An analysis of the sufficiency of the groundwater from the basin or basins from which the proposed project will be supplied to meet the projected water demand associated with the proposed project.*

*A water assessment shall not be required to include the information required by this paragraph if the public water system determines, as part of the review required by paragraph (1), that the sufficiency of groundwater necessary to meet the initial and projected water demand associated with the project was addressed in the description and analysis required by paragraph (4) of subdivision (b) of Section 10631.*

#### 6.1.2.1 Groundwater Overview

The City pumps groundwater from a portion of the Tracy Subbasin San Joaquin Valley Groundwater Basin underlying the City. The City's 2015 UWMP states that the City has nine permitted groundwater wells within its service area, seven of which are active wells. The City treats groundwater with chloramines at the wellheads prior to delivery to the drinking water distribution system. The City has two main well fields. Wells 6, 7, 8, 14, and 15 are located in the northeast part of the City, and Wells 11, 12 and 13 are in the south part of the City. The total design capacity of the wells is 6.63 mgd. The firm design capacity of the wells, where firm capacity is the capacity of all the wells minus the capacity of the largest well, is 5.19 mgd. Of the two wells that are not in use, Well 9 does not have a disinfection system, and Well 11 is not used because of high nitrate concentrations at this location.

The City's 2017 WMP states that the City only has eight groundwater wells within its service area, five of which are active wells. Well 9 is not mentioned in the 2017 WMP, and it unclear if this well was abandoned or destroyed after the 2015 UWMP was written. Wells 11, 12, and 13 are listed as inactive. The 2017 WMP gives the total capacity of the five wells as 7.2 mgd, which is inconsistent with the lower capacity provided in the 2015 UWMP, given that fewer wells are listed as operating in the 2017 WMP.

For the purposes of this WSA, it is assumed that the capacities given in the 2015 UWMP are correct, as this is the more conservative approach for the purpose of determining if the City has adequate water to supply the Proposed Project.

#### 6.1.2.2 Basin Description

The City's wells are located within the northwest part of the Tracy Subbasin of the San Joaquin Valley Groundwater Basin. The following section describes the Tracy Subbasin, including its water-bearing formations, water levels, and water quality. Much of the following information has been incorporated from the City's 2015 UWMP. Except where noted, the description of the sub-basin is based largely on information provided in the 2003 DWR Bulletin 118, in which the groundwater basin description was last updated in January 2006.

The Tracy Subbasin is not adjudicated and there are no legal restrictions to groundwater pumping. The Tracy Subbasin has a total area of 539 square miles and is bounded by the Diablo Range of the Coast Range foothills to the west, the San Joaquin and Mokelumne Rivers on the north, the San Joaquin River to the east, and the San Joaquin-Stanislaus county line to the south. The Tracy Subbasin is comprised of continental deposits of Late Tertiary to Quaternary age. These deposits include the Tulare Formation, Older Alluvium, Flood Basin Deposits, and Younger Alluvium. The cumulative thickness of these deposits increases from a few hundred feet near the Coast Range foothills on the west to about 3,000 feet along the eastern margin of the sub-basin. The City's wells range in depth from 200 to 660 feet, and draw from the Tulare Formation.

Each of these formations is described below:

- The Tulare Formation is exposed in the Coast Range foothills along the western margin of the sub-basin and dips eastward toward the axis of the San Joaquin Valley. The Tulare Formation is approximately 1,400 feet thick and consists of semi-consolidated, poorly sorted, discontinuous deposits of clay, silt, and gravel. The Corcoran Clay occurs near the top of the Tulare Formation and confines the underlying fresh water deposits. The eastern limit of the Corcoran Clay is near the eastern boundary of the sub-basin. The Tulare Formation is moderately permeable, with most of the larger agricultural, municipal, and industrial wells completed below the Corcoran Clay and capable of producing up to about 3,000 gallons per minute (gpm). Smaller, domestic wells are typically completed above the Corcoran Clay, where the groundwater is often of poor quality. Specific yield values for the Tulare Formation in the San Joaquin Valley and Delta area range from 7 to 10 percent.
- The Older Alluvium is approximately 150 feet thick and consists of loosely to moderately compacted sand, silt, and gravel deposited in alluvial fans during the Pliocene and Pleistocene eras. The Older Alluvium is widely exposed between the Coast Range foothills and the Delta and is moderately to locally highly permeable.
- The Flood Basin Deposits occur in the Delta portion of the sub-basin and are the distal equivalents of the Tulare Formation and Older and Younger alluvial units. The Flood Basin Deposits consist primarily of silts and clays with occasional interbeds of gravel along the present waterways. Because of their fine-grained nature, the Flood Basin Deposits have low permeability and generally yield low quantities of water to wells. Occasional zones of fresh water are found in the Flood Basin Deposits, but they generally contain poor quality groundwater. The maximum thickness of the Flood Basin Deposits is about 1,400 feet.
- The Younger Alluvium includes those deposits that are currently accumulating, including sediments deposited in the channels of active streams, as well as overbank deposits and terraces of these active streams. The Younger Alluvium, consisting of unconsolidated silt, fine- to medium-grained sand, and gravel, is present to depths of less than 100 ft below ground surface (bgs) along the channel of Corral Hollow Creek. Sand and gravel zones in the Younger Alluvium are highly permeable and, where saturated, yield significant quantities of water to wells.

#### *6.1.2.3 Conditions of Overdraft*

There are no published groundwater storage values for the entire Tracy Subbasin. A DWR review of hydrographs for the Tracy Subbasin indicate that the majority of the water levels in wells remained relatively stable over the 10-year period prior to 2006. Seasonal variation resulting from recharge and pumping was evident, but levels were stable overall. In general, conditions since the late 1950's compared to present indicate that the groundwater system has no apparent overdraft, suggesting that historical extraction patterns have not exceeded the safe yield of the basin. A

groundwater budget, estimating the subbasin inflows and outflows, has not been prepared for the subbasin. (City of Brentwood 2015 UWMP)

The Sustainable Groundwater Management Act (SGMA) directs DWR to identify groundwater basins and subbasins that are in conditions of critical overdraft. This designation is determined based upon the presence of "undesirable impacts" such as seawater intrusion, land subsidence, groundwater depletion, and chronic lowering of groundwater levels. Per DWR's current list of critically overdrafted basins, finalized in January 2016, the Tracy Subbasin is NOT designated as a critically overdrafted basin. (City of Brentwood 2015 UWMP)

As part of the California Statewide Groundwater Elevation Monitoring (CASGEM) Program, DWR is required to prioritize California groundwater basins to help identify, evaluate, and determine the need for additional groundwater level monitoring. Per the current CASGEM prioritization, finalized in June 2014, the Tracy Subbasin is a medium priority subbasin. (City of Brentwood 2015 UWMP)

#### *6.1.2.4 Groundwater Management*

The City does not currently have a groundwater management plan, but has several ongoing investigations on both groundwater supply and quality within the City's service area. (City of Brentwood 2015 UWMP). The City of Brentwood became a single-agency Groundwater Sustainability Agency in May 2017 (DWR, 2018). As a medium priority basin, not subject to critical conditions of overdraft, the Tracy Subbasin must be managed under a Groundwater Sustainability Plan by January 31, 2022 (DWR, 2016a).

#### *6.1.2.5 Historical Groundwater Use*

As discussed previously, the City has nine permitted groundwater wells, seven of which are active, according to the 2015 UWMP. The City's groundwater production over the last five years is provided in Table 6-1.

**Table 6-1. City of Brentwood Historical Groundwater Production, af/yr**

| | 2013[a] | 2014[a] | 2015[a] | 2016[b] | 2017[b] |
|---|---|---|---|---|---|
| Total Groundwater Production | 5,119 | 4,502 | 2,541 | 1,328 | 2,081 |

(a) From *City of Brentwood 2015 UWMP*, Table 6-2.
(b) Provided by the City of Brentwood, January 16, 2018

#### *6.1.2.1 Projected Future Groundwater Use*

The City plans to pump groundwater at an estimated rate of 5 mgd through 2040. This rate is slightly less than the firm yield of the City's active wells, as estimated by the City's 2015 UWMP. The amount of groundwater pumped during dry years is not projected to differ from the amount pumped during normal years. The City's projected future groundwater production through 2040 is provided in Table 6-2.

**Table 6-2. City of Brentwood Projected Future Groundwater Production in Normal and Dry Years, af/yr[a]**

| | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|
| Total Groundwater Production During a Normal Year[b] | 5,601 | 5,601 | 5,601 | 5,601 | 5,601 |
| Total Groundwater Production During Dry Years[b] | 5,601 | 5,601 | 5,601 | 5,601 | 5,601 |

(a) From *City of Brentwood 2015 UWMP*, Table 6-10.
(b) The firm design capacity of the City's wells is 5.19 mgd, this total assumes wells are pumping at 5 mgd.

#### *6.1.2.2 Groundwater Sufficiency*

The City's 2015 UWMP addressed the sufficiency of the City's groundwater supplies, in conjunction with the City's other existing and additional water supplies, to meet the City's existing and planned future uses. Based on the information provided above and that included in the City's 2015 UWMP, the City's groundwater supply, together with the City's other existing and additional planned future water supplies, is sufficient to meet the water demands of the Proposed Project, in addition to the City's existing and planned future uses. See Section 7 for a detailed determination of the sufficiency of the City's water supply portfolio, including groundwater, to meet the demands of the Proposed Project.

### 6.1.3 Wastewater and Recycled Water

The City's WWTP receives, treats, and discharges municipal wastewater that is generated, collected, and treated within the City's service area. The WWTP is capable of producing tertiary filtered and disinfected water which meets Title 22 standards for unrestricted non-potable reuse. The WWTP has an average dry weather flow capacity of 5 mgd and was designed to be expandable to an average dry weather flow capacity of 10 mgd. Wastewater from the City that is not reused is treated and discharged to Marsh Creek, which drains to Big Break in the Delta. (City of Brentwood 2015 UWMP)

The recycled water produced by the WWTP may be used for all outdoor irrigation demands in a community, including parks, schools, street medians, residential front and backyard landscaping, and public open space. The recycled water may also be used for industrial uses such as cooling, and for environmental purposes such as wetland and habitat restoration. The recycled water is distributed through the City's non-potable water supply system. This system includes both recycled water and the raw water supplied by ECCID. The system delivers water for irrigation and includes a network of transmission and distribution pipelines and pump stations. Currently, the portion of the non-potable supply system near the Project area in Balfour Road distributes raw water. However, the City plans to convert this portion of the system to primarily deliver recycled water in the future.

## 6.2 Future Water Projects

The inclusion of planned future water supplies in this WSA is specifically allowed by the Water Code:

> *Water Code Section 10631(b): Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a).*

The City has a number of future capital improvement projects planned to maintain and upgrade existing water supply and distribution facilities. However, only one of these projects, the Wastewater Treatment Plant Expansion, has the potential to provide additional future water supply for the City. Phase II of the WWTP Expansion will expand the capacity of the WWTP to 7.5 mgd, and is expected to be completed by 2020. Phase III of the WWTP Expansion will expand the capacity of the WWTP to 10 mgd, and is expected to be completed by 2025. Expanding the capacity of the WWTP increases the potential amount of recycled wastewater available for non-potable use.

## 6.3 Summary of Existing and Additional Planned Future Water Supplies

Table 6-3 provides a summary of the City's 2015 water supply deliveries and projected future available water supply available. A discussion of the future anticipated availability of these existing and additional planned future water supplies during dry years is provided in the next section.

**Table 6-3. City of Brentwood Historical and Projected Water Supplies, af/yr**

| | 2015[a] | 2020[b] | 2025[b] | 2030[b] | 2035[b] | 2040[b] |
|---|---|---|---|---|---|---|
| Groundwater Production[c] | 2,541 | 5,601 | 5,601 | 5,601 | 5,601 | 5,601 |
| ECCID Surface Water, Treated at COBWTP[d] | 3,391 | 7,273 | 7,273 | 7,273 | 7,273 | 7,273 |
| ECCID Surface Water, Treated at RBWTP[d] | 2,164 | 6,721 | 6,721 | 6,721 | 6,721 | 6,721 |
| **Total Potable Water Supply** | **8,096** | **19,595** | **19,595** | **19,595** | **19,595** | **19,595** |
| ECCID Raw Water[d] | 822 | 807 | 807 | 807 | 807 | 807 |
| Recycled Water from City WWTP[e] | 399 | 7,813 | 10,419 | 10,419 | 10,419 | 10,419 |
| **Total Water Supply** | **9,317** | **28,215** | **30,821** | **30,821** | **30,821** | **30,821** |

(a) Actual 2015 water supplies delivered. From *City of Brentwood 2015 UWMP*, Table 6-9.
(b) Projected water supplies available. From *City of Brentwood 2015 UWMP*, Table 6-10.
(c) The firm design capacity of the City's wells is 5.19 mgd, this total assumes wells are pumping 5 mgd.
(d) The total ECCID purchase entitlement is 14,800 af/yr. A portion of this water is treated at RBWTP (6 mgd) and the rest of the total was split between potable and non-potable supplies based on actual 2012 water use. It was assumed that ten percent of the ECCID supply allocated to the COBWTP will be used for non-potable use.
(e) The total recycled water supply is assumed to be 93 percent of the total WWTP capacity. It is assumed the City will expand the WWTP capacity to 7.5 mgd by 2020 and up to 10 mgd by 2025.
(f) Values for projected recycled water supply are the total safe yield from the City's 2015 UWMP. A revised version of Table 6-9 from the City's 2015 UWMP assumed that the reasonably available volume of recycled water is equal to the projected recycled water demand.

## 6.1 Water Supply Availability and Reliability

Water Code Section 10910 (c)(4) requires that a WSA include a discussion with regard to "whether total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses." Accordingly, this WSA addresses these three hydrologic conditions through the year 2040.

In addition, this WSA provides a discussion of the availability and reliability of the City's available water supplies to meet the City's water demands in the event that the City's surface water supplies are limited under emergency water supply conditions.

### 6.1.1 Normal, Single Dry, and Multiple Dry Years

The reliability of each of the City's existing and additional planned water supplies and their projected availability during normal, single dry, and multiple dry years, as described in Section 7 of the City's 2015 UWMP, is described below and summarized in Table 6-4. The City has always met system water demand, regardless of regional hydrology. The City expects no reductions from normal-year supply during single or multiple dry years, as described in detail below. (City of Brentwood 2015 UWMP)

**Table 6-4. Water Supply Reliability in Single Dry and Multiple Dry Years**

| Supply Source | Anticipated Reliability (% of Supply in a Normal Year)[(a)] | |
|---|---|---|
| | Single Dry Years | Multiple Dry Years |
| Groundwater Production | 100 | 100 |
| ECCID Surface Water, Treated at COBWTP | 100 | 100 |
| ECCID Surface Water, Treated at RBWTP | 100 | 100 |
| ECCID Raw Water | 100 | 100 |
| Recycled Water from City WWTP | 100 | 100 |

(a) See Table 6-3 for Projected Water Supply in a Normal Year.

Because ECCID holds pre-1914 water rights, the City's surface water supply is not subject to delivery reductions during water shortages, including regulatory restricted and drought years. Water quality issues are not anticipated to affect this source. Raw water from the Delta is considered a high-quality source and characterized by low to moderate levels of turbidity, minerals, and natural organic matter. Pathogenic organisms tend to be present in low concentrations as well. Other pollutants, such as pesticides, are typically not detected. Both the COBWTP and RBWTP are amply equipped to handle fluctuations in raw water quality and consistently produce a high-quality effluent (City of Brentwood 2015 UWMP).

Contra Costa County does not regulate groundwater pumping with water rights, and the San Joaquin basin is not adjudicated. While DWR has not designated the San Joaquin Basin in overdraft and current groundwater levels and raw water delivery rates are assumed to be constant

for the 2015 UWMP, the City is aware that future conditions may vary. Environmental factors, such as drought conditions, and water quality factors, such as groundwater contamination, have the potential to affect this resource adversely. The City is prepared to manage any changes that may occur due to extended drought or potential effects of climate change adaptively via conservation measures and an increased use of recycled water (City of Brentwood 2015 UWMP). For the purposes of this WSA, it is assumed that the basin will not be placed in a condition of critical overdraft and that water quality issues will not affect the supply. Therefore, groundwater supply is not projected to be affected during single dry or multiple dry years.

The supply of recycled water produced by the City's WWTP should be unaffected by single or multiple dry years. While the supply of wastewater used to produce the recycled water may decrease somewhat if voluntary of mandatory conservation measures are enacted, the amount of wastewater collected by the plant far exceeds the projected demands for recycled water through 2040, as shown in Table 7-1.

### 6.1.1 Emergency Water Supply Conditions

The City's 2015 UWMP includes a Water Shortage Contingency Plan (WSCP) to address situations when catastrophic water supply interruptions occur due to regional power outage, earthquake, or other disasters; and when drought occurs. The City's WSCP includes an analysis of existing and projected water demands and supplies, a water conservation and rationing plan with mandatory prohibitions and penalties, and an analysis of projected revenues and expenditures. The WSCP outlines four stages of action to be undertaken in response to water supply shortages, including up to a 50 percent reduction in water supply and an outline of specific water supply conditions that are applicable to each stage. The City also has a Water Quality Emergency Notification Plan in place to coordinate the City's response in the event of a catastrophic water supply interruption.

Triggering from one stage to the next is done at the recommendation of the Director of Public Works. Factors to take into consideration include decreases in water allotments from the water supply wholesaler such as CCWD or ECCID, from reductions in infrastructure capacity related to the water treatment plants or pipelines, or climate or state political conditions that would impact the allotment of water supply. Consumption reduction methods outlined in the WSCP include limiting or prohibiting the watering of lawns and other landscape areas, restricting water use at outdoor facilities, restrictions on water use for decorative water features, and prohibiting car washes or laundries which do not use recycled or recirculated water. Rate changes and fees may be implemented to penalize excessive water use or violation of water use ordinances. (City of Brentwood 2015 UWMP)

If an emergency were to occur, requiring the City to implement its WSCP, all of the City's customers, including those within the Proposed Project, would be subject to the same water conservation measures and water use restrictions as included in City's WSCP.

## 7.0 DETERMINATION OF WATER SUPPLY SUFFICIENCY BASED ON THE REQUIREMENTS OF SB 610

Water Code Section 10910 states:

> *10910(c)(4) If the city or county is required to comply with this part pursuant to subdivision (b), the water supply assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses.*

Pursuant to Water Code Section 10910(c)(4), and based on the technical analyses described in this Water Supply Assessment, the City finds that the total projected water supplies determined to be available for the Proposed Project during Normal, Single Dry, and Multiple Dry water years during a 20-year projection will meet the projected water demand associated with the Proposed Project, in addition to existing and planned future uses.

Table 7-1 summarizes the projected availability of the City's existing and planned future potable water supplies and the City's projected water demands in normal, single dry and multiple dry years through 2040. Because the Proposed Project was not included in the 2015 UWMP planning area, projected potable and non-potable demands for the Proposed Project are in addition to the demands projected in the 2015 UWMP. For the purposes of this WSA, the City has chosen to assume no demand reductions during dry years.

As described in this WSA, approximately 89 af/yr (29.2 MGY) of non-potable water is needed to meet the landscape irrigation demands at buildout of the Proposed Project. Because recycled water infrastructure may not be initially available to deliver recycled water to the Proposed Project, for the purposes of this WSA it was assumed that all non-potable demands for the Proposed Project will be met initially by raw water. Because the City has a single ECCID purchase entitlement of 14,800 af/yr which covers both potable and raw water purchases, it is assumed that the City will adjust the balance between potable and raw water supplies from ECCID to meet the raw water demands of the Proposed Project. As shown in Table 7-1, the City will still have sufficient potable and raw water supply to meet planned demands through 2040, even with the additional potable and non-potable water demands of the Proposed Project.

As shown in Table 7-1, the planned future recycled water supply surplus is much greater than 89 af/yr (29.2 MGY) through 2040. Therefore, there will be sufficient recycled water supply to meet the non-potable water demands of the Proposed Project once recycled water infrastructure is available to deliver recycled water to the Proposed Project.

**Table 7-1. Summary of Water Demand Versus Supply During Hydrologic Normal, Single Dry, and Multiple Dry Years, af/yr[a,b]**

| | | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|---|
| Available Potable and Raw Water Supply | | 20,402 | 20,402 | 20,402 | 20,402 | 20,402 |
| Potable and Raw Water Demand[c] | 2015 UWMP Projection (No Project)[d] | 13,205 | 14,191 | 15,246 | 16,382 | 17,603 |
| | Increase due to Project[e] | 1,140 | 1,140 | 1,140 | 1,140 | 1,140 |
| | Total Demand with Project | 14,345 | 15,331 | 16,386 | 17,522 | 18,743 |
| Potential Potable and Raw Water Surplus | | 6,057 | 5,071 | 4,016 | 2,880 | 1,659 |
| Available Recycled Water Supply[f] | | 7,813 | 10,419 | 10,419 | 10,419 | 10,419 |
| Recycled Water Demand | 2015 UWMP Projection (No Project)[d] | 632 | 865 | 1,096 | 1,329 | 1,559 |
| | Increase due to Project[g] | 0 | 0 | 0 | 0 | 0 |
| | Total Demand with Project | 632 | 865 | 1,096 | 1,329 | 1,559 |
| Potential Recycled Water Surplus | | 7,181 | 9,553 | 9,323 | 9,090 | 8,860 |

(a) Projected available water supply and water demands are assumed to be the same for normal, single dry, and multiple dry years

(b) Projected water supplies are from *City of Brentwood 2015 UWMP*, Table 6-10, converted to af/yr.

(c) Projected raw water and potable water demands are not estimated separately in the City's 2015 UWMP. Because the City's raw and potable surface water supplies are from the same entitlement, it is assumed that the City will adjust the balance between potable and raw water supplies to meet demands.

(d) Projected water demands are from *City of Brentwood 2015 UWMP*, Table 4-4, converted to af/yr.

(e) From Table 2-3. It is assumed that the non-potable demands for the Proposed Project will initially be met by raw water supplies.

(f) Values for projected recycled water supply are the total safe yield from the City's 2015 UWMP. A revised version of Table 6-9 from the City's 2015 UWMP assumed that the reasonably available volume of recycled water is equal to the projected recycled water demand. In either scenario, the projected recycled water supplies are adequate to meet the demands of the Proposed Project.

(g) Recycled water demand for the Proposed Project may increase to 89 af/yr when recycled water infrastructure is available to deliver recycled water to the Project, and if the Proposed Project connects to it.

## 8.0 WATER SUPPLY ASSESSMENT APPROVAL PROCESS

> *10910 (g)(1) Subject to paragraph (2), the governing body of each public water system shall submit the assessment to the city or county not later than 90 days from the date on which the request was received. The governing body of each public water system, or the city or county if either is required to comply with this act pursuant to subdivision (b), shall approve the assessment prepared pursuant to this section at a regular or special meeting.*
>
> *10911 (b) The city or county shall include the water supply assessment provided pursuant to Section 10910, and any information provided pursuant to subdivision (a), in any environmental document prepared for the project pursuant to Division 13 (commencing with Section 21000) of the Public Resources Code.*

The Brentwood City Council must approve this WSA at a regular or special meeting. Furthermore, the City must include this WSA in the Draft EIR that is being prepared for the Proposed Project.

In addition, SB 221 applies to residential subdivisions of over 500 DUs and requires that the water supplier provide a written verification that the water supply for the project is sufficient, prior to issuance of the final permits. Because the Proposed Project includes up to 2,400 residential DUs, it is subject to the requirements of SB 221 (Government Code Section 66473.7).

## 9.0 REFERENCES

Brown and Caldwell, *City of Brentwood 2015 Urban Water Management Plan*, prepared for the City of Brentwood, June 2016.

California Department of Water Resources, *Groundwater Sustainability Plan (GSP) Emergency Regulations Guide*, Department of Water Resources, July 2016.

California Department of Water Resources, *Bulletin 118 Interim Update 2016*, Department of Water Resources, December 2016.

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De Novo Planning Group, *Existing Conditions Report, City of Brentwood General Plan Update*, prepared for the City of Brentwood, April 2013.

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GBN Partners, "Vineyards at Deer Creek Working Project Description", November 2018.

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State Water Resources Control Board, *Urban Water Supplier Conservation Standard for Extended Emergency Regulation Rulemaking – 2016*, California Water Boards, March 2016, https://www.waterboards.ca.gov/water_issues/programs/conservation_portal/docs/emergency_reg/supplier_standards_effective030116.pdf

# APPENDIX A
## Detailed Water Demand Projections

## Table A-1. Potable and Non-Potable Water Demands for Vineyards at Deer Creek

| Land Use Data | | | Total Water Demand | | | | Potable Water Demand[a] | | Non-Potable Water Demand (Assumed to be ECCID raw water used for Irrigation)[b] | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | Area, acres[c] | Dwelling Units | Water Use Factor[d] | units | Annual Total, MGY | Annual Total, af/year | Annual Total, MGY | Annual Total, af/year | Percent of Area Irrigable | Irrigation Factor af/acre | Annual Total, MGY | Annual Total, af/year |
| Single-family Residential, Unrestricted | 530 | 480[h] | 590[k] | gpd/DU | 103 | 317 | 103 | 317 | | | | |
| Single-family Residential, Active Adult | | 1420[i] | 278[l] | gpd/DU | 144 | 443 | 144 | 443 | | | | |
| Multi-family Residential, Active Adult | | 500[j] | 212[m] | gpd/DU | 39 | 119 | 34 | 103 | 10.0% | 2.5[p] | 5.1 | 15.8 |
| Community Clubhouse | 15 | | 2,000[n] | gpd/acre | 11 | 34 | 10 | 31 | 10.0% | 2.1[q] | 1.0 | 3.1 |
| Commercial and Civic Area[e] | 20 | | 2,000[n] | gpd/acre | 15 | 45 | 13 | 41 | 10.0% | 2.1[q] | 1.3 | 4.1 |
| Agricultural Open Space[f] | 113 | | 0.5[o] | af/acre | 18 | 57 | 0 | 0 | 100.0% | 0.5[o] | 18.4 | 56.5 |
| Detention Basins[g] | 25 | | - | gpd/acre | 0 | 0 | 0 | 0 | | | | |
| Natural Open Space[g] | 112 | | - | gpd/acre | 0 | 0 | 0 | 0 | | | | |
| **Subtotal** | **815** | **2,400** | | | **330** | **1,014** | **304** | **934** | | | **25.9** | **80** |
| Losses[r] | | | 12.5 | percent | 41 | 127 | 38 | 117 | | | 3.2 | 9.9 |
| **Grand Total** | **815** | **2,400** | | | **372** | **1,140** | **342** | **1,051** | | | **29.2** | **89** |

(a) Potable water demand = total water demand - non-potable water demand.

(b) Non-potable water assumed to be used for irrigation purposes for all proposed land use types, except for single-family residential land use type.

(c) From email from GBN staff received on March 7th, 2019.

(d) Water Use Factors for non-residential uses assumed to be based on gross area. Water Use Factors assumed to include irrigation demand.

(e) Potential uses include restaurant, offices, amphitheater, community garden, and commercial nursery.

(f) Crops will primarily be vineyards and olives.

(g) Detention basins and natural open space will not be irrigated.

(h) From Working Project Description for Vineyards at Deer Creek, dated January 14, 2019.

(i) Active adult single-family units = 1,420 DU (1,900 single-family units total (Preliminary Master Water Phasing Exhibit for Vineyards at Deer Creek, dated January 14, 2019) - 480 unrestricted single-family units.)

(j) From Preliminary Master Water Phasing Exhibit Vineyards at Deer Creek, dated January 14, 2019.

(k) Low Density Residential Water Use Factor from the City of Brentwood's Water Master Plan (Ennis Consulting, 2017).

(l) Active adult single-family Water Use Factor is the low density residential Water Use Factor (see footnote l) adjusted to account for the lower average number of people per dwelling unit in active adult communities. The average household size in Brentwood is 3.18 persons per household (City of Brentwood Housing Element, 2015). It is assumed that there will be an average number of 1.5 persons per household in the active adult residences developed for the Project (a similar assumption was made in the Brentwood Golf Course Redevelopment WSA, dated June 13, 2017). Therefore, the active adult single-family Water Use Factor = 278 gpd/DU (590 gpd/DU x (1.5 / 3.18)).

(m) Active adult multi-family Water Use Factor is an adjusted medium density residential Water Use Factor (450 gpd/DU, from City of Brentwood's Water Master Plan (Ennis Consulting, 2017)) adjusted to account for the lower average number of people per dwelling unit in active adult communities. The average household size in Brentwood is 3.18 persons per household (City of Brentwood Housing Element, 2015). It is assumed that there will be an average number of 1.5 persons per household in the active adult residences developed for the Project (a similar assumption was made in the Brentwood Golf Course Redevelopment WSA, dated June 13, 2017). Therefore, the active adult multi-family Water Use Factor = 212 gpd/DU (450 gpd/DU x (1.5 / 3.18)).

(n) Commercial Water Use Factor from the City of Brentwood's Water Master Plan (Ennis Consulting, 2017).

(o) Typical water use factor for vineyards.

(p) Maximum Applied Water Allowance (MAWA) for residential land use irrigation per Model Water Efficient Landscape Ordinance (MWELO) (see Table A-2).

(q) Maximum Applied Water Allowance (MAWA) for non-residential land use irrigation per Model Water Efficient Landscape Ordinance (MWELO) (see Table A-2).

(r) Losses are assumed to be 12.5 percent of water use. Based on the *City of Brentwood 2015 UWMP* (Brown and Caldwell, 2016), Table 4-1.

**Table A-2. Projected Unit Irrigation Demand for City of Brentwood[a]**

| Month | ETo[b], in/mo | MAWA (Residential)[c] | | MAWA (Non-Residential)[d] | |
|---|---|---|---|---|---|
| | | MGY/acre | af/acre | MGY/acre | af/acre |
| January | 1.2 | 0.02 | 0.05 | 0.01 | 0.04 |
| February | 2.0 | 0.03 | 0.09 | 0.02 | 0.07 |
| March | 3.7 | 0.06 | 0.17 | 0.05 | 0.14 |
| April | 5.5 | 0.08 | 0.25 | 0.07 | 0.20 |
| May | 7.1 | 0.11 | 0.33 | 0.09 | 0.27 |
| June | 8.0 | 0.12 | 0.36 | 0.10 | 0.30 |
| July | 8.2 | 0.12 | 0.37 | 0.10 | 0.31 |
| August | 7.4 | 0.11 | 0.34 | 0.09 | 0.28 |
| September | 5.6 | 0.08 | 0.25 | 0.07 | 0.21 |
| October | 3.8 | 0.06 | 0.17 | 0.05 | 0.14 |
| November | 1.9 | 0.03 | 0.09 | 0.02 | 0.07 |
| December | 1.1 | 0.02 | 0.05 | 0.01 | 0.04 |
| **Total** | **55.4** | **0.82** | **2.53** | **0.67** | **2.07** |

[a] Based on the California Code of Regulations, Title 23 Waters, Division 2 DWR, Chapter 2.7 Model Water Efficient Landscape Ordinance (MWELO), updated 2015.

[b] Reference ET is based on City of Brentwood Landscape Project Application (Revised 1/1/2017).

[c] Assumes the maximum allowable ETAF of 0.55 for residential areas.

[d] Assumes the maximum allowable ETAF of 0.45 for non-residential areas.

Notes:

Eppt = Effective Precipitation = 0.25 x Rainfall

ETo = Reference Evapotranspiration

ETAF = Evapotranspiration Adjustment Factor = (PF)/(Irrigation Efficiency)

LA = Landscape Area

MAWA = Maximum Applied Water Allowance, (Eto - Eppt) x 0.62 x [(ETAF x LA)]

PF = Plant Factor based on Hydrozone Area