

City of Morgan Hill
Development Services Department



Monterey Gateway Project
Initial Study/Mitigated Negative Declaration

February 2020

Prepared by



TABLE OF CONTENTS

A.	BACKGROUND	1
B.	SOURCES	2
C.	ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED	4
D.	DETERMINATION	5
E.	BACKGROUND AND INTRODUCTION	6
F.	PROJECT DESCRIPTION.....	6
G.	ENVIRONMENTAL CHECKLIST	13
I.	AESTHETICS.	17
II.	AGRICULTURE AND FOREST RESOURCES.....	19
III.	AIR QUALITY.	20
IV.	BIOLOGICAL RESOURCES.....	29
V.	CULTURAL RESOURCES.....	41
VI.	ENERGY.....	45
VII.	GEOLOGY AND SOILS.	49
VIII.	GREENHOUSE GAS EMISSIONS.	52
IX.	HAZARDS AND HAZARDOUS MATERIALS.....	54
X.	HYDROLOGY AND WATER QUALITY.....	59
XI.	LAND USE AND PLANNING.....	66
XII.	MINERAL RESOURCES.....	67
XIII.	NOISE.....	68
XIV.	POPULATION AND HOUSING.....	78
XV.	PUBLIC SERVICES.....	79
XVI.	RECREATION.	81
XVII.	TRANSPORTATION.....	82
XVIII.	TRIBAL CULTURAL RESOURCES.	93
XIX.	UTILITIES AND SERVICE SYSTEMS.....	94
XX.	WILDFIRE.....	97
XXI.	MANDATORY FINDINGS OF SIGNIFICANCE.....	98

FIGURES

Figure 1: Regional Project Location	7
Figure 2: Project Vicinity Map.....	8
Figure 3: Proposed Site Plan	10
Figure 4: Vesting Tentative Map	11
Figure 5: Landscaping/Outdoor Amenities Plan	14
Figure 6: Preliminary Grading and Utility Plan (Southeast).....	15
Figure 7: Preliminary Grading and Utility Plan (Northwest).....	16
Figure 8: Stormwater Control Plan	62
Figure 9: Study Intersection Locations	83

TABLES

Table 1: Proposed Unit Mix	9
Table 2: BAAQMD Thresholds of Significance	21
Table 3: Maximum Construction Emissions (lbs/day)	22
Table 4: Unmitigated Maximum Operational Emissions	23

Table 5: Unmitigated Year 2023 Project GHG Emissions.....	53
Table 6: Ambient Noise Level Measurement Results	69
Table 7: Noise Level Performance Standards	70
Table 8: Construction Equipment Noise	72
Table 9: Effects of Vibration on People and Buildings	76
Table 10: Vibration Levels for Various Construction Equipment	76
Table 11: Trip Generation Estimates.....	87
Table 12: Existing and Existing Plus Project Conditions Intersection LOS.....	88
Table 13: Cumulative and Cumulative Plus Project Conditions Intersection LOS	90

APPENDICES

Appendix A: Air Quality and Greenhouse Gas Modeling Results
Appendix B: Biological Assessment
Appendix C: Tree Report
Appendix D: Geotechnical Investigation
Appendix E: Phase I and Phase II Environmental Site Assessment
Appendix F: Exterior Noise and Façade Acoustical Analysis
Appendix G: Traffic Impact Analysis

INITIAL STUDY

February 2020

A. BACKGROUND

1. Project Title: Monterey Gateway Project
2. Lead Agency Name and Address: City of Morgan Hill
Development Services Department
Morgan Hill, CA
17575 Peak Avenue
Morgan Hill, CA 95037
3. Contact Person and Phone Number: Tiffany Brown
Associate Planner
(408) 310-4655
4. Project Location: 18110 Monterey Road
Morgan Hill, CA 95037
APN 726-25-006
5. Project Sponsor's Name and Address: Samantha Hauser
City Ventures, LLC
444 Spear Street, Suite 200
San Francisco, CA 94105
(646) 522-4260
6. Existing General Plan Designation: Mixed Use Flex
7. Existing Zoning Designation: Mixed Use Flex (MU-F) (7 to 24 du/ac)
8. Combining District: Block Level Master Plan, Block 4
9. Required Approvals from Other Public Agencies: None
10. Surrounding Land Uses and Setting:

The project site consists of a 5.67-acre triangular-shaped parcel located at 18110 Monterey Road in the City of Morgan Hill, California. The site is identified by Assessor's Parcel Number (APN) 726-25-006. The City's General Plan land use and zoning designation for the site is Mixed Use Flex (MU-F). Currently, the eastern portion of the project site is developed with a mobile home, which is accessed by a paved driveway connecting to Monterey Road. The remainder of the site consists primarily of ruderal grasses that are regularly mowed. Scattered trees are located along the length of the western and eastern site boundaries.

The project site is bounded by Monterey Road to the west and the Union Pacific Railroad (UPRR) tracks to the east. Surrounding uses include a residential subdivision (single-

family detached and townhomes) located west of the site, and additional residential land uses to the south. The area to the east of the site, across the UPRR tracks, is vacant and undeveloped.

11. Project Description Summary:

The proposed project would include a Vesting Tentative Map to subdivide the project site into two parcels and a Design Review Permit to develop 101 multi-family units, a commercial/retail building, and associated improvements. Of the 101 residential units, 15 would be below market rate units and four would be live/work units. The existing mobile home would be demolished. The project would be developed consistent with the General Plan land use and zoning designations.

B. SOURCES

The following documents are referenced information sources used within this analysis:

1. Alameda County Superior Court. *California Building Industry Association v. Bay Area Air Quality Management District*. A135335 and A136212. Filed August 12, 2016.
2. Association of Bay Area Governments. *Dam Failure Inundation Hazard Map for Morgan Hill*. 1995. Available at: http://www.mhcert.com/prepare/dam_failure.shtml. Accessed October 2019.
3. Association of Bay Area Governments. *Resilience Program*. Available at: <http://gis.abag.ca.gov/website/Hazards/?hlyr=liqSusceptibility>. Accessed October 2019.
4. Bay Area Air Quality Management District. *California Environmental Quality Act Air Quality Guidelines* [pg. 7-1]. May 2017.
5. California Air Resources Board. *The 2017 Climate Change Scoping Plan Update*. January 20, 2017.
6. California Department of Conservation. *California Important Farmland Finder*. Available at: <https://maps.conservation.ca.gov/DLRP/CIFF/>. Accessed October 2019.
7. California Department of Resources Recycling and Recovery (CalRecycle). *Facility/Site Summary Details: Johnson Canyon Sanitary Landfill (27-AA-0005)*. Available at: <https://www2.calrecycle.ca.gov/swfacilities/Directory/27-AA-0005>. Accessed December 2019.
8. California Energy Commission. *Title 24 2019 Building Energy Efficiency Standards FAQ*. November 2018.
9. California Historical Resources Information System. *Record search results for the Monterey Gateway Project located at 18110 Monterey Road, Morgan Hill, Santa Clara County, California*. March 28, 2019.
10. California Historical Resources Information System. *Record search results for the proposed Monterey Gateway Project located at 18110 Monterey Road, Morgan Hill, Santa Clara County, California*. November 13, 2019.

11. City of Morgan Hill Public Works Department. *Schedule of Development Impact Fees*. January 15, 2020.
12. City of Morgan Hill. *2015 Urban Water Management Plan*. 2016.
13. City of Morgan Hill. *2035 General Plan, City of Morgan Hill*. Adopted July 2016.
14. City of Morgan Hill. *City Council Staff Report 2163, Accept Report Regarding Wastewater System Needs and Rate Study Schedule*. February 6, 2019.
15. City of Morgan Hill. *City of Morgan Hill Wildland Urban Interface Map*. March 2009.
16. City of Morgan Hill. *Emergency Operations Plan*. January 11, 2018.
17. City of Morgan Hill. *Housing Element*. Adopted February 18, 2015.
18. City of Morgan Hill. *Morgan Hill 2035 Final Environmental Impact Report*. Adopted July 2016.
19. Department of Conservation. *State of California, Special Studies Zones, Mt. Madonna Quadrangle, Revised Official Map*. Effective January 1, 1976.
20. Federal Emergency Management Agency. *National Flood Hazard Layer FIRMette*. Accessed October 2019.
21. Hexagon Transportation Consultants, Inc. *Monterey Gateway Traffic Impact Analysis (TIA)*. November 27, 2019.
22. Horticultural Associates. *Tree Preservation and Mitigation Report, Morgan Hill 7 Subdivision, 18110 Monterey Street, Morgan Hill, CA*. September 26, 2019.
23. Johnson Marigot Consulting, LLC. *Preliminary Biological Assessment, 18110 Monterey Road, Morgan Hill, California*. December 12, 2019.
24. Native American Heritage Commission. *Monterey Gateway Project, Santa Clara County*. November 5, 2019.
25. Natural Resources Conservation Service. *Web Soil Survey*. Available at: <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>. Accessed October 2019.
26. Quantum Geotechnical, Inc. *Geotechnical Investigation on Proposed Residential Development at 18110 Monterey Road, Morgan Hill, California*. August 6, 2019.
27. Salinas Valley Solid Waste Authority. *2016-17 Annual Report*. 2018.
28. Santa Clara County. *Comprehensive Land Use Plan, Santa Clara County, South County Airport*. Amended November 16, 2016.
29. Santa Clara Valley Transportation Authority. *2015 Congestion Management Plan*. October 2015.

30. Santa Clara Valley Water District. *2016 Groundwater Management Plan, Santa Clara and Llagas Subbasins*. November 2016.
31. Santa Clara Valley Water District. *C1: Anderson Dam Seismic Retrofit**. Available at: <https://www.valleywater.org/anderson-dam-project>. Updated November 2018.
32. Stantec Consulting Services, Inc. *Phase I and II Environmental Site Assessment, Morgan Hill, 18110 Monterey Drive, Morgan Hill, California*. September 11, 2017.
33. Veneklasen Associates. *Morgan Hill, California, Exterior Noise and Façade Acoustical Analysis, VA Project No. 4616-015*. November 26, 2019.
34. Veneklasen Associates. *Exterior Noise Analysis – Barrier Wall from Building 10 through Building 14*. January 30, 2020.

C. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is “Less Than Significant with Mitigation Incorporated” as indicated by the checklist on the following pages.

- | | | |
|--|---|--|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture and Forest Resources | <input type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Energy |
| <input type="checkbox"/> Geology and Soils | <input type="checkbox"/> Greenhouse Gas Emissions | <input checked="" type="checkbox"/> Hazards and Hazardous Materials |
| <input type="checkbox"/> Hydrology and Water Quality | <input type="checkbox"/> Land Use and Planning | <input type="checkbox"/> Mineral Resources |
| <input checked="" type="checkbox"/> Noise | <input type="checkbox"/> Population and Housing | <input type="checkbox"/> Public Services |
| <input type="checkbox"/> Recreation | <input type="checkbox"/> Transportation | <input type="checkbox"/> Tribal Cultural Resources |
| <input type="checkbox"/> Utilities and Service Systems | <input type="checkbox"/> Wildfire | <input checked="" type="checkbox"/> Mandatory Findings of Significance |

D. DETERMINATION

On the basis of this initial study:

- ☐ I find that the Proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☒ I find that although the Proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the applicant. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☐ I find that the Proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed project MAY have a “potentially significant impact” or “potentially significant unless mitigated” on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature

Jennifer Carman, Development Services Director
Printed Name

Date

City of Morgan Hill
For

E. BACKGROUND AND INTRODUCTION

The mitigation measures prescribed for environmental effects described in this IS/MND would be implemented in conjunction with the project, as required by CEQA. The mitigation measures would be incorporated into the project through project Conditions of Approval. The City would adopt findings and a Mitigation Monitoring/Reporting Program for the project in conjunction with approval of the project.

In July 2016, the City of Morgan Hill adopted the 2035 General Plan,¹ as well as an associated Environmental Impact Report (EIR) for the updated General Plan.² The General Plan EIR is a program EIR, prepared pursuant to Section 15168 of the CEQA Guidelines (Title 14, California Code of Regulations, Sections 15000 *et seq.*). The General Plan EIR analyzed full implementation of the General Plan and identified measures to mitigate the significant adverse impacts associated with the General Plan. The City of Morgan Hill 2035 General Plan designates the site as Mixed Use Flex (MU-F) (7 to 24 du/ac) with Block Level Master Plan, which permits residential, commercial, and office uses with a maximum floor area ratio (FAR) of 0.5. The proposed project would include multi-family residential uses at a density of 17.82 dwelling units per acre (du/ac), as well as approximately 2,500 square feet of commercial/retail uses and 1,044 square feet of live/work space. Thus, the proposed project would be consistent with the General Plan.

Pursuant to Section 15152 of the CEQA Guidelines, a project which is consistent with the General Plan and zoning of the City may tier from the analysis contained in the General Plan EIR, incorporating by reference the general discussions from the broader EIR. Given that the proposed project would be consistent with the site's current General Plan land use designation of MU-F, the environmental analysis contained in this IS/MND tiers, where applicable, from the General Plan EIR in accordance with CEQA Guidelines Section 15152.

On February 20, 2019, the City adopted Ordinance No. 2298, establishing a Planned Development (PD) Combining District to establish a Block-Level Master Plan (BLMP) for Monterey Road Corridor Block Four, which included the subject site. The rezone establishing the BLMP PD relied upon an Addendum to the EIR (prepared April 4, 2018) for the City of Morgan Hill's Morgan Hill 2035 Project (certified July 27, 2016) for the City of Morgan Hill Zoning Code Update. Pursuant to Section 15183 of the CEQA Guidelines, the City determined that additional environmental review was not necessary for the establishment of the BLMP PD. This document evaluates the project specific impacts that the project may have on the environment.

F. PROJECT DESCRIPTION

The following provides a description of the project site's current location and setting, as well as the proposed project components and the discretionary actions required for the project.

Project Location and Setting

The project site consists of a 5.67-acre triangular-shaped parcel located at 18110 Monterey Road in the City of Morgan Hill, California (see Figure 1 and Figure 2). The site is identified by Assessor's Parcel Number (APN) 726-25-006. The City's General Plan land use and zoning designation for the site is Mixed Use Flex (MU-F) within Block 4 of a Block Level Master Plan PD Combining District.

¹ City of Morgan Hill. *2035 General Plan, City of Morgan Hill*. Adopted July 2016.

² City of Morgan Hill. *Morgan Hill 2035 Final Environmental Impact Report*. Adopted July 2016.

Figure 1
Regional Project Location

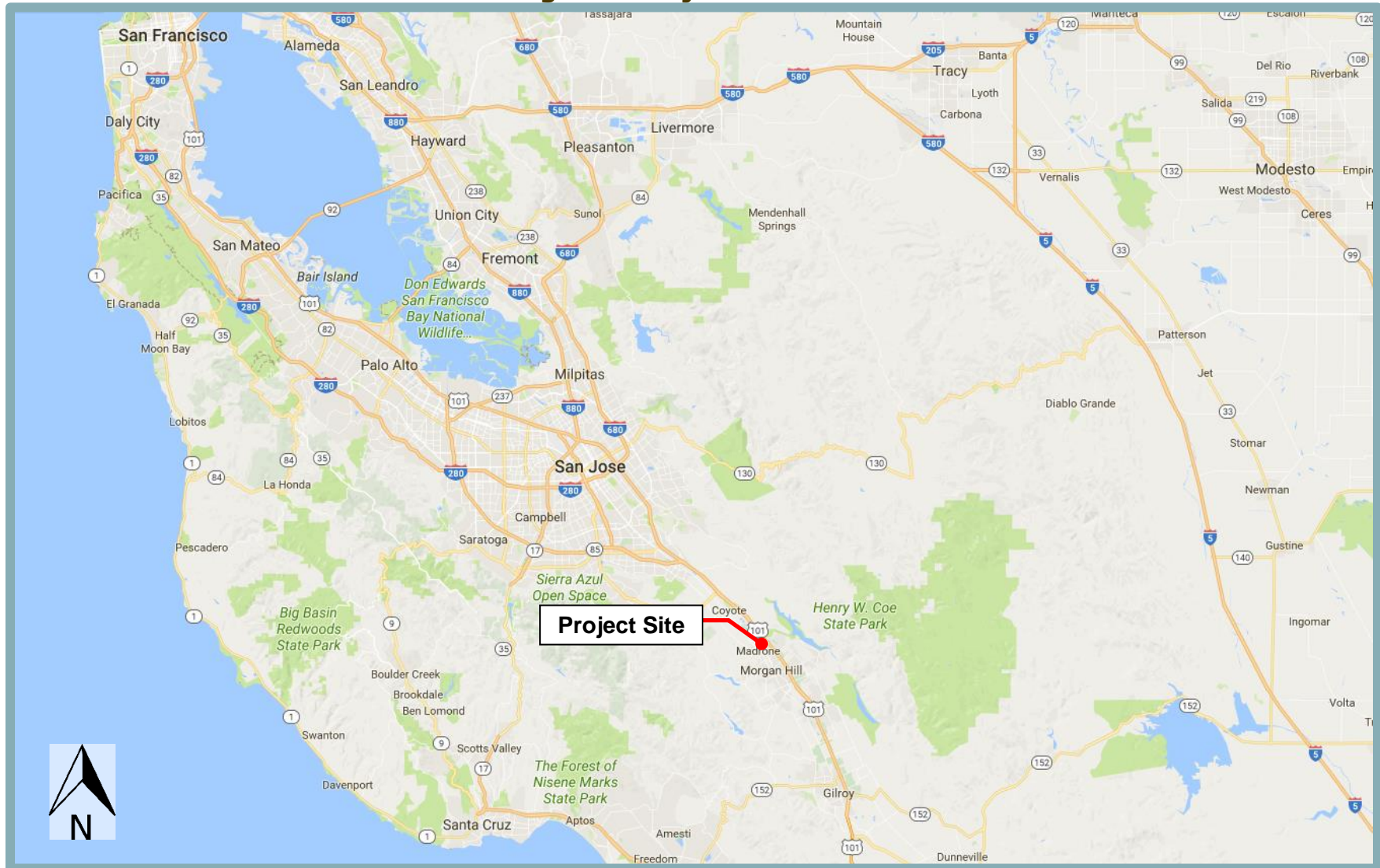


Figure 2
Project Vicinity Map



Currently, the eastern portion of the project site is developed with a mobile home, which is accessed by a paved driveway connecting to Monterey Road. The remainder of the site consists primarily of ruderal grasses that are regularly mowed. Scattered trees are located along the length of the western and eastern site boundaries. The topography of the site is relatively flat, with an elevation of approximately 357 feet above mean sea level (msl).

The project site is generally bounded by Monterey Road to the west and UPRR tracks to the east. A rail overcrossing is located at Monterey Road to the northwest of the project site, with Monterey Road sloping downward at the approach to the crossing. A sloped embankment separates Monterey Road from the northern portion of the project site. It should be noted that the project site does not include the vegetated embankment along the east side of Monterey Road. Surrounding uses include a single-family residential subdivision to the west and a single-family residence to the south. The area to the east of the site, across the UPRR tracks, is vacant and undeveloped. It should be noted, however, that this property has received planning-level entitlements from the City for a project known as the Butterfield-Keenan General Plan Amendment Project, allowing development of the area with up to 409 multi-family, duplex, or single-family residential units. The project is currently going through the City's design review process.

Project Components

The proposed project would include a Vesting Tentative Map to subdivide the project site into two parcels and a Design Review Permit to develop 101 multi-family units (including 15 below market rate (BMR) units and four live/work units), a commercial/retail building, and associated improvements (see Figure 3 and Figure 4). The live/work units would include 261 square feet of functioning small-scale office space, with typical uses including, but not limited to, home offices, insurance sales and real estate brokerages. The residential units would include 1,190 to 2,310 square feet of living space, private decks/porches, and between 476 to 605 square feet of garage space. The 101 units would be distributed between 16 separate buildings, with individual entries provided for each unit. The existing mobile home would be demolished. Table 1 below provides a summary of the proposed unit mix.

Table 1 Proposed Unit Mix		
Number of Bedrooms/Baths	Living Space (square feet)	Total Number of Units
2/2.5	1190	10
3/3	1489	10
3/3	1421	40
3/3.5*	1671	13
3/3.5*	1746	14
3/3.5*	1746	9
3/3.5 (live/work)*	1671	4
3/2.5*	2310	1
Total:		101
Notes: <ul style="list-style-type: none">(*) Unit type includes optional four-bedroom/four-bathroom layout.Nine of the proposed units would be American Disabilities Act (ADA)-compliant.		

Figure 3
Proposed Site Plan

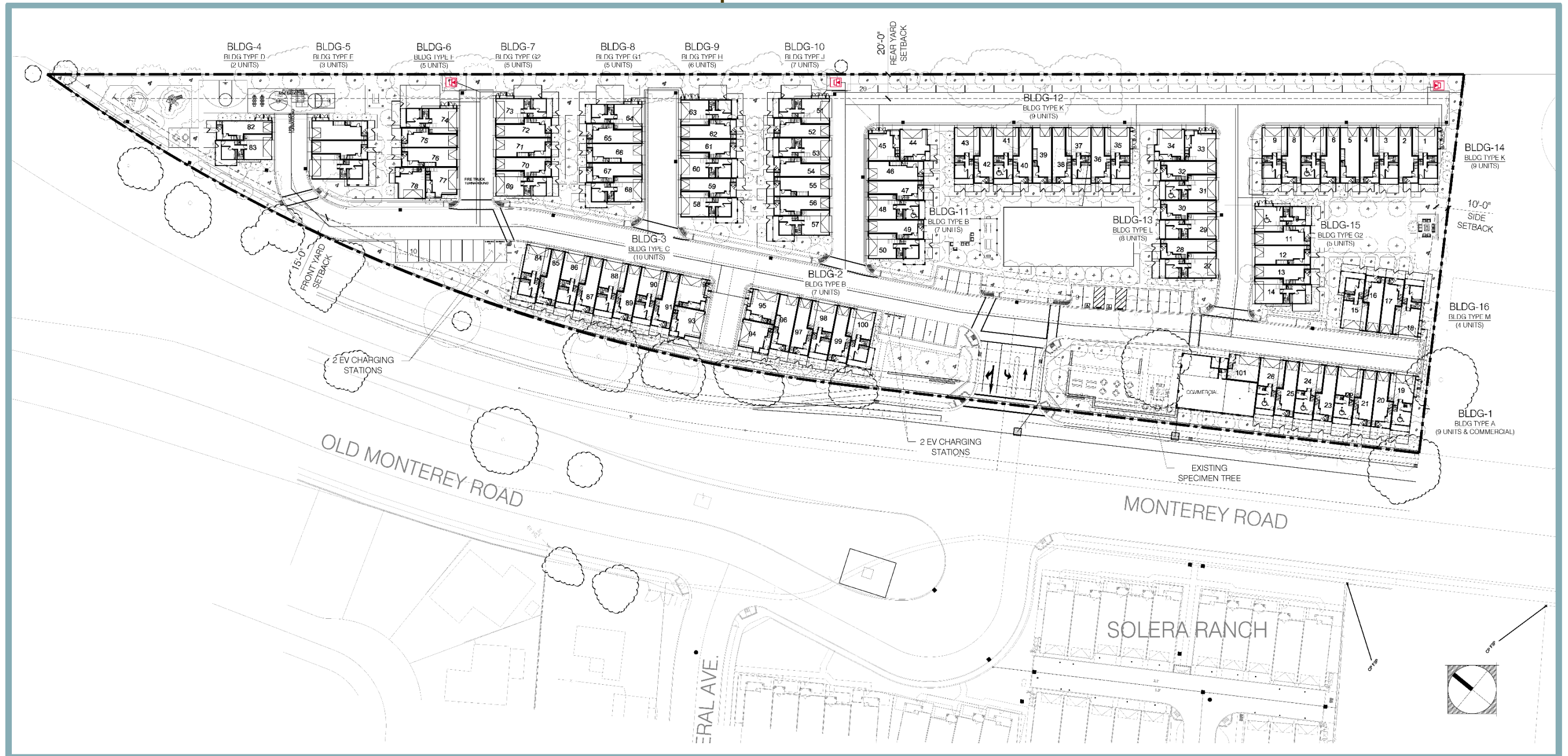
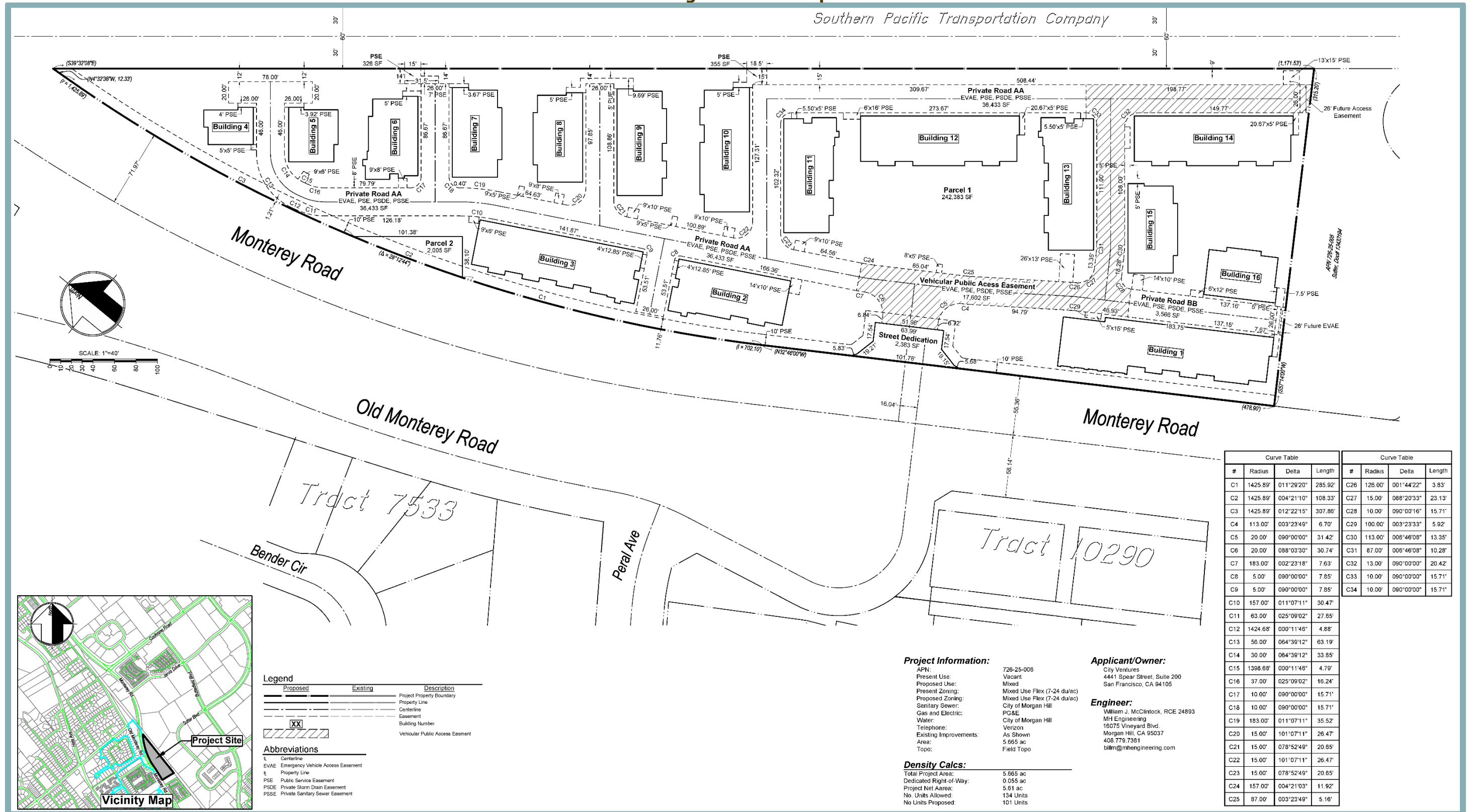


Figure 4
Vesting Tentative Map



The City adopted a Monterey Corridor Block-Level Master Plan Planned Development (BLMP PD) for the Monterey Road Corridor Block Four (Ordinance No. 2298) consistent with Policy CNF-13.4 of the Morgan Hill 2035 General Plan. The project site is located within Block Four and, thus, is covered by the BLMP PD. The BLMP PD includes the land use regulations for the Block. The project has been designed consistent with the BLMP PD.

Within the southwestern portion of the site fronting Monterey Road, the proposed project would include a 2,423 square foot commercial/retail building with 495 square feet of outdoor patio area. A tenant has not been identified for the commercial/retail building. For the purposes of this analysis, the building is assumed to include any of the uses allowable within the MU-F zoning designation, as defined in Section 18.22.020 of the City's Municipal Code. The proposed buildings would be limited to a maximum height of 45 feet, with a minimum of 10 feet devoted to roof elements.

Pursuant to Section 18.74.050 of the City's Municipal Code, landscaping would be provided throughout the site in accordance with the City's Standard Details for Construction. In addition, the project would include multiple common space areas throughout the site. Amenities to be included within the common space areas would include, but not be limited to, a putting green, shaded patio spaces, a basketball area, a sport court, BBQ areas, a bocce ball court, and a tot lot/kids play area. The locations of the proposed outdoor common area amenities are shown in Figure 5.

The proposed residential units would be organized around an internal circulation system consisting of private drive aisles. Hammerhead turnarounds would be provided at key locations within the site, consistent with Morgan Hill Fire Department requirements. Primary access to the internal circulation system would be provided by a new full-access driveway at Monterey Road, directly opposite the existing signalized intersection of Monterey Road and Old Monterey Road. Approximately 2,383 square feet (0.055-acre) at the project entrance would be dedicated to the City as right-of-way, resulting in a net project site acreage of 5.61-acres. The new east approach to the Monterey Road/Old Monterey Road intersection would include a separate left-turn lane and a shared through and right-turn lane.

At the southern site boundary, the project would include a 26-foot-wide future access easement and a 26-foot-wide future emergency vehicle access (EVA) easement. The two easements would allow for potential future connections to the property to the south of the project site. Pedestrian sidewalks would be provided throughout the internal streets. In addition, a new separated sidewalk would be provided along the southern portion of the Monterey Road frontage, connecting to the existing pedestrian sidewalk to the north of the Old Monterey Road/Monterey Road intersection. The existing bike lane along the Monterey Road frontage would be retained.

On-site parking would be provided by private garages within each individual residential unit. Each garage would include two spaces, for a total of 202 garage spaces. In addition, the proposed project would include a total of 52 guest/retail parking spaces arranged perpendicularly to the primary on-site drive aisle. Two of the 52 guest/retail parking spaces would be ADA-compliant and four of the spaces would include electric vehicle (EV) charging stations. Section 18.72.030.C (Guest Parking) of the Morgan Hill Municipal Code requires guest parking for new residential projects. The applicant is requesting a density bonus consistent with Government Code Section 65915 as modified by AB 1763, where it states the City cannot require more than two parking stalls for 2- to 3-bedroom units and 2.5 parking stalls for four or more bedroom units. The project would comply with the parking requirements, with the allowed density bonus concession.

Water and sewer service for the proposed development would be provided by the City through new connections to an existing eight-inch water line in Monterey Road and an existing sewer manhole in Peral Avenue to the west of the site (see Figure 6 and Figure 7). Stormwater would be collected by a series of drain inlets along the internal circulation system and transported, by way of underground storm drains, to an underground pipe manifold storage system located near the center of the site. The pipe manifold storage system would treat and detain all on-site runoff prior to discharging to the City's existing stormwater drain located in Monterey Road.

Off-Site Improvements

To facilitate access to the project site, the proposed project would include addition of a separate southbound left-turn lane designed to accommodate a 75-foot-long queue at the Monterey Road/Old Monterey Road intersection, consistent with the recommendations of the Traffic Impact Analysis prepared for the project. In addition, the project would include restriping of the middle exclusive eastbound left-turn lane to a shared through and left-turn lane. Such improvements would occur within the existing paved right-of-way.

Requested/Required Entitlements

The proposed project would require the City's approval of the following entitlements:

- Adoption of the Initial Study/Mitigated Negative Declaration (IS/MND) and Mitigation Monitoring and Reporting Program;
- Approval of a Vesting Tentative Map (VTM) for APN 726-25-006; and
- Design Review Permit.

G. ENVIRONMENTAL CHECKLIST

The following checklist contains the environmental checklist form presented in Appendix G of the CEQA Guidelines. The checklist form is used to describe the impacts of the proposed project. A discussion follows each environmental issue identified in the checklist. For this checklist, the following designations are used:

Potentially Significant Impact: An impact that could be significant, and for which no mitigation has been identified. If any potentially significant impacts are identified, an EIR must be prepared.

Less Than Significant with Mitigation Incorporated: An impact that requires mitigation to reduce the impact to a less-than-significant level.

Less-Than-Significant Impact: Any impact that would not be considered significant under CEQA relative to existing standards.

No Impact: The project would not have any impact.

Figure 5
Landscaping/Outdoor Amenities Plan



OVERALL SITE PLAN

Figure 6
Preliminary Grading and Utility Plan (Southeast)

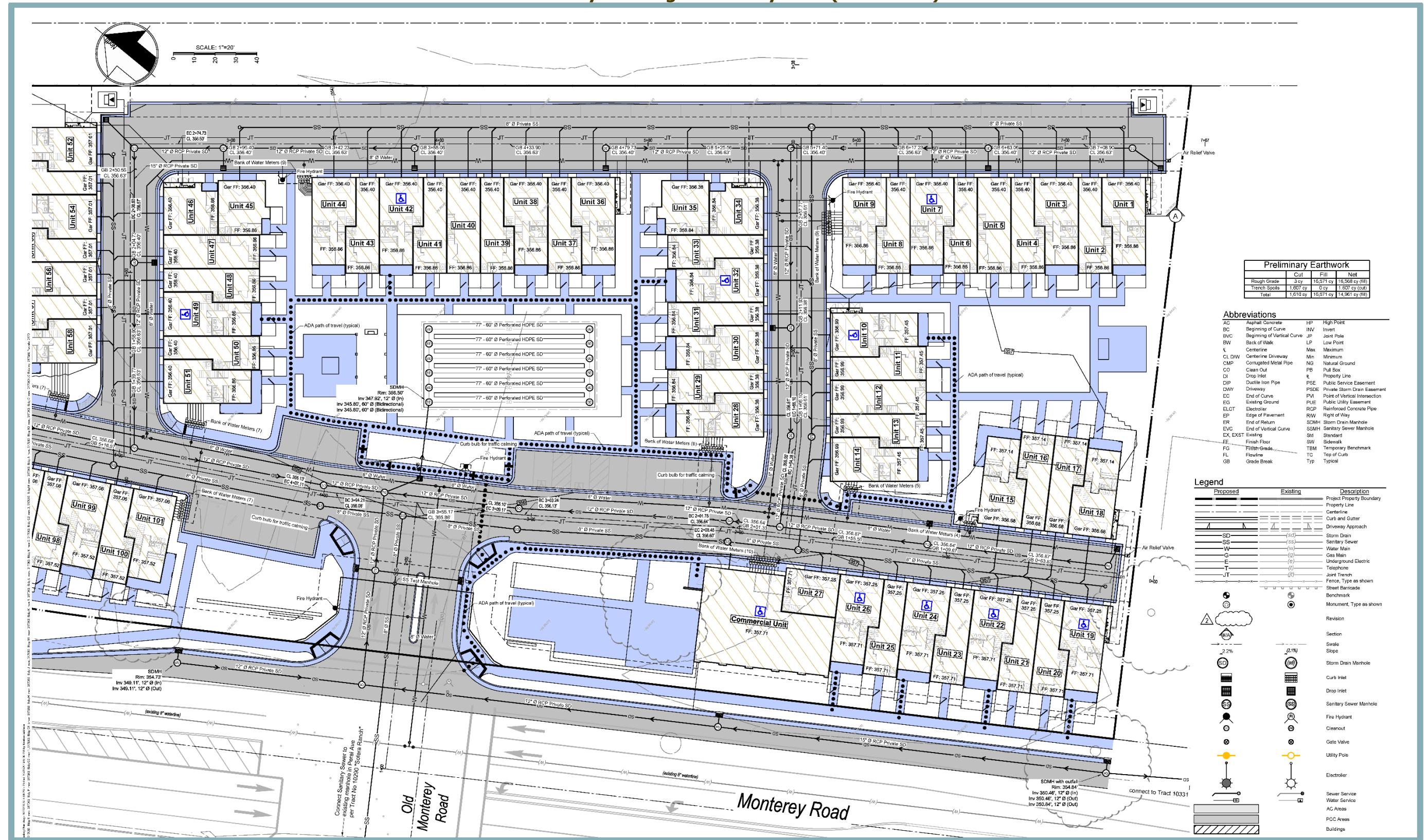
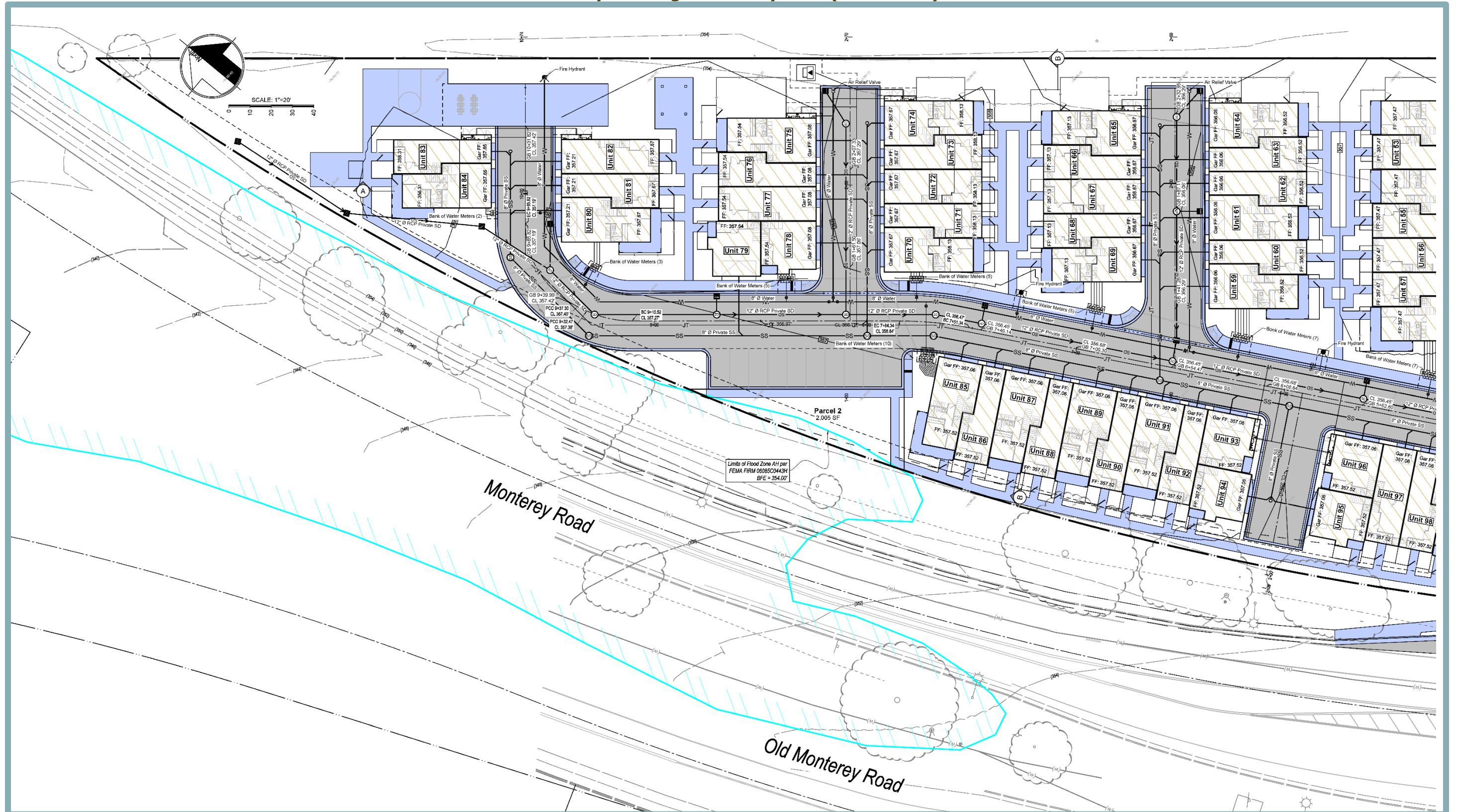


Figure 7
Preliminary Grading and Utility Plan (Northwest)



I. AESTHETICS.

Would the project:

	Potentially Significant Impact	Less-Than- Significant with Mitigation Incorporated	Less-Than- Significant Impact	No Impact
a. Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✗
c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>

Discussion

- a,c. The Morgan Hill General Plan does not designate official scenic view corridors or vistas. However, according to the General Plan, the hillsides that surround the City to the east and west are considered scenic. The project site is surrounded by existing development and is not located on a hillside or in the vicinity of a hillside. While distant views of the hills to the east of the City are visible across the project site from motorists, bicyclists, and pedestrians travelling along Monterey Road, Monterey Road is not considered a scenic vista.³ In addition, such views are partially obscured by existing vegetation along the project frontage and along the UPRR tracks to the east of the site.

With the exception of a single mobile home located within the southeastern portion of the project site, the project site is primarily undeveloped. Surrounding uses include a single-family residential subdivision and two-story multi-family townhomes (Solera Ranch) located west of the site across Monterey Road, as well as a single-family residence and a three-story multi-family townhome development to the south. The area to the east of the site across the UPRR tracks is vacant and undeveloped. Generally, the site is located within an urbanized area.

The proposed project is subject to Design Review in accordance with Morgan Hill Municipal Code Section 18.108.040, which would ensure that the proposed project is consistent with applicable design standards and guidelines in the City's Architectural Review Handbook. The Handbook is intended to create usable and attractive

³ It is important to distinguish between public and private views. Private views are views seen from privately-owned land and are typically viewed by individual viewers, including views from private residences. Public views are experienced by the collective public. These include views of significant landscape features and along scenic roads. California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.) case law has established that only public views, not private views, are protected under CEQA. For example, in *Association for Protection etc. Values v. City of Ukiah* (1991) 2 Cal.App.4th 720 [3 Cal. Rptr.2d 488] the court determined that "we must differentiate between adverse impacts upon particular persons and adverse impacts upon the environment of persons in general. As recognized by the court in *Topanga Beach Renters Assn. v. Department of General Services* (1976) 58 Cal.App.3d 188 [129 Cal.Rptr. 739]: '[A]ll government activity has some direct or indirect adverse effect on some persons. The issue is not whether [the project] will adversely affect particular persons but whether [the project] will adversely affect the environment of persons in general.'" Therefore, it is appropriate to focus the aesthetic impact analysis on potential impacts to public views.

streetscapes, achieve higher design quality, protect natural features through sensitive site planning, create attractive pedestrian-friendly developments, and enhance public safety.

Furthermore, given that the proposed project is consistent with the site's current land use and zoning designations, the City has anticipated buildout of the project site and associated impacts to scenic vistas and other aesthetic resources in the General Plan EIR.⁴ The City's General Plan EIR concluded that buildout of the General Plan, including the project site, would result in a less-than-significant impact related to visual character and quality. Thus, pursuant to CEQA Guidelines Section 15152(d), the analysis presented herein is limited to the effects of the proposed project that were not previously evaluated in the General Plan EIR. The project would not result in any additional environmental effects beyond those which were previously evaluated.

Based on the above, the General Plan does not designate any official scenic vistas within the City of Morgan Hill. The project site is in an urbanized area and the proposed project would be consistent with the site's current General Plan land use and zoning designations. In addition, the design review process would ensure that all project elements are consistent with the City's Architectural Review Handbook. Thus, the proposed project would not have a substantial adverse effect on a scenic vista or conflict with applicable zoning and other regulations governing scenic quality, and a **less-than-significant** impact would occur.

- b. According to the California Department of Transportation (Caltrans) map of Santa Clara County prepared for the Scenic Highway Mapping System, officially designated State or County scenic highways do not occur in the project vicinity. Because the project site is not located in the vicinity of any State scenic highway, the proposed project would not damage any scenic resources within a State scenic highway. Therefore, **no impact** related to damaging scenic resources within a State scenic highway would occur.
- d. Existing development on the project site is limited to a single mobile home located within the southeastern portion of the site. Thus, the site contains relatively minimal sources of light and glare. Development of the proposed project would increase the amount of light including, but not limited to, headlights on cars using the on-site street system, exterior light fixtures, and interior light spilling through windows. However, the existing development to the south and west of the site currently generates light and glare in the area.

In addition, new sources of lighting would be required to comply with the standards set forth in Section G of the City's Architectural Review Handbook, Section 18.76.060 (Glare), and Section 15.40.310 (Open parking lots) of the Morgan Hill Municipal Code, which includes such requirements as cut-off lenses to direct light downward and minimum maintained lighting on parking surfaces. Compliance with such would help to ensure that the light and glare created by the proposed project would be consistent with the levels of light and glare currently emitted in the surrounding developed environment. Therefore, the proposed project would not introduce new sources of substantial light or glare to the site which would adversely affect day or nighttime views in the area, and a **less-than-significant** impact would occur.

⁴ City of Morgan Hill. *Morgan Hill 2035 Final Environmental Impact Report* [pg. 4.1-10]. Adopted July 2016.

II. AGRICULTURE AND FOREST RESOURCES.

Would the project:

	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✗
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✗
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✗
d. Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✗
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✗

Discussion

- a,e. A Phase I and Phase II Environmental Site Assessment (ESA) has been prepared for the project site, which indicates that the site was used for agricultural purposes from at least the 1950s through the 1990s.⁵ While the project site historically contained agricultural uses, the site has not been used recently for agricultural production and is designated as “Other Land” per the California Department of Conservation Farmland Mapping and Monitoring Program (FMMP).⁶ Given the designation of the site as Other Land, development of the proposed project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a non-agricultural use, or otherwise result in the loss of Farmland to non-agricultural use. Therefore, **no impact** would occur as a result of the proposed project.
- b. The project site is not under a Williamson Act contract and is not zoned for agricultural uses. The site is currently zoned MU-F. Therefore, buildout of the proposed project would not conflict with an agricultural use or a Williamson Act contract, and **no impact** would occur.
- c,d. The project site is not considered forest land (as defined in Public Resources Code Section 12220[g]), timberland (as defined by Public Resources Code Section 4526), and is not zoned Timberland Production (as defined by Government Code Section 51104[g]). Therefore, the proposed project would have **no impact** with regard to conversion of forest land or any potential conflict with forest land, timberland, or Timberland Production zoning.

⁵ Stantec Consulting Services, Inc. *Phase I and II Environmental Site Assessment, Morgan Hill, 18110 Monterey Drive, Morgan Hill, California*. September 11, 2017.

⁶ California Department of Conservation. *California Important Farmland Finder*. Available at: <https://maps.conservancy.ca.gov/DLRP/CIFF/>. Accessed October 2019.

III. AIR QUALITY.

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than- Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>
b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>
c. Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>

Discussion

- a,b. The City of Morgan Hill is located in the San Francisco Bay Area Air Basin (SFBAAB), which is under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). The SFBAAB area is currently designated as a nonattainment area for State and federal ozone, State and federal fine particulate matter 2.5 microns in diameter (PM_{2.5}), and State respirable particulate matter 10 microns in diameter (PM₁₀) ambient air quality standards (AAQS). The SFBAAB is designated attainment or unclassified for all other AAQS. It should be noted that on January 9, 2013, the U.S. Environmental Protection Agency (USEPA) issued a final rule to determine that the Bay Area has attained the 24-hour PM_{2.5} federal AAQS. Nonetheless, the Bay Area must continue to be designated as nonattainment for the federal PM_{2.5} AAQS until such time as the BAAQMD submits a redesignation request and a maintenance plan to the USEPA, and the USEPA approves the proposed redesignation. The USEPA has not yet approved a request for redesignation of the SFBAAB; therefore, the SFBAAB remains in nonattainment for 24-hour PM_{2.5}.

In compliance with regulations, due to the nonattainment designations of the area, the BAAQMD periodically prepares and updates air quality plans that provide emission reduction strategies to achieve attainment of the AAQS, including control strategies to reduce air pollutant emissions through regulations, incentive programs, public education, and partnerships with other agencies. The current air quality plans are prepared in cooperation with the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG).

The most recent federal ozone plan is the 2001 Ozone Attainment Plan, which was adopted on October 24, 2001 and approved by the California Air Resources Board (CARB) on November 1, 2001. The plan was submitted to the USEPA on November 30, 2001 for review and approval. The most recent State ozone plan is the 2017 Clean Air Plan (CAP), adopted on April 19, 2017. The 2017 CAP was developed as a multi-pollutant plan that provides an integrated control strategy to reduce ozone, PM, toxic air contaminants (TACs), and greenhouse gases (GHGs). Although a plan for achieving the State PM₁₀ standard is not required, the BAAQMD has prioritized measures to reduce PM in developing the control strategy for the 2017 CAP. The control strategy serves as the backbone of the BAAQMD's current PM control program.

The aforementioned air quality plans contain mobile source controls, stationary source controls, and transportation control measures to be implemented in the region to attain the State and federal AAQS within the SFBAAB. Adopted BAAQMD rules and regulations, as well as the thresholds of significance, have been developed with the intent to ensure

continued attainment of AAQS, or to work towards attainment of AAQS for which the area is currently designated nonattainment, consistent with applicable air quality plans. For development projects, BAAQMD establishes significance thresholds for emissions of the ozone precursors reactive organic gases (ROG) and oxides of nitrogen (NO_x), as well as for PM₁₀, and PM_{2.5}, expressed in pounds per day (lbs/day) and tons per year (tons/yr). The thresholds are listed in Table 2. Thus, by exceeding the BAAQMD's mass emission thresholds for operational emissions of ROG, NO_x, or PM₁₀, a project would be considered to conflict with or obstruct implementation of the BAAQMD's air quality planning efforts.

Table 2 BAAQMD Thresholds of Significance			
Pollutant	Construction	Operational	
	Average Daily Emissions (lbs/day)	Average Daily Emissions (lbs/day)	Maximum Annual Emissions (tons/year)
ROG	54	54	10
NO _x	54	54	10
PM ₁₀ (exhaust)	82	82	15
PM _{2.5} (exhaust)	54	54	10
<i>Source: BAAQMD, CEQA Guidelines, May 2017.</i>			

The proposed project's construction and operational emissions were quantified using the California Emissions Estimator Model (CalEEMod) software version 2016.3.2 - a Statewide model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify air quality emissions, including GHG emissions, from land use projects. The model applies inherent default values for various land uses, including construction data, vehicle mix, trip length, average speed, etc. Where project-specific information is available, such information is applied in the model. The proposed project's modeling assumed the following:

- Construction would commence in July of 2020 and occur over an approximately 2.5-year period;
- The project would include demolition of the existing on-site mobile home;
- Approximately 20 cubic yards (CY) of soil material would be exported during site preparation and 14,960 CY of soil material would be imported during grading activities;
- The project would comply with all applicable provisions of the 2019 CBSC;
- The project would include installation of solar panels with a combined output of approximately 202kWh;
- Installation of low-flow faucets, toilets, and showers, as well as use of water-efficient irrigation systems, was assumed; and
- Vehicle trip rates were adjusted based on the Traffic Impact Analysis prepared for the project by Hexagon Transportation Consultants, Inc.

The proposed project's estimated emissions associated with construction and operations and the project's contribution to cumulative air quality conditions are provided below. All CalEEMod results are included as Appendix A to this IS/MND.

Construction Emissions

According to the CalEEMod results, the proposed project would result in maximum construction criteria air pollutant emissions as shown in Table 3. The proposed project's construction emissions would be below the applicable thresholds of significance.

Table 3 Maximum Construction Emissions (lbs/day)			
Pollutant	Proposed Project Emissions	Threshold of Significance	Exceeds Threshold?
ROG	7.56	54	NO
NO _x	42.49	54	NO
PM ₁₀ (exhaust)	2.20	82	NO
PM ₁₀ (fugitive)	18.22	None	N/A
PM _{2.5} (exhaust)	2.02	54	NO
PM _{2.5} (fugitive)	9.97	None	N/A
Source: CalEEMod, November 2019 (see Appendix A).			

Although thresholds of significance for mass emissions of fugitive dust PM₁₀ and PM_{2.5} have not been identified by the City of Morgan Hill or BAAQMD, the proposed project's estimated fugitive dust emissions have been included for informational purposes. All projects within the jurisdiction of the BAAQMD are required to implement all of the BAAQMD's Basic Construction Mitigation Measures, which would be included in the project approval as Conditions of Approval:

1. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
2. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
3. All vehicle speeds on unpaved roads shall be limited to 15 mph.
4. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
5. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
6. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.
7. Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

The proposed project's required implementation of the BAAQMD's Basic Construction Mitigation Measures listed above for the project's construction activities, would help to further minimize construction-related emissions.

Because the proposed project would be below the applicable thresholds of significance for construction emissions, project construction would not result in a significant air quality impact.

Operational Emissions

According to the CalEEMod results, the proposed project would result in maximum operational criteria air pollutant emissions as shown in Table 4. The proposed project's operational emissions would be below the applicable thresholds of significance. As such, the proposed project would not result in a significant air quality impact during operations.

Table 4					
Unmitigated Maximum Operational Emissions					
Pollutant	Proposed Project Emissions		Threshold of Significance		Exceeds Threshold?
	lbs/day	tons/yr	lbs/day	tons/yr	
ROG	6.41	1.11	54	10	NO
NO _x	5.96	1.01	54	10	NO
PM ₁₀ (exhaust)	0.12	0.02	82	15	NO
PM ₁₀ (fugitive)	4.40	0.77	None	None	N/A
PM _{2.5} (exhaust)	0.12	0.02	54	10	NO
PM _{2.5} (fugitive)	1.18	0.21	None	None	N/A
<i>Source: CalEEMod, May 2019 (see Appendix A).</i>					

Cumulative Emissions

Past, present and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By nature, air pollution is largely a cumulative impact. A single project is not sufficient in size to, by itself, result in nonattainment of AAQS. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant. In developing thresholds of significance for air pollutants, BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. The thresholds of significance presented in Table 2 represent the levels at which a project's individual emissions of criteria air pollutants or precursors would result in a cumulatively considerable contribution to the SFBAAB's existing air quality conditions. If a project exceeds the significance thresholds presented in Table 2, the proposed project's emissions would be cumulatively considerable, resulting in significant adverse cumulative air quality impacts to the region's existing air quality conditions. Because the proposed project would result in emissions below the applicable thresholds of significance, the project would not be expected to result in a cumulatively considerable contribution to the region's existing air quality conditions.

Conclusion

As stated previously, the applicable regional air quality plans include the 2001 Ozone Attainment Plan and the 2017 CAP. According to BAAQMD, if a project would not result in significant and unavoidable air quality impacts, after the application of all feasible mitigation, the project may be considered consistent with the air quality plans. Because the proposed project would result in emissions below the applicable thresholds of significance, the project would not be considered to conflict with or obstruct implementation of regional air quality plans.

Because the proposed project would not conflict with or obstruct implementation of the applicable air quality plans, violate any air quality standards or contribute substantially to an existing or projected air quality violation, or result in a cumulatively considerable net increase in any criteria air pollutant, impacts would be considered ***less than significant***.

- c. Some land uses are considered more sensitive to air pollution than others, due to the types of population groups or activities involved. Heightened sensitivity may be caused by health problems, proximity to the emissions source, and/or duration of exposure to air pollutants. Children, pregnant women, the elderly, and those with existing health problems are especially vulnerable to the effects of air pollution. Accordingly, land uses that are typically considered to be sensitive receptors include residences, schools, childcare centers, playgrounds, retirement homes, convalescent homes, hospitals, and medical clinics. The nearest existing sensitive receptor to the project site would be the single-family residence to the southeast of the site along Monterey Road.

The major pollutant concentrations of concern are localized carbon monoxide (CO) emissions and Toxic Air Contaminants (TAC) emissions, which are addressed in further detail below.

Localized CO Emissions

Localized concentrations of CO are related to the levels of traffic and congestion along streets and at intersections. High levels of localized CO concentrations are only expected where background levels are high, and traffic volumes and congestion levels are high. Emissions of CO are of potential concern, as the pollutant is a toxic gas that results from the incomplete combustion of carbon-containing fuels such as gasoline or wood. CO emissions are particularly related to traffic levels.

In order to provide a conservative indication of whether a project would result in localized CO emissions that would exceed the applicable threshold of significance, the BAAQMD has established screening criteria for localized CO emissions. According to BAAQMD, a proposed project would result in a less-than-significant impact related to localized CO emission concentrations if all of the following conditions are true for the project:

- The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans;
- The project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour; and
- The project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, underpass, etc.).

The project would not conflict with the Santa Clara Valley Transportation Authority (VTA) Congestion Management Program (CMP).⁷ Additionally, existing traffic volumes calculated at study intersections in the project area as part of the Traffic Impact Analysis prepared for the project by Hexagon Transportation Consultants, Inc. show that all of the intersections in the project area experience traffic levels far below 44,000 vehicles during

⁷ Santa Clara Valley Transportation Authority. 2015 *Congestion Management Plan*. October 2015.

AM and PM peak hour periods,⁸ and traffic associated with the proposed development would not increase traffic volumes at an affected intersection to more than 44,000 vehicles per hour. Furthermore, intersections where vertical and/or horizontal mixing is limited due to tunnels, underpasses, or similar features do not exist in the project area. Therefore, based on the BAAQMD's screening criteria for localized CO emissions, the proposed project would not be expected to result in substantial levels of localized CO at surrounding intersections or generate localized concentrations of CO that would exceed standards or cause health hazards.

TAC Emissions

Another category of environmental concern is TACs. The CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (Handbook) provides recommended setback distances for sensitive land uses from major sources of TACs, including, but not limited to, freeways and high traffic roads, distribution centers, and rail yards. The CARB has identified diesel particulate matter (DPM) from diesel-fueled engines as a TAC; thus, high volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic are identified as having the highest associated health risks from DPM. Health risks associated with TACs are a function of both the concentration of emissions and the duration of exposure, where the higher the concentration and/or the longer the period of time that a sensitive receptor is exposed to pollutant concentrations would correlate to a higher health risk.

As part of the *California Building Industry Association v. Bay Area Air Quality Management District* (CBIA) case, the California Supreme Court granted limited review to the question: Under what circumstances, if any, does CEQA require an analysis of how existing environmental conditions will impact future residents or users (receptors) of a proposed project? In the opinion published on December 17, 2015, the Supreme Court looked closely at the language and legislative intent in CEQA, and found that CEQA does not provide "enough of a basis to suggest that the term 'environmental effects' [...] is meant, as a general matter, to encompass these broader considerations associated with the health and safety of a project's future residents or users." Based on the Supreme Court opinion, it would be considered appropriate to evaluate a project's potentially significant exacerbating effects on existing environmental hazards – effects that arise because the project brings "development and people into the area affected." The Supreme Court stated that even in those specific instances where evaluation of a project's potentially significant exacerbating effects on existing environmental hazards is appropriate, the evaluation of how future residents or users could be affected by the exacerbated conditions is still compelled by the project's impact on the environment, and not the environment's impact on the project.⁹

Considering the court ruling, while the proposed project would be considered a sensitive receptor, consideration of impacts from existing TAC sources on future residents, such as the nearby train tracks, is outside of the scope of CEQA. Thus, this environmental analysis appropriately focuses on the potential for the proposed project to result in TAC emissions that could affect the existing nearby sensitive receptors.

⁸ Hexagon Transportation Consultants, Inc. *Monterey Gateway Traffic Impact Analysis (TIA)*. November 27, 2019.

⁹ Alameda County Superior Court. *California Building Industry Association v. Bay Area Air Quality Management District*. A135335 and A136212. Filed August 12, 2016.

The proposed project would not involve any land uses or operations that would be considered major sources of TACs, including DPM. As such, the proposed project would not generate any substantial pollutant concentrations during operations. However, short-term, construction-related activities could result in the generation of TACs, specifically DPM, from on-road haul trucks and off-road equipment exhaust emissions. Construction is temporary and occurs over a relatively short duration in comparison to the operational lifetime of the proposed project. Specifically, as noted above, construction would occur over an approximately 2.5-year period. Mass grading of the project site, when emissions would be most intensive, is estimated to occur over a period of approximately 10 weeks. The exposure period typically analyzed in health risk assessments is 30 years or greater, which is substantially longer than the estimated 2.5-year construction period associated with the proposed project.

All construction equipment and operation thereof would be regulated by the In-Use Off-Road Diesel Vehicle Regulation, which is intended to help reduce emissions associated with off-road diesel vehicles and equipment, including DPM. In addition, the project applicant would be required to prepare, and include on all site development and grading plans, a management plan detailing strategies for control of noise, dust and vibration, and storage of hazardous materials during construction of the project. Pursuant to Section 18.76.040 (Air contaminants) of the City's Municipal Code, the management plan must include all applicable BAAQMD rules and regulations, as well as the City's standard conditions for construction activity, listed below:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
4. All vehicle speeds on unpaved roads shall be limited to 15 mph.
5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.
8. Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

The City of Morgan Hill Development Services Department would ensure that the conditions listed above would be noted on project construction drawings prior to issuance of a building permit or approval of improvement plans.

During construction, only portions of the project site would be disturbed at a time. Operation of construction equipment would occur on such portions of the site intermittently throughout the course of a day over the overall construction period. Because construction equipment on-site would not operate for any long periods of time and would be used at varying locations within the site, associated emissions of DPM would not occur at the same location (or be evenly spread throughout the entire project site) for long periods of time. Due to the temporary nature of construction and the relatively short duration of potential exposure to associated emissions, sensitive receptors in the area would not be exposed to pollutants for a permanent or substantially extended period of time. Furthermore, any one nearby sensitive receptor would be exposed to varying concentrations of DPM emissions throughout the construction period. According to BAAQMD, research conducted by CARB indicates that DPM is highly dispersive in the atmosphere. Thus, emissions at the project site would be substantially dispersed at the nearest sensitive receptors.

Considering the short-term nature of construction activities, the regulated and intermittent nature of the operation of construction equipment, and the highly dispersive nature of DPM, the likelihood that any one sensitive receptor would be exposed to high concentrations of DPM for any extended period of time would be low. For the aforementioned reasons, project construction would not be expected to expose sensitive receptors to substantial pollutant concentrations.

Conclusion

Based on the above discussion, the proposed project would not expose any sensitive receptors to substantial concentrations of localized CO or TACs from construction or operation. Therefore, the proposed project would result in a ***less-than-significant*** impact related to the exposure of sensitive receptors to substantial pollutant concentrations.

- d. Emissions such as those leading to odors have the potential to adversely affect sensitive receptors within the project area. Pollutants of principal concern include emissions leading to odors, emission of dust, or emissions considered to constitute air pollutants. Air pollutants have been discussed in sections “a” through “c” above. Therefore, the following discussion focuses on emissions of odors and dust.

Pursuant to the BAAQMD CEQA Guidelines, odors are generally regarded as an annoyance rather than a health hazard.¹⁰ Manifestations of a person’s reaction to odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache). The presence of an odor impact is dependent on several variables including: the nature of the odor source; the frequency of odor generation; the intensity of odor; the distance of odor source to sensitive receptors; wind direction; and sensitivity of the receptor.

Due to the subjective nature of odor impacts, the number of variables that can influence the potential for an odor impact, and the variety of odor sources, quantification of significant odor impacts is relatively difficult. Typical odor-generating land uses include, but are not limited to, wastewater treatment plants, landfills, and composting facilities. The proposed project would not introduce any such land uses.

¹⁰ Bay Area Air Quality Management District. *California Environmental Quality Act Air Quality Guidelines* [pg. 7-1]. May 2017.

Construction activities often include diesel-fueled equipment and heavy-duty diesel trucks, which can create odors associated with diesel fumes, which could be found to be objectionable. However, as discussed above, construction activities would be temporary, and operation of construction equipment would be regulated and intermittent. Project construction would also be required to comply with all applicable BAAQMD rules and regulations, particularly associated with permitting of air pollutant sources. The aforementioned regulations would help to minimize air pollutant emissions as well as any associated odors. Accordingly, substantial objectionable odors would not occur during construction activities or affect a substantial number of people. In addition, the BAAQMD rules and regulations would act to reduce construction-related dust, which would ensure that construction of the proposed project does not result in substantial emissions of dust. Following project construction, the project site would not include any exposed topsoil. Thus, project operations would not include any substantial sources of dust.

For the aforementioned reasons, construction and operation of the proposed project would not result in emissions (such as those leading to odors) adversely affecting a substantial number of people, and a ***less-than-significant*** impact would result.

IV. BIOLOGICAL RESOURCES.

Would the project:

	Potentially Significant Impact	Less-Than- Significant with Mitigation Incorporated	Less-Than- Significant Impact	No Impact
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	×	<input type="checkbox"/>	<input type="checkbox"/>
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	×	<input type="checkbox"/>
c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	×	<input type="checkbox"/>
d. Interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	×	<input type="checkbox"/>
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	×	<input type="checkbox"/>	<input type="checkbox"/>
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	×	<input type="checkbox"/>	<input type="checkbox"/>

Discussion

The following is based primarily on the Biological Assessment prepared for the proposed project by Johnson Marigot Consulting, LLC (JMC) and peer reviewed by Live Oak Associates, Inc. (see Appendix B).¹¹

- a. Currently, the eastern portion of the project site is developed with a mobile home, which is accessed by a paved driveway connecting to Monterey Road. The remainder of the site consists primarily of ruderal grasses that are regularly mowed. The primary identifiable vegetation on the project site is Bermuda grass (*Cynodon dactylon*). Scattered trees are located along the length of the western and eastern site boundaries.

As noted in the Biological Assessment, a number of native plants and animals have been formally designated as threatened or endangered under State and federal endangered species legislation. Others have been designated as “candidates” for such listing or designated as “species of special concern” by the California Department of Fish and Wildlife (CDFW). The California Native Plant Society (CNPS) has developed its own set of lists of native plants considered rare, threatened, or endangered. Collectively, such plant and wildlife species are referred to as “special status species.” For the purpose of this analysis, special-status species are defined to include the following:

¹¹ Johnson Marigot Consulting, LLC. *Preliminary Biological Assessment, 18110 Monterey Road, Morgan Hill, California*. December 12, 2019.

- Plant and wildlife species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the State and federal Endangered Species Acts;
- CDFW Species of Special Concern;
- CDFW Fully-Protected Species; and
- Plant species on CNPS Lists 1 and 2.

In addition, nesting birds and raptors are protected under the Federal Migratory Bird Treaty Act (MBTA), which prohibits killing, possessing, or trading of migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. The MBTA covers take of whole birds, parts of birds, and bird nests and eggs.

The project site is located within the boundaries of the Santa Clara Valley Habitat Plan (SCVHP), which provides take authorization for 18 listed and non-listed species (i.e. covered species). In addition, the SCVHP includes conservation measures to protect the species covered by the SCVHP, as well as a conservation strategy designed to mitigate impacts on covered species and contribute to the recovery of the species in the study area. Compliance with the SCVHP is discussed under question 'f' below.

As part of the Biological Assessment, a literary review was conducted to evaluate the potential for special-status species to occur within the project area. In addition to a literature review, the CDFW California Natural Diversity Database (CNDDDB) and the CNPS Inventory of Rare, Threatened, and Endangered Plants of California were queried for occurrences of special-status species in the vicinity of the site. In addition, two site visits were conducted on August 19, 2019 and November 17, 2019, respectively. Based on such sources, JMC determined that a total of 14 special-status plant species and nine special-status wildlife species have been documented within the project region.

Special-Status Plant Species

Of the 14 special-status plant species identified in the Biological Assessment, 11 require serpentine soils, which do not exist on the site. The remaining three species grow in coastal sage scrub and foothill woodland chaparral, which is not present on the site. Given the lack of suitable on-site habitat, the aforementioned species are not anticipated to occur on the project site. Furthermore, at the time of the August 19, 2019 site visit, the vast majority of the property had been recently disced; at the time of the follow-on site visit in November 2019, the site was in a similar condition – largely disced, without any noticeable vegetation growth since the August visit. Due to the lack of suitable on-site habitat and the ongoing disturbance that the site has experienced, development of the proposed project would not result in substantial adverse effects to special-status plant species.

Special-Status Wildlife Species

Pursuant to the Biological Assessment, records for nine special-status wildlife species are documented within three miles of the project site. Such species include Bay checkerspot butterfly (*Euphydryas editha bayensis*), California tiger salamander (*Ambystoma californiense*), California red-legged frog (*Rana draytonii*), western pond turtle (*Emys marmorata*), coast horned lizard (*Phrynosoma coronatum*), burrowing owl (*Athene cunicularia*), white-tailed kite (*Elanus leucurus*), American badger (*Taxidea taxus*), and San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*). In addition, various other nesting and migratory birds protected by the MBTA have been documented within

the region. The potential for such species to be impacted by the proposed project is discussed further below.

Bay checkerspot butterfly

The Bay checkerspot butterfly is found in association with serpentine soils and specific host plants. The project site contains neither the correct soils, nor any evidence of the host plants. Thus, development of the proposed project would not result in any substantial adverse effects to Bay checkerspot butterfly.

Special-Status Amphibians and Reptiles

Three of the nine species require specialized habitats that do not occur within the site, including presence of ponding water, that is not found on or around the site. Such species include California tiger salamander, California red-legged frog, and western pond turtle. It should be noted that aerial photo survey indicates the presence of a six-acre seasonally-inundated retention basin (Butterfield Retention Basin), located to the north of the site across the UPRR tracks. The feature appears to hold water for a limited duration each winter, and was constructed sometime between 1998 and 2003. The retention basin dries on an annual basis, and is unlikely to represent habitat for California red-legged frog, California tiger salamander, or western pond turtles, due to the fact that the retention basin was surrounded by urban development at the time of its construction. The Butterfield Retention Basin, similar to the project site, is unlikely to have colonization of such species because the basin is effectively isolated from existing known populations of the species. Additionally, the UPRR tracks that separate the basin from the project site represent a substantial barrier to emigration for the species. Thus, development of the project site is not expected to result in any substantial adverse effect to California tiger salamander, California red-legged frog, or western pond turtle.

An historic record (1894) for the coast horned lizard (*Phrynosoma coronatum*), also referred to as Blainville's horned lizard [*P. blainvillii*], was documented within the vicinity of the City; however, the 1894 record only noted occurrence for the species within seven miles of the project site, with other modern records (1994 through 2009) occurring in the undeveloped areas surrounding the City. Due to the extensive development surrounding the project site, coast horned lizard is not expected to occur onsite. Development of the project site is not expected to result in any substantial adverse effects to coast horned lizard.

American Badger and San Francisco Dusky-Footed Woodrat

American badger and San Francisco dusky-footed woodrat are not covered under the SCVHCP, but have a State ranking of vulnerable (American badger) and imperiled (San Francisco dusky-footed woodrat). During the site survey, middens for San Francisco dusky-footed woodrat were not observed; middens are usually obvious when present and consist of large collections of twigs and wood debris. Similarly, evidence of American badgers, such as burrows or dens, was not noted on the site, and the regular site discing of the project site would prevent establishment of den sites and effectively reduce prey base. Further, neither San Francisco dusky-footed woodrat nor American badger are likely to emigrate to the site due to lack of habitat connectivity and proximity to development. The site is completely surrounded by urban development and does not include natural corridors to existing habitat. Thus, development of the proposed project would not result in substantial adverse effects to American badger or San Francisco dusky-footed woodrat.

Burrowing Owl

Burrowing owls do not require a specific vegetation cover or soil type and typically use vacated burrows dug by small mammals as nesting habitat; however, burrowing owls are also known to use artificial burrows including pipes, culverts, and piles of concrete pieces in urban areas. The project site is located outside of the SCVHP burrowing owl fee area, and is not identified in the SCVHP as “Occupied Nesting Burrowing Owl Habitat”, “Potential Burrowing Owl Nesting/Overwintering Habitat Depending on Site Conditions”, or “Overwintering Only Habitat”.

However, out of an abundance of caution, in the professional judgment of the project biological consultant, the project site should be considered potential nesting/overwintering habitat given that California ground squirrel burrows were found during the November 17, 2019 site visit. Such burrows represent potential nest sites for western burrowing owls. As such, should site grading occur during the nesting season for the species (February 1 through August 31), nests and nestlings potentially present on the site could be adversely affected by the proposed development, and a potentially significant impact could occur.

Nesting Migratory Birds and Raptors

Per the Biological Assessment, the existing on-site trees represent potential nesting habitat for nesting and migratory birds protected by the MBTA, such as special-status white-tailed kite, Swainson’s hawk, and tricolored blackbird. White-tailed kite is a CDFW Fully-Protected Species. Swainson’s hawk and tricolored blackbird are State-listed threatened species.

The grassland within the site provides suitable foraging habitat for such species. In addition, the site is located within 250 feet of the Butterfield Retention Basin, which represents potential nesting substrate for tricolored blackbird; per the SCVHCP, the northern portion of the project site is located within a designated wildlife survey area for the species. The on-site trees represent potential nesting structure for white-tailed kite and Swainson’s hawk. Therefore, project construction activities, including initial site grading, soil excavation, and/or tree and vegetation removal occurring during the nesting period for migratory birds (typically between February 1 to August 31) could have the potential to result in nest abandonment or death of any live eggs or young, should migratory birds or their nests be present within or near the project site. In such an event, the proposed project could result in a potentially significant impact.

Conclusion

Based on the above, development of the proposed project would not result in any substantial adverse effects to special-status plants, as the disturbed nature of the site and the lack of suitable habitat precludes the likely occurrence of such species on the site. However, the site provides potential habitat for burrowing owl and nesting migratory birds and raptors protected by the MBTA, including the special-status white-tailed kite, Swainson’s hawk, and tricolored blackbird. Such species could occur on the project site during construction activities associated with the proposed project. As such, the project could have a substantial adverse effect, either directly or through habitat modifications, on species identified as candidate, sensitive, or special status-species in local or regional plans, policies, or regulations, or by the CDFW or U.S. Fish and Wildlife Service (USFWS), and a **potentially significant** impact could occur.

Mitigation Measure(s)

Implementation of the following mitigation measures would reduce the above potential impact to a less-than-significant level.

- IV-1(a). *Consistent with Condition 15 of the Santa Clara Valley Habitat Plan, prior to any ground disturbance related to covered activities, a qualified biologist will conduct preconstruction surveys in all suitable habitat areas as identified during habitat surveys. The purpose of the preconstruction surveys is to document the presence or absence of burrowing owls on the project site, particularly in areas within 250 feet of construction activity.*

To maximize the likelihood of detecting owls, the preconstruction survey will last a minimum of three hours. The survey will begin 1 hour before sunrise and continue until 2 hours after sunrise (3 hours total) or begin 2 hours before sunset and continue until 1 hour after sunset. Additional time may be required for large project sites. A minimum of two surveys will be conducted (if owls are detected on the first survey, a second survey is not needed). All owls observed will be counted and their location will be mapped.

Surveys will conclude no more than 2 calendar days prior to construction. Therefore, the project proponent must begin surveys no more than 4 days prior to construction (2 days of surveying plus up to 2 days between surveys and construction). To avoid last minute changes in schedule or contracting that may occur if burrowing owls are found, the project proponent may also conduct a preliminary survey up to 14 days before construction. This preliminary survey may count as the first of the two required surveys as long as the second survey concludes no more than 2 calendar days in advance of construction. All survey results shall be submitted to the City of Morgan Hill Development Services Department prior to the start of construction. If burrowing owls are not identified, further action is not required.

- IV-1(b). *Should burrowing owls be found on the site during the breeding season (February 1 through August 31), exclusion zones, with a 250-foot radius from occupied burrows, shall be established. All development-related activities shall occur outside of the exclusion area until the young have fledged. Establishment of the exclusion area shall be determined by a qualified biologist to the satisfaction of the City of Morgan Hill Development Services Department.*

- IV-1(c). *If pre-construction surveys are conducted during the non-breeding season (September 1 through January 31) and burrowing owls are observed on the site, the project proponent shall establish a 250-foot non-disturbance buffer around occupied burrows as determined by a qualified biologist. Construction activities outside of the 250-foot buffer shall be allowed. Construction activities within the non-disturbance buffer shall be allowed if the following criteria are met in order to prevent owls from abandoning important overwintering sites:*

- *A qualified biologist monitors the owls for at least three days prior to construction to determine baseline foraging behavior (i.e., behavior without construction).*
- *The same qualified biologist monitors the owls during construction and finds no change in owl foraging behavior in response to construction activities.*
- *If any change in owl foraging behavior occurs as a result of construction activities, such activities shall cease within the 250-foot buffer.*
- *If the owls are gone for at least one week, the project proponent may request approval from the Habitat Agency that a qualified biologist excavate usable burrows to prevent owls from reoccupying the site. After all usable burrows are excavated, the buffer zone shall be removed, and construction may continue. Monitoring shall continue as described above for the non-breeding season as long as the burrow remains active.*

Passive relocation of owls shall not be permitted unless the positive growth trend described in Section 5.4.6 of the SCVHP is achieved and all passive relocation measures identified in the SCVHP are implemented. The project applicant may choose to obtain an exception that would allow for passive relocation, in which case an application shall be submitted to the Habitat Agency along with a passive relocation plan in accordance with Section 6.6.1, Condition 15, Exceptions to Passive Relocation Prohibition, of the SCVHP. The Habitat Agency shall have the final authority to grant or deny the requested exception.

IV-2(a).

If construction is proposed during breeding season (February 1 to August 31), a pre-construction nesting survey for raptors and other protected migratory birds shall be conducted by a qualified biologist and submitted to the City of Morgan Hill Development Services Department for review no more than 14 days prior to the start of construction. Pre-construction surveys during the non-breeding season (September 1 to January 31) are not necessary for birds, including roosting raptors, as they are expected to abandon their roosts during construction. If these species are deemed absent from the area, no further mitigation is required and construction may occur within 14 days following the survey during the early nesting season (February to May) and within 30 days following the survey during the late nesting season (June to August).

If nesting migratory birds or raptors are detected on or adjacent to the site during the survey, a suitable construction-free buffer shall be established around all active nests. The precise dimension of the buffer (250-foot minimum for certain raptors) shall be determined by the qualified biologist at that time and may vary depending on location, topography, type of construction activity, and species. The buffer areas shall be enclosed with temporary fencing, and construction equipment and workers shall not enter the enclosed setback areas. Buffers shall remain in place for the duration of the breeding season or until it has been confirmed by a qualified biologist that all chicks have fledged and are independent of their parents.

IV-2(b) *If construction activities occur between February 1 and August 31, the applicant shall conduct surveys for Swainson's hawk and white-tailed kite in accordance with the Swainson's Hawk Technical Advisory Committee 2000 guidelines (SHTAC 2000), or current guidance. Surveys will cover a minimum of a 0.5-mile radius around the construction area. If nesting Swainson's hawks or white-tailed kites are detected, a no-disturbance buffer shall be established as determined by the qualified biologist, but shall not be less than 500 feet. Buffers shall be maintained until a qualified biologist has determined that the young have fledged and are no longer reliant upon the nest or parental care for survival.*

If potential nesting trees are to be removed during construction activities, removal shall take place outside of Swainson's hawk and white-tailed kite nesting season and CDFW will develop a plan to replace known nest trees at a ratio of 3:1. Potential nest trees shall include those trees with current (at the time of the surveys) or documented historic use by Swainson's hawk or white-tailed kites for nesting. If replacement planting is implemented, monitoring shall be conducted annually for 5 years to assess the mitigation's effectiveness. The performance standard for the mitigation will be 65% survival of all replacement plantings.

IV-3. *Consistent with Condition 17 of the Santa Clara Valley Habitat Plan, prior to any ground disturbance related to covered activities, a qualified biologist shall investigate whether the nearby Butterfield Retention Basin has been occupied by nesting tricolored blackbirds within the past 5 years. This shall include checking the California Natural Diversity Database, contacting local experts, and conducting a preconstruction survey in all accessible areas identified as supporting potential tricolored blackbird nesting habitat. The survey shall document the current, and to the extent possible, historical presence or absence of nesting colonies of tricolored blackbird. Surveys shall conclude no more than two calendar days prior to construction. If a tricolored blackbird nesting colony is present or has been within the past 5 years, a 250-foot buffer shall be applied from the outer edge of all hydrophytic vegetation associated with the site and the site plus buffer shall be avoided. The Wildlife Agencies shall be notified immediately of nest locations. All survey results shall be submitted to the City of Morgan Hill Development Services Department prior to the start of construction. If current or recent tricolored blackbird nesting colonies are not identified, further action is not required.*

If construction takes place during the breeding season when an active colony is present, a qualified biologist shall monitor construction to ensure that the 250-foot buffer zone is enforced. If monitoring indicates that construction outside of the buffer is affecting a breeding colony, the buffer shall be increased if space allows (e.g., move staging areas farther away). If space does not allow, construction shall cease until the colony abandons the site or until the end of the breeding season, whichever occurs first. The biological monitor shall also conduct training of construction personnel on the avoidance procedures, buffer zones, and protocols in the event that tricolored blackbirds fly into an active construction zone (i.e., outside the buffer zone).

- b,c. Wetlands, trenches, potential waters of the U.S, or other aquatic features were not identified on the project site during the site visits conducted by JMC. In addition, as previously noted, the site has been subject to ongoing disturbance associated with discing, and has been leveled flat. Evaluation of the project site did not indicate any hydrologic connectivity between the project site and the Butterfield Retention Basin located to the north of the site. Therefore, the project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFW or USFWS or have a substantial adverse effect on State or federally protected wetlands through direct removal, filling, hydrological interruption, or other means. Thus, a **less-than-significant** impact would occur.
- d. Movement corridors or landscape linkages are usually linear habitats that connect two or more habitat patches, providing assumed benefits to the species by reducing inbreeding depression and increasing the potential for recolonization of habitat patches. The project site is bounded on the west by Monterey Road, to the south by existing residential development, and to the east by a railroad corridor. West of Monterey Road is residential development. The site is not crossed by any waterways or greenways, nor does the site abut any open space or preserve. Due to the developed nature of the surrounding area, as well as physical barriers to wildlife movement along the project boundaries, the project site does not support any major wildlife movement corridors. As such, the project would not interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of wildlife nursery sites. Thus, a **less-than-significant** impact would occur.
- e. Section 12.32.030 (Permit-Required) of the City of Morgan Hill's Municipal Code requires the approval of a tree removal permit prior to the removal of any Ordinance Sized Trees, defined as a non-indigenous tree with a circumference greater than 40 inches (approximately 12.7 inch diameter) or any indigenous tree with circumference greater than 18 inches (approximately 5.7 inches diameter). According to the City's Code, non-indigenous tree species in residential zones and orchards (including individual fruit trees) are not considered Ordinance Sized Trees. Indigenous tree means any tree native to the Morgan Hill region, such as oaks (all types), Sycamore, California Bay, Madrone, or Alder.

A Tree Preservation and Mitigation Report (Tree Report) was prepared for the proposed project by Horticultural Associates (see Appendix C).¹² Based on the results of the Tree Report, the project site contains a total of 60 trees with diameters greater than four inches (see Figure 8). Of the 60 trees, 39 are native species with a diameter greater than 5.7 inches and, thus, are considered Ordinance Sized Trees. The proposed project would require removal of 19 of the Ordinance Sized Trees, necessitating replacement plantings. The remaining 20 Ordinance Sized Trees would require preservation and/or protection measures.

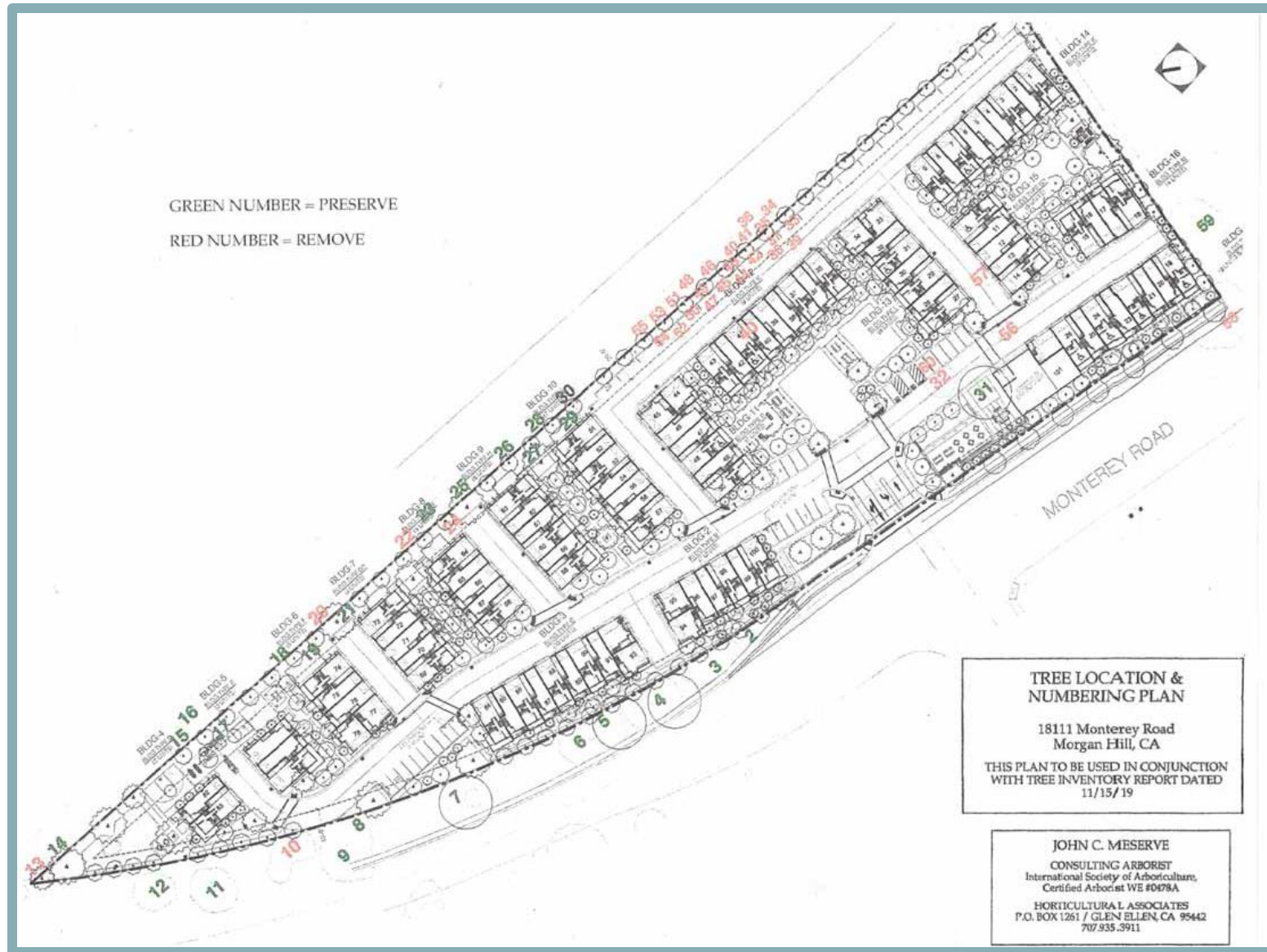
Therefore, the proposed project could have a **potentially significant** impact related to conflicting with local policies or ordinances protecting biological resources, particularly related to Chapter 12.32 (Restrictions on Removal of Significant Trees) of the City's Municipal Code.

¹² Horticultural Associates. *Tree Preservation and Mitigation Report, Morgan Hill 7 Subdivision, 18110 Monterey Street, Morgan Hill, CA*. September 26, 2019.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above potential impact to a *less-than-significant* level.

Figure 8
Tree Locations



- IV-4. *The project applicant shall mitigate for the removal of the Ordinance Sized Trees located within the project site, as identified in the tree survey prepared for the proposed project, by providing an on-site replacement planting at a minimum 1:1 ratio with 15-gallon minimum size trees.*

For the Ordinance Sized Trees to be preserved as part of the project, the project applicant shall retain a certified arborist to prepare a tree protection plan, subject to review and approval by the Development Services Department. The plan shall demonstrate how any retained trees are to be protected during and after construction. The tree protection plan may include, but not be limited to, the following:

- Locate structures, grade changes, etc. as far as feasible from the 'dripline' area of the tree.*
- Avoid root damage through grading, trenching, compaction, etc., at least within an area 1.5 times the 'dripline' area of trees. Where root damage cannot be avoided, roots encountered (over one inch in diameter) should be exposed approximately 12 inches beyond the area to be disturbed (towards tree stem), by hand excavation, or with specialized hydraulic or pneumatic equipment, cut cleanly with hand pruners or power saw, and immediately back-filled with soil. Tearing, or otherwise disturbing the portion of the root(s) to remain, shall be avoided.*
- A temporary fence shall be constructed as far from the tree stem (trunk) as possible, completely surrounding the tree, and six to eight feet in height. 'No parking or storage' signs shall be posted outside/on the fencing. Postings shall not be attached to the main stem of the tree.*
- Vehicles, equipment, pedestrian traffic, building materials, debris storage, and/or disposal of toxic or other materials shall not be permitted inside of the fenced off area.*
- The project applicant shall avoid pruning immediately before, during, or immediately after construction impact. Perform only that pruning which is unavoidable due to conflicts with proposed development. Aesthetic pruning should not be performed for at least one to two years following completion of construction.*
- Trees that will be impacted by construction may benefit from fertilization, ideally performed in the fall, and preferably prior to any construction activities, with not more than six pounds of actual nitrogen per 1,000 square feet of accessible 'drip line' area or beyond.*
- The 'rooting' area shall be mulched with an acidic, organic compost or mulch.*
- The project applicant shall arrange for periodic (Biannual/Quarterly) inspection of tree's condition, and treatment of damaging conditions (insects, diseases, nutrient deficiencies, etc.) as such conditions occur, or as appropriate.*
- Subject to the discretion of the Development Services Department, individual trees likely to suffer significant impacts may require*

*specific, more extensive efforts and/or a more detailed specification
than those contained within the above general guidelines.*

- f. As noted above, the project site is located within the boundaries of the SCVHP permit area. The SCVHP was developed through a partnership between Santa Clara County, the cities of San José, Morgan Hill, and Gilroy, the Santa Clara Valley Water District (SCVWD), the Santa Clara VTA, the USFWS, and the CDFW. The SCVHP is intended to promote the recovery of endangered species and enhance ecological diversity and function, while accommodating planned growth in approximately 500,000 acres of southern Santa Clara County. The SCVHP provides take authorization for 18 covered species and includes conservation measures to protect the species covered by the SCVHP, as well as a conservation strategy designed to mitigate impacts on covered species and contribute to the recovery of the species in the study area. Per the SCVHP, the project site is designated as a “Grain, Row-crop, Hay and Pasture, Disked / Short-term Fallowed” land cover type.

Compliance with the SCVHP requires payment of fees according to the Fee Zone designation of the property, payment of nitrogen deposition fees related to the number of anticipated car trips resulting from the development, and any surcharge fees that are required based on site-specific impacts to sensitive habitats or sensitive species. The project site is within Fee Zone B (Agricultural and Valley Floor Lands). As such, the proposed project would be subject to Zone B fees, which are currently \$14,725 per acre (2018/2019 rates). In addition, the project would be subject to nitrogen deposition fees, which, as of 2019, are \$4.96 for each new vehicle trip. For any temporary impacts, all the same fees are applied, but at a fraction of the total cost, depending on how long the project expects the temporary impact to last.

In addition to fees, the proposed project would be required to comply with applicable conditions of the SCVHP. Compliance with such conditions would be ensured with implementation of Mitigation Measures IV-1 through IV-4 above. However, should the proposed project not comply with the mitigation requirements of the SCVHP for covered species during construction or fulfill payment of necessary fees, the project could conflict with the SCVHP. Thus, a ***potentially significant*** impact could occur.

- IV-5. *No later than submittal of the first construction or grading permit for the proposed project the owner or designee shall pay the Santa Clara Valley Habitat Plan per-acre fee in effect for the appropriate fee zone of the project site, as determined by the Santa Clara Valley Habitat Agency, in compliance with Section 18.132.050 of the Morgan Hill Municipal Code.*

V. CULTURAL RESOURCES.

Would the project:

	Potentially Significant Impact	Less-Than- Significant with Mitigation Incorporated	Less-Than- Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>
b. Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>
c. Disturb any human remains, including those interred outside of dedicated cemeteries.	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>

Discussion

a-c. The site contains an existing mobile home that was constructed in approximately 1950. Structures that are 50 years of age or older may be eligible for consideration as historic resources under the California Register of Historic Places (CRHP) and the National Register of Historic Places (NRHP). Thus, the structure has been evaluated pursuant to the CRHP and NRHP criteria. The CRHR eligibility criteria include the following:

- (1) It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the U.S.;
- (2) It is associated with the lives of persons important to local, California, or national history;
- (3) It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or
- (4) It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

In addition, the resource must retain integrity. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association.

The existing on-site residence is a mobile home with a shingled roof. The structure is not known to be associated with any significant historical events in the project region or California, and is not likely to yield information important to the prehistory or history of the local area, California, or the nation. In addition, the structure has not been occupied or owned by any persons important to local, State, or national history, and does not possess any unique architectural elements. Based on the above, the existing on-site structure is not eligible for consideration as a historical resource per the CRHR eligibility criteria, and, thus, would not be considered a historical resource. Demolition of the structure as part of the proposed project would not result in any historical resource impacts.

A records search of the California Historic Resources Information System (CHRIS) was performed by the North Central Information Center (NWIC) for cultural resource site records and survey reports within the proposed project area. Based on the results of the CHRIS search, the State Office of Historic Preservation Directory (which includes listings of the California Register of Historical Resources, California State Historical Landmarks, California State Points of Historical Interest, and the National Register of Historic Places) indicates that there are no listed recorded buildings or structures in or adjacent to the

project site.¹³ The NWIC base maps show one previously recorded built environment resource within the proposed project area (P-43-003040 consists of an historic-period complex of wooden buildings/structures of varying types). In addition, the Santa Clara County Heritage Resource Inventory lists the Bender House and property, which dates to the 1890s, as being located at the current project address (18110 Monterey Road). The site does not currently contain any above-ground structures associated with such resources. However, the potential exists for subsurface, unrecorded historic-era resources to be encountered on the project site during grading and other ground-disturbing activities associated with the proposed project.

According to the CHRIS search, the project site does not contain any recorded archaeological resources. However, as noted in the General Plan EIR, archaeological surveys conducted in Morgan Hill have identified numerous prehistoric sites with shell midden components, including human burials. Based on such findings, the potential exists for additional undiscovered archeological resources in the City.

Based on the above, the potential exists for subsurface historical resources and previously unknown archaeological resources to be found on-site during grading and excavation associated with development of the proposed project. In the event that such resources are unearthed, the following City standard Conditions of Approval related to the protection of historical and archaeological resources would be implemented, consistent with Section 18.60.090 of the City's Municipal Code:

1. An archaeologist shall be present on-site to monitor all ground-disturbing activities. Where historical or archaeological artifacts are found, work in areas where remains or artifacts are found will be restricted or stopped until proper protocols are met, as described below:
 - a. Work at the location of the find shall halt immediately within thirty feet of the find. If an archaeologist is not present at the time of the discovery, the applicant shall contact an archaeologist for evaluation of the find to determine whether it qualifies as a unique archaeological resource as defined by this chapter;
 - b. If the find is determined not to be a Unique Archaeological Resource, construction can continue. The archaeologist shall prepare a brief informal memo/letter that describes and assesses the significance of the resource, including a discussion of the methods used to determine significance for the find;
 - c. If the find appears significant and to qualify as a unique archaeological resource, the archaeologist shall determine if the resource can be avoided and shall detail avoidance procedures in a formal memo/letter; and
 - d. If the resource cannot be avoided, the archaeologist shall develop within forty-eight hours an action plan to avoid or minimize impacts. The field crew shall not proceed until the

¹³ California Historical Resources Information System. *Record search results for the Monterey Gateway Project located at 18110 Monterey Road, Morgan Hill, Santa Clara County, California.* March 28, 2019.

action plan is approved by the Development Services Director.
The action plan shall be in conformance with California Public
Resources Code 21083.2.

2. The following policies and procedures for treatment and disposition of inadvertently discovered human remains or archaeological materials shall apply. If human remains are discovered, it is probable they are the remains of Native Americans,
 - a. If human remains are encountered, they shall be treated with dignity and respect as due to them. Discovery of Native American remains is a very sensitive issue and serious concern. Information about such a discovery shall be held in confidence by all project personnel on a need to know basis. The rights of Native Americans to practice ceremonial observances on sites, in labs and around artifacts shall be upheld.
 - b. Remains should not be held by human hands. Surgical gloves shall be worn if remains need to be handled.
 - c. Surgical mask shall also be worn to prevent exposure to pathogens that may be associated with the remains.
3. In the event that known or suspected Native American remains are encountered, or significant historic or archaeological materials are discovered, ground-disturbing activities shall be immediately stopped. Examples of significant historic or archaeological materials include, but are not limited to, concentrations of historic artifacts (e.g., bottles, ceramics) or prehistoric artifacts (chipped chert or obsidian, arrow points, groundstone mortars and pestles), culturally altered ash-stained midden soils associated with pre-contact Native American habitation sites, concentrations of fire-altered rock and/or burned or charred organic materials and historic structure remains such as stone-lined building foundations, wells or privy pits. Ground-disturbing project activities may continue in other areas that are outside the exclusion zone as defined below.
4. An "exclusion zone" where unauthorized equipment and personnel are not permitted shall be established (e.g., taped off) around the discovery area plus a reasonable buffer zone by the contractor foreman or authorized representative, or party who made the discovery and initiated these protocols, or if on-site at the time of discovery, by the monitoring archaeologist (typically twenty-five to fifty feet for single burial or archaeological find).
5. The exclusion zone shall be secured (e.g., twenty-four-hour surveillance) as directed by the city or county if considered prudent to avoid further disturbances.
6. The contractor foreman or authorized representative, or party who made the discovery and initiated these protocols shall be responsible for immediately contacting by telephone the parties listed below to

report the find and initiate the consultation process for treatment and disposition:

- a. The City of Morgan Hill Development Services Director,
 - b. The contractor's point(s) of contact,
 - c. The coroner of the county of Santa Clara (if human remains found), and
 - d. The Native American Heritage Commission (NAHC) in Sacramento.
7. The coroner has two working days to examine the remains after being notified of the discovery. If the remains are Native American, the Coroner has twenty-four hours to notify the NAHC.
 8. The NAHC is responsible for identifying and immediately notifying the Most Likely Descendant (MLD). (Note: NAHC policy holds that the Native American Monitor will not be designated the MLD.).
 9. Within twenty-four hours of their notification by the NAHC, the MLD will be granted permission to inspect the discovery site if they so choose,
 10. Within twenty-four hours of their notification by the NAHC, the MLD may recommend to the City's Development Services Director the recommended means for treating or disposing, with appropriate dignity, the human remains and any associated grave goods. The recommendation may include the scientific removal and non-destructive or destructive analysis of human remains and items associated with Native American burials. Only those osteological analyses or DNA analyses recommended by the appropriate tribe may be considered and carried out.
 11. If the MLD recommendation is rejected by the City of Morgan Hill, the parties will attempt to mediate the disagreement with the NAHC. If mediation fails, then the remains and all associated grave offerings shall be reburied with appropriate dignity on the property in a location not subject to further subsurface disturbance.

Compliance with the above standard Conditions of Approval would ensure that construction of the proposed project would have a ***less-than-significant*** impact related to historical resources and unique archeological resources, as well as the disturbance of human remains.

VI. ENERGY.

Would the project:

	Potentially Significant Impact	Less-Than- Significant with Mitigation Incorporated	Less-Than- Significant Impact	No Impact
a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>

Discussion

- a,b. The main forms of available energy supply are electricity, natural gas, and oil. A description of the California Green Building Standards Code and the Building Energy Efficiency Standards, with which the proposed project would be required to comply, as well as discussions regarding the proposed project's potential effects related to energy demand during construction and operations are provided below.

California Green Building Standards Code

The California Green Building Standards Code, otherwise known as the CALGreen Code (CCR Title 24, Part 11), is a portion of the California Building Standards Code (CBSC), which became effective with the rest of the CBSC on January 1, 2020. The purpose of the CALGreen Code is to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices. The provisions of the code apply to the planning, design, operation, construction, use, and occupancy of every newly constructed building or structure throughout California. Requirements of the CALGreen Code include, but are not limited to, the following measures:

- Compliance with relevant regulations related to future installation of Electric Vehicle charging infrastructure in residential and non-residential structures;
- Indoor water use consumption is reduced through the establishment of maximum fixture water use rates;
- Outdoor landscaping must comply with the California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO), or a local ordinance, whichever is more stringent, to reduce outdoor water use;
- Diversion of 65 percent of construction and demolition waste from landfills;
- Mandatory periodic inspections of energy systems (i.e., heat furnace, air conditioner, mechanical equipment) for nonresidential buildings over 10,000 square feet to ensure that all are working at their maximum capacity according to their design efficiencies;
- Mandatory use of low-pollutant emitting interior finish materials such as paints, carpet, vinyl flooring, and particle board; and
- For some single-family and low-rise residential development developed after January 1, 2020, mandatory on-site solar energy systems capable of producing 100 percent of the electricity demand created by the residence(s). Certain residential developments, including those developments that are subject to substantial shading, rendering the use of on-site solar photovoltaic systems infeasible, are exempted from the foregoing requirement.

Building Energy Efficiency Standards

The 2019 Building Energy Efficiency Standards is a portion of the CBSC, which expands upon energy-efficiency measures from the 2016 Building Energy Efficiency Standards. The 2019 Building Energy Efficiency Standards are in effect for building permit applications submitted after January 1, 2020.

The 2019 standards provide for additional efficiency improvements beyond the current 2016 standards. Non-residential buildings built in compliance with the 2019 standards are anticipated to use approximately 30 percent less energy compared to the 2016 standards, primarily due to lighting upgrades.¹⁴

For residential buildings, compliance with the 2019 standards will use approximately seven percent energy due to energy efficiency measures compared to homes built under the 2016 standards. Once rooftop solar electricity generation is factored in, homes built under the 2019 standards will use approximately 53 percent less energy than those under the 2016 standards.

Construction Energy Use

Construction of the proposed project would involve on-site energy demand and consumption related to use of oil in the form of gasoline and diesel fuel for construction worker vehicle trips, hauling and materials delivery truck trips, and operation of off-road construction equipment. In addition, diesel-fueled portable generators may be necessary to provide additional electricity demands for temporary on-site lighting, welding, and for supplying energy to areas of the site where energy supply cannot be met via a hookup to the existing electricity grid. Project construction would not involve the use of natural gas appliances or equipment.

Even during the most intense period of construction, due to the different types of construction activities (e.g., site preparation, grading, building construction), only portions of the project site would be disturbed at a time, with operation of construction equipment occurring at different locations on the project site, rather than a single location. In addition, all construction equipment and operation thereof would be regulated by the CARB In-Use Off-Road Diesel Vehicle Regulation. The In-Use Off-Road Diesel Vehicle Regulation is intended to reduce emissions from in-use, off-road, heavy-duty diesel vehicles in California by imposing limits on idling, requiring all vehicles to be reported to CARB, restricting the addition of older vehicles into fleets, and requiring fleets to reduce emissions by retiring, replacing, or repowering older engines, or installing exhaust retrofits. The In-Use Off-Road Diesel Vehicle Regulation would subsequently help to improve fuel efficiency and reduce GHG emissions. Technological innovations and more stringent standards are being researched, such as multi-function equipment, hybrid equipment, or other design changes, which could help to reduce demand on oil and emissions associated with construction.

The CARB has recently prepared the *2017 Climate Change Scoping Plan Update* (2017 Scoping Plan),¹⁵ which builds upon previous efforts to reduce GHG emissions and is designed to continue to shift the California economy away from dependence on fossil fuels. Appendix B of the 2017 Scoping Plan includes examples of local actions (municipal

¹⁴ California Energy Commission. *Title 24 2019 Building Energy Efficiency Standards FAQ*. November 2018.

¹⁵ California Air Resources Board. *The 2017 Climate Change Scoping Plan Update*. January 20, 2017.

code changes, zoning changes, policy directions, and mitigation measures) that would support the State's climate goals. The examples provided include, but are not limited to, enforcing idling time restrictions for construction vehicles, utilizing existing grid power for electric energy rather than operating temporary gasoline/diesel-powered generators, and increasing use of electric and renewable fuel-powered construction equipment. The In-Use Off-Road Diesel Vehicle Regulation described above, with which the proposed project must comply, would be consistent with the intention of the 2017 Scoping Plan and the recommended actions included in Appendix B of the 2017 Scoping Plan.

Based on the above, the temporary increase in energy use occurring during construction of the proposed project would not result in a significant increase in peak or base demands or require additional capacity from local or regional energy supplies. In addition, the proposed project would be required to comply with all applicable regulations related to energy conservation and fuel efficiency, which would help to reduce the temporary increase in demand.

Operational Energy Use

In response to the growing climate crisis, the City has determined that natural gas use in local buildings, which accounts for approximately one-third of the community's carbon footprint, represents the City's greatest opportunity to reduce future greenhouse gas emissions. Requiring all new buildings to be constructed without natural gas will dramatically reduce future emission growth as electricity procured by Silicon Valley Clean Energy is 100% carbon free. The City Council adopted Ordinance No. 2306 on November 6, 2019, which prohibits natural gas infrastructure in new buildings.

Following implementation of the proposed project, PG&E would provide electricity to the project site. Energy use associated with operation of the proposed project would be typical of mixed-use developments, requiring electricity for interior and exterior building lighting, heating, ventilation, and air conditioning (HVAC), electronic equipment, machinery, refrigeration, appliances, security systems, and more. Maintenance activities during operations, such as landscape maintenance, would involve the use of electric or gas-powered equipment. In addition to on-site energy use, the proposed project would result in transportation energy use associated with vehicle trips generated by the proposed multi-family homes and commercial/retail uses.

The proposed project would be subject to all relevant provisions of the most recent update of the CBSC, including the Building Energy Efficiency Standards. Adherence to the most recent CALGreen Code and the Building Energy Efficiency Standards would ensure that the proposed structure would consume energy efficiently through the incorporation of such features as door and window interlocks, direct digital controls for HVAC systems, and high efficiency outdoor lighting. Required compliance with the CBSC would ensure that the building energy use associated with the proposed project would not be wasteful, inefficient, or unnecessary. In addition, electricity supplied to the project by PG&E would comply with the State's Renewable Portfolio Standard (RPS), which requires investor-owned utilities, electric service providers, and community choice aggregators to increase procurement from eligible renewable energy resources to 33 percent of total procurement by 2020 and to 60 percent by 2030. Thus, a portion of the energy consumed during project operations would originate from renewable sources.

With regard to transportation energy use, the proposed project would comply with all applicable regulations associated with vehicle efficiency and fuel economy. In addition, as

discussed in Section XVII, Transportation, of this Initial Study, the project site is located within close proximity to existing residential neighborhoods, bicycle infrastructure, and transit infrastructure. The availability of such transit, bicycle, and pedestrian infrastructure in the site vicinity would help to reduce vehicle miles travelled (VMT) associated with the project and reduce fuel consumption. In addition, by providing mixed-use development on-site, the project would allow for future project residents to rely on the on-site retail uses, as opposed to travelling off-site. A portion of the workers at the proposed retail uses would likely reside on-site. Such internal trip capture would further reduce vehicle fuel consumption associated with the project.

Conclusion

Based on the context above, construction and operation of the proposed project would not result in wasteful, inefficient, or unnecessary consumption of energy resources or conflict with or obstruct a State or local plan for renewable energy or energy efficiency. Thus, a ***less-than-significant*** impact would occur.

VII. GEOLOGY AND SOILS.

Would the project:

	Potentially Significant Impact	Less-Than- Significant with Mitigation Incorporated	Less-Than- Significant Impact	No Impact
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>
ii. Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>
iii. Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>
iv. Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>
b. Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>
d. Be located on expansive soil, as defined in Table 18-1B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✗
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>

Discussion

The following discussion is based primarily on a Geotechnical Investigation prepared for the proposed project by Quantum Geotechnical, Inc. (see Appendix D).¹⁶

- ai-iv. Active faults do not cross the site, and the site is not mapped within an Alquist-Priolo Earthquake Fault Zone.¹⁷ Therefore, the proposed project would not be subject to risks related to fault rupture. Furthermore, the site is not located within the vicinity of any steep slopes that would be subject to landslide risk, nor within an area requiring special investigation for landslides or liquefaction hazards. According to the Association of Bay Area Governments (ABAG) Resilience Program's interactive Hazards Map, the project site is located in an area of relatively low liquefaction susceptibility.¹⁸

Pursuant to the Geotechnical Investigation, the nearest Quaternary active fault traces relative to the project site include the Calaveras, Tres Pinos, Quien Sabe, Sargent, San Andreas, and Vergeles faults. The Calaveras fault is located approximately one mile from the project site. Due to the proximity of the site area to nearby active faults, strong ground

¹⁶ Quantum Geotechnical, Inc. *Geotechnical Investigation on Proposed Residential Development at 18110 Monterey Road, Morgan Hill, California*. August 6, 2019.

¹⁷ Department of Conservation. *State of California, Special Studies Zones, Mt. Madonna Quadrangle, Revised Official Map*. Effective January 1, 1976.

¹⁸ Association of Bay Area Governments. *Resilience Program*. Available at: <http://gis.abag.ca.gov/website/Hazards/?hlyr=liqSusceptibility>. Accessed October 2019.

shaking could occur at the site as a result of an earthquake on any one of the faults. However, the proposed project would be subject to all applicable regulations within the CBSC and Chapter 15.08 (Building Code) of the City's Municipal Code, which provide standards to protect property and public safety by regulating the design and construction of foundations, building frames, and other building elements. It is also noted that the site is relatively flat and landslides would not pose a hazard to on-site structures or future residents. Therefore, a ***less-than-significant*** impact would occur related to exposure of people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, or landslides.

- b. Development of the proposed project site would cause ground disturbance of mostly topsoil related to construction activity. The ground disturbance would be limited to the areas proposed for grading and excavation, including building pads; curb, gutter, and sidewalk improvement areas; and drainage, sewer, and water infrastructure alignments. After grading and excavation and prior to overlaying the disturbed ground surfaces with impervious surfaces and structures, the potential exists for wind and water erosion to occur, which could adversely affect downstream storm drainage facilities.

New development within the City that disturbs one or more acres of land is required to comply with the National Pollutant Discharge Elimination System (NPDES) General Construction Permit and prepare a Storm Water Pollution Prevention Plan (SWPPP) incorporating BMPs to control sedimentation, erosion, and hazardous materials contamination of runoff during construction. The proposed project would disturb approximately 5.67 acres and, thus, would be subject to such requirements. In addition, pursuant to Chapter 13.30 (Urban Storm Water Quality Management and Discharge Control) of the City's Municipal Code, the project applicant would be required to submit a sediment and erosion control plan to the City of Morgan Hill, Engineering Land Development Department, prior to the approval of improvement plans and issuance of building permits. The plan(s) shall be acceptable and conform to City standards to prevent significant sediment and soil erosion during construction and include the standards and guidelines found in the California Stormwater Quality Association, Stormwater Best Management Practice Handbook. Based on the above, the proposed project would not result in substantial soil erosion or the loss of topsoil. Thus, a ***less-than-significant*** impact would occur.

- c,d. As noted previously, the project site would not be subject to substantial landslide or liquefaction hazards. In addition, as noted in the General Plan EIR, the CBSC and Chapter 15.08 (Building Code) of the City's Municipal Code provide standards to protect property and public safety by regulating the design and construction of excavations, foundations, building frames, and other building elements.

Pursuant to the Geotechnical Investigation, the near-surface soils within the project site have Plasticity Index values ranging from 10 to 16, which indicates that the soils have a relatively low expansive potential. Furthermore, to avoid damage due to soil expansion and shrinkage, Section 15.08.090 (Section 1907A.1 amended-Minimum slab provisions) of the City's Municipal Code includes requirements for minimum thickness of concrete floor slabs, as well as required reinforcement with wire mesh or an approved alternate. Given required compliance with the slab and foundation construction standards provided in the Municipal Code, the proposed project would not be subject to substantial risks related to expansive soils.

Based on the above, the proposed project would not create substantial direct or indirect risks to life or property related to being located on expansive soil, as defined in Table 18-1B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property. Thus, a ***less-than-significant*** impact would occur.

- e. The proposed development would connect to existing City-maintained sewer infrastructure and would not include the use of septic tanks. Accordingly, ***no impact*** would occur related to soils incapable of adequately supporting the use of septic tanks.
- f. Paleontological resources or fossils are the remains of prehistoric plant and animal life. As noted in the General Plan EIR, based on a review of the University of California's Museum of Paleontology's (UCMP) fossil locality database conducted for all of Santa Clara County, paleontological resources have not been explicitly identified as being found within Morgan Hill.¹⁹

As noted in the City's General Plan, occurrences of fossil resources are closely tied to the geologic units. Pursuant to the Natural Resources Conservation Service Web Soil Survey, the project site is underlain by Pleasanton loam, zero to two percent slopes, and San Ysidro loam, zero to two percent slopes.²⁰ Such soil types are not considered unique geologic features and are common within the geographic area of the City. As such, development of the proposed project would not destroy a unique geologic feature. Furthermore, the project would be subject to the City's standard measures listed in Chapter V, Cultural Resources, of this IS/MND. As noted in the General Plan EIR, such measures would further lessen potential impacts to paleontological resources. Therefore, the proposed project would not result in the direct or indirect destruction of a unique paleontological resource, and a ***less-than-significant*** impact would occur.

¹⁹ City of Morgan Hill. *2035 General Plan, City of Morgan Hill* [pg. 4.5-17]. Adopted July 2016.

²⁰ Natural Resources Conservation Service. *Web Soil Survey*. Available at: <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>. Accessed October 2019.

VIII. GREENHOUSE GAS EMISSIONS.

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than- Significant Impact	No Impact
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gasses?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>

Discussion

- a,b. Emissions of Greenhouse Gases (GHGs) contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. Therefore, the cumulative global emissions of GHGs contributing to global climate change can be attributed to every nation, region, and city, and virtually every individual on earth. An individual project's GHG emissions are at a micro-scale level relative to global emissions and effects to global climate change; however, an individual project could result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact. As such, impacts related to emissions of GHG are inherently considered cumulative impacts.

Implementation of the proposed project would cumulatively contribute to increases of GHG emissions. Estimated GHG emissions attributable to future development would be primarily associated with increases of carbon dioxide (CO₂) and, to a lesser extent, other GHG pollutants, such as methane (CH₄) and nitrous oxide (N₂O) associated with area sources, mobile sources or vehicles, utilities (electricity and natural gas), water usage, wastewater generation, and the generation of solid waste. The primary source of GHG emissions for the project would be mobile source emissions. The common unit of measurement for GHG is expressed in terms of annual metric tons of CO₂ equivalents (MTCO₂e/yr).

The proposed project is located within the jurisdictional boundaries of BAAQMD. The BAAQMD threshold of significance for project-level operational GHG emissions is 1,100 MTCO₂e/yr or 4.6 MTCO₂e/yr per service population (population + employees). BAAQMD's approach to developing a threshold of significance for GHG emissions is to identify the emissions level for which a project would not be expected to substantially conflict with existing California legislation adopted to reduce statewide GHG emissions needed to move towards climate stabilization. If a project would generate GHG emissions above the threshold level, the project would be considered to generate significant GHG emissions and conflict with applicable GHG regulations.

The proposed project's GHG emissions were quantified with CalEEMod using the same assumptions as presented in the Air Quality section of this IS/MND, and compared to the thresholds of significance noted above. The proposed project's required compliance with the current California Building Energy Efficiency Standards Code was assumed in the modeling. In addition, the CO₂ intensity factor within the model was adjusted to reflect the Pacific Gas & Electric Company's anticipated CO₂ emissions factor for 2023. All CalEEMod results are included in Appendix A to this IS/MND.

Construction GHG emissions are a one-time release and are, therefore, not typically expected to generate a significant contribution to global climate change. Neither the City nor BAAQMD has an adopted threshold of significance for construction-related GHG emissions and does not require quantification. Nonetheless, the proposed project's construction GHG emissions have been estimated. The CalEEMod emissions estimates prepared for the proposed project determined that unmitigated project construction would result in total emissions of 1,035.95 MTCO₂e.

The total construction GHG emissions were amortized and included in the annual operational GHG emissions. Amortizing the construction GHG emissions (a one-time release that would occur only during construction of the project) and including them in the annual operational emissions (which would occur every year over the lifetime of the entire project) represents a conservative analysis for the annual operational GHG emissions. For the purpose of this analysis, project construction emissions were amortized over the three-year period that would include the construction phase, resulting in annual construction emissions of 345.31 MTCO₂e/yr.

As shown in Table 5, the project's total unmitigated annual GHG emissions in the first year of project operation, 2023, including amortized construction-related emissions, were estimated to be approximately 1,405.97 MTCO₂e/yr, which results in emissions of 4.56 MTCO₂e/SP/yr. Thus, implementation of the proposed project would result in emissions below the BAAQMD's applicable 4.6 MTCO₂e/SP/yr threshold of significance for GHG emissions.

Table 5 Unmitigated Year 2023 Project GHG Emissions	
	Annual GHG Emissions
Construction-Related GHG Emissions	345.31 MTCO ₂ e/yr
Operational GHG Emissions:	1,060.66 MTCO ₂ e/yr
Area	1.25 MTCO ₂ e/yr
Energy	181.88 MTCO ₂ e/yr
Mobile	802.02 MTCO ₂ e/yr
Waste	62.89 MTCO ₂ e/yr
Water	12.61 MTCO ₂ e/yr
Total Annual GHG Emissions	1,405.97 MTCO₂e/yr
Total Annual GHG Emissions Per Service Population¹	4.56 MTCO₂e/SP/yr
BAAQMD Threshold	4.6 MTCO ₂ e/SP/yr
Exceeds Threshold?	NO
Note: ¹ Service population estimated to be 308 residents, based on an average household size of 3.05 for the City of Morgan Hill in the year 2020, as noted in Table 1-1 of the City's adopted Housing Element.	
Source: CalEEMod, October 2019 (see Appendix A).	

Based on the above, the proposed project would not be considered to generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment, or conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs; and impacts would be considered ***less than significant***.

IX. HAZARDS AND HAZARDOUS MATERIALS.

Would the project:

	Potentially Significant Impact	Less-Than- Significant with Mitigation Incorporated	Less-Than- Significant Impact	No Impact
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment?	<input type="checkbox"/>	✗	<input type="checkbox"/>	<input type="checkbox"/>
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✗
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✗
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✗
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>
g. Expose people or structures, either directly or indirectly, to the risk of loss, injury or death involving wildland fires?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>

Discussion

- a. Residential and retail uses are not typically associated with the routine transport, use, disposal, or generation of hazardous materials. Operations would likely involve use of common household cleaning products, fertilizers, and herbicides on-site, any of which could contain potentially hazardous chemicals; however, such products would be expected to be used in accordance with label instructions. Due to the regulations governing use of such products and the amount utilized on the site, occasional use of such products would not represent a substantial risk to public health or the environment. Therefore, the project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, and a **less-than-significant** impact would occur.
- b. The following discussion provides an analysis of potential hazards and hazardous materials associated with upset or accident conditions related to the proposed construction activities and existing on-site conditions.

Construction Activities

Construction activities associated with the proposed project would involve the use of various products such as concrete, paints, and adhesives. In addition, heavy-duty construction equipment operating on the project site would contain hydraulic fluid, diesel fuel, and other petroleum products. Small quantities of such potentially toxic substances would be used at the project site and transported to and from the site during construction. However, the project contractor would be required to comply with all California Health and

Safety Codes and local County ordinances regulating the handling, storage, and transportation of hazardous and toxic materials.

Existing On-Site Hazardous Conditions

A Phase I and Phase II ESA was prepared by Stantec Consulting Services, Inc. (Stantec) for the purpose of identifying potential recognized environmental conditions (RECs) associated with the project site (see Appendix D).²¹ The ESA included a survey of the site and a review of historical documentation, aerial photography, regulatory agency files, and environmental sites radius reports. According to the Phase I/II ESA, the project site was used for agricultural purposes from at least the 1950s through the 1990s. Based on historical aerial photography, the existing on-site mobile home was likely added to the site in 1950.

The Phase I/II ESA did not identify any evidence of stained soil or pavement, existing water wells, stressed vegetation, or evidence of hazardous substances or petroleum products. In addition, evidence of underground storage tanks (USTs) or aboveground storage tanks (ASTs) was not observed at the site. The site is not located within the vicinity of any properties that would pose an environmental hazard to the project site. Based on a site inspection, review of adjacent properties, and available environmental records, the likelihood for vapor intrusion at the project site is considered low, and Stantec did not recommend additional investigation of soil vapor.

Potential hazards and hazardous materials identified on the project site as part of the Phase I/II ESA are described in the following sections.

Contaminated Soils

Due to the historical use of the site for agricultural purposes, the potential exists that residual pesticides or heavy metals associated with prior herbicide application could be present on the site. In addition, because metal-containing herbicides are commonly applied along rail lines for weed control, the potential exists for the soils in the vicinity of the existing UPRR tracks along the northeastern site boundary to be contaminated by lead and arsenic. In order to further evaluate potential hazards related to such chemicals, Stantec performed a Phase II subsurface investigation to sample and analyze on-site soils, the results of which are described below.

Stantec completed the field work for the Phase II ESA on August 28, 2017. The Phase II ESA included collection of six shallow (one foot in depth) soil samples across the project site and laboratory analysis of each sample to evaluate the presence of residual pesticides, arsenic, and lead. Organochlorine pesticides (OCPs) were detected in one soil sample, but at levels that were below established residential screening criteria. With regard to heavy metals, lead was detected in five of the six samples at concentrations within naturally occurring background levels. Arsenic was detected in all six samples within naturally occurring background levels. Based on the results of the sample analysis, Stantec concluded that pesticides, lead, and arsenic do not represent an environmental concern, and further action related to the on-site soils is not required.

²¹ Stantec Consulting Services, Inc. *Phase I and II Environmental Site Assessment, Morgan Hill, 18110 Monterey Drive, Morgan Hill, California*. September 11, 2017.

Septic System

During field investigations conducted as part of the Phase I ESA, Stantec did not observe any on-site septic systems. However, given that the existing on-site mobile home does not appear to be connected to the City's sewer infrastructure, the potential exists that a septic system is located on the project site in the vicinity of the mobile home.

Asbestos-Containing Materials and Lead-Based Paint

Asbestos is the name for a group of naturally occurring silicate minerals that are considered to be "fibrous" and, through processing, can be separated into smaller and smaller fibers. The fibers are strong, durable, chemical resistant, and resistant to heat and fire. They are also long, thin, and flexible, such that they can be woven into cloth. Because of the above qualities, asbestos was considered an ideal product and has been used in thousands of consumer, industrial, maritime, automotive, scientific, and building products. However, later discoveries found that, when inhaled, the material caused serious illness.

For buildings constructed prior to 1980, the Code of Federal Regulations (29 CFR 1926.1101) states that all thermal system insulation (boiler insulation, pipe lagging, and related materials) and surface materials must be designated as "presumed asbestos-containing material" unless proven otherwise through sampling in accordance with the standards of the Asbestos Hazard Emergency Response Act. Because the existing mobile home was built prior to 1980, the potential exists that asbestos-containing materials were used in the construction of the residential structure and outbuildings on-site.

Lead-based paint (LBP) is defined by federal guidelines as any paint, varnish, stain, or other applied coating that has one milligram of lead per square centimeter or greater. Lead is a highly toxic material that may cause a range of serious illnesses, and in some cases death. In buildings constructed after 1978, the presence of LBP is unlikely. Structures built prior to 1978, and especially prior to the 1960s, are expected to contain LBP. The existing mobile home was constructed before the phase-out of LBPs in the 1970s. Therefore, the potential exists that LBPs are present in the on-site mobile home.

Based on the age of the existing mobile home, ACM and LBP are presumed to be present. The proposed project would include demolition of the mobile home. Therefore, without implementation of the appropriate safety measures, the proposed project could potentially expose construction workers during structure demolition to LBP and asbestos-containing materials.

Conclusion

As discussed above, development of the proposed project would not result in any substantial risks related to contaminated soils. However, if the existing mobile home is served by a septic system, proper abandonment of the septic system would be required prior to demolition of the mobile home. In addition, the existing on-site structures were constructed prior to the banning of asbestos-containing materials and LBP, and, as a result, the potential exists for asbestos-containing materials and LBP to be present in the on-site structures. Therefore, the proposed project could create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment, and a **potentially significant** impact could occur.

Mitigation Measure(s)

Implementation of the following mitigation measures would reduce the above potential impact to a *less-than-significant* level.

- IX-1. *If the project site is found to contain an existing septic system associated with the mobile home, the project applicant shall submit an application for Septic/Onsite Wastewater Treatment System Abandonment to the Santa Clara County Department of Environmental Health, Consumer Protection Division. After approval has been obtained, the septic system shall be abandoned consistent with the County's Septic Tank Abandonment Procedures. Proof of abandonment shall be provided to the City of Morgan Hill Development Services Department prior to issuance of a demolition permit.*
- IX-2. *Prior to issuance of a demolition permit for the on-site structure, the Developer shall consult with certified Asbestos and/or Lead Risk Assessors to complete and submit for review to the Building Department an asbestos and lead survey. If asbestos-containing materials or lead-containing materials are not discovered during the survey, further mitigation related to asbestos-containing materials or lead-containing materials shall not be required. If asbestos-containing materials and/or lead-containing materials are discovered by the survey, the project applicant shall prepare a work plan to demonstrate how the on-site asbestos-containing materials and/or lead-containing materials shall be removed in accordance with current California Occupational Health and Safety (Cal-OSHA) Administration regulations and disposed of in accordance with all CalEPA regulations, prior to the demolition and/or removal of the on-site structures. The plan shall include the requirement that work shall be conducted by a Cal-OSHA registered asbestos and lead abatement contractor in accordance with Title 8 CCR 1529 and Title 8 CCR 1532.1 regarding asbestos and lead training, engineering controls, and certifications. The applicant shall submit the work plan to the City for review and approval. The City has the right to defer the work plan to the Santa Clara County Department of Environmental Health for additional review. Materials containing more than one (1) percent asbestos that is friable are also subject to BAAQMD regulations. Removal of materials containing more than one (1) percent friable asbestos shall be completed in accordance with BAAQMD Section 11-2-303.*
- c. The nearest school relative to the project site is the Crossroads Christian School, located approximately 0.23-mile south of the site. As discussed under questions 'a' and 'b' above, with implementation of mitigation, development of the proposed project would not result in any significant hazards related to the use, transport, disposal, or upset of hazardous materials. Thus, **no impact** would result relating to the emission or handling of hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
- d. The Phase I and Phase II ESA indicates that the project site is not included on the list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Therefore, **no impact** would result from implementation of the proposed project.
- e. The public airport nearest to the project site is the San Martin Airport, which is located approximately 4.75 miles south of the project site at 13030 Murphy Avenue. The project

site is located well outside of the Airport Influence Area (AIA) identified in the South County Airport Comprehensive Land Use Plan.²² In addition, the project site is not located within the vicinity of a private airstrip. Therefore, the proposed project would not result in an airport-related safety hazard for people residing or working in the project area, and **no impact** would occur.

- f. With the exception of minor modifications to the existing traffic signal at the Old Monterey Road/Monterey Road intersection, implementation of the proposed project would not result in any substantial modifications to the City's existing roadway system. The project would not interfere with potential evacuation or response routes used by emergency response teams. In addition, the project would not conflict with the City's Emergency Operations Plan.²³ The proposed project is consistent with the site's current General Plan land use and zoning designations; thus, development of the site and associated effects on emergency evacuation routes has been anticipated per the General Plan and analyzed in the General Plan EIR. Therefore, the project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan, and a **less-than-significant** impact would occur.
- g. The City's Wildland Urban Interface map indicates that the project site is not located in a High or Very High Fire Hazard Severity Zone (FHSZ).²⁴ While the residential area further to the west of the site past Del Monte Avenue is located within a Very High FHSZ, the area was classified as such in 2008, prior to buildout of the area with residential uses. In addition, buildout of the site has been previously considered by the City, and the project site is situated within a developed area. Therefore, the proposed project would not expose people or structures to the risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands, and a **less-than-significant** impact would occur.

²² Santa Clara County. *Comprehensive Land Use Plan, Santa Clara County, South County Airport*. Amended November 16, 2016.

²³ City of Morgan Hill. *Emergency Operations Plan*. January 11, 2018.

²⁴ City of Morgan Hill. *City of Morgan Hill Wildland Urban Interface Map*. March 2009.

X. HYDROLOGY AND WATER QUALITY.

Would the project:

	Potentially Significant Impact	Less-Than- Significant with Mitigation Incorporated	Less-Than- Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i. Result in substantial erosion or siltation on- or off-site;	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>
ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>
iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>
iv. Impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>

Discussion

- a. The proposed project's potential to result in water quality impacts during construction and operations is discussed in further detail separately below.

Construction

Project construction activities such as grading, excavation, and trenching for site improvements would result in the disturbance of on-site soils. The exposed soils have the potential to affect water quality in two ways: 1) suspended soil particles and sediments transported through runoff; or 2) sediments transported as dust that eventually reach local water bodies. Spills or leaks from heavy equipment and machinery, staging areas, or building sites also have the potential to enter runoff. Typical pollutants include, but are not limited to, petroleum and heavy metals from equipment and products such as paints, solvents, and cleaning agents, which could contain hazardous constituents. Sediment from erosion of graded or excavated surface materials, leaks or spills from equipment, or inadvertent releases of building products could result in water quality degradation if runoff containing the sediment or contaminants should enter receiving waters in sufficient quantities. Impacts from construction-related activities would generally be short-term and of limited duration.

Water quality degradation is regulated by the federal NPDES Program, established by the Clean Water Act, which controls and reduces pollutants to water bodies from point and non-point discharges. In California, the NPDES permitting program is administered by the

State Water Resources Control Board (SWRCB) through nine Regional Water Quality Control Boards (RWQCBs). As discussed in Section VII, Geology and Soils, of this IS/MND, new development within the City that disturbs one or more acres of land is required to comply with the NPDES General Construction Permit and prepare a SWPPP incorporating BMPs to control sedimentation, erosion, and hazardous materials contamination of runoff during construction. The proposed project would disturb approximately two acres, and, thus, would be subject to the State NPDES General Permit conditions.

The proposed project would also be subject to all regional and local water quality regulations. In order to meet water quality objectives for the region, the City of Morgan Hill, City of Gilroy, and County of Santa Clara have prepared and are implementing a Revised Regional Storm Water Management Plan (SWMP). The SWMP incorporates the efforts of the City of Morgan Hill, the City of Gilroy, and the unincorporated portion of Santa Clara County, within the watershed of the Pajaro River and Monterey Bay, to meet the Phase II Storm Water Permit requirements for small municipal separate storm sewer systems (MS4s). The Upper Pajaro River Watershed is located within the jurisdiction of the Central Coast Regional Water Quality Control Board (CCRWQCB). The City of Morgan Hill implements the SWMP through an extensive program that entails: 1) the establishment of SWMP goals for the City; 2) public education and outreach; 3) public involvement and participation; 4) illicit discharge control; 5) construction site storm water runoff control; 6) post-construction storm water management in development; and 7) pollution prevention. For construction activities, the SWMP presents BMPs that are required for the control of storm water runoff quality during construction.

Operation

After project completion, impervious surfaces on the project site could contribute incrementally to the degradation of downstream water quality during storm events. During the dry season, vehicles and other urban activities may release contaminants onto the impervious surfaces, where they would accumulate until the first storm event. During the initial storm event, or first flush, the concentrated pollutants would be transported via stormwater runoff from the site to the stormwater drainage system and eventually a downstream waterway. Typical urban pollutants that would likely be associated with the proposed project include sediment, pesticides, oil and grease, nutrients, metals, bacteria, and trash. In addition, stormwater runoff could cause soil erosion if not properly addressed and provide a more lucrative means of transport for pollutants to enter the waterways.

The proposed project would be managed in accordance with Resolution R3-2013-0032 issued by the California Regional Water Quality Control Board, Central Coast Region. This resolution formally adopts post-construction stormwater management requirements for development projects in the Central Coast Region. The requirements identify 10 Watershed Management Zones (WMZs) in the covered area, and specify stormwater management requirements for each zone, depending on the size of the development project. Because the proposed project site is located in an area classified as WMZ-2, stormwater management at the project site must include site design and runoff features to limit the amount of runoff from the project site as well as on-site water quality treatment to reduce pollutant loads in the stormwater runoff using a Low Impact Development (LID) treatment system such as biofiltration. In WMZ-2, the treatment system must retain 95 percent of the runoff from the project site and also maintain peak runoff flows such that they do not exceed pre-project flows.

A preliminary Stormwater Control Plan (SWCP) has been prepared for the proposed project. On-site stormwater runoff from impervious surfaces would be collected by a series of drain inlets along the internal parking areas, drive aisles, and paved walkways and transported, by way of underground storm drains, to a pipe manifold storage system located at the center of the site underneath the proposed common area (see Figure 9). The pipe manifold storage system would treat and detain all on-site runoff prior to discharging to the City's existing stormwater drain located in Monterey Road during large storm events. Per the SWCP for the project, the pipe manifold storage system would provide 14,635 cubic feet of storage volume, which exceeds the 13,034 square foot minimum required. The proposed storage volume would exceed the 95th percentile first flush treatment volume requirement.

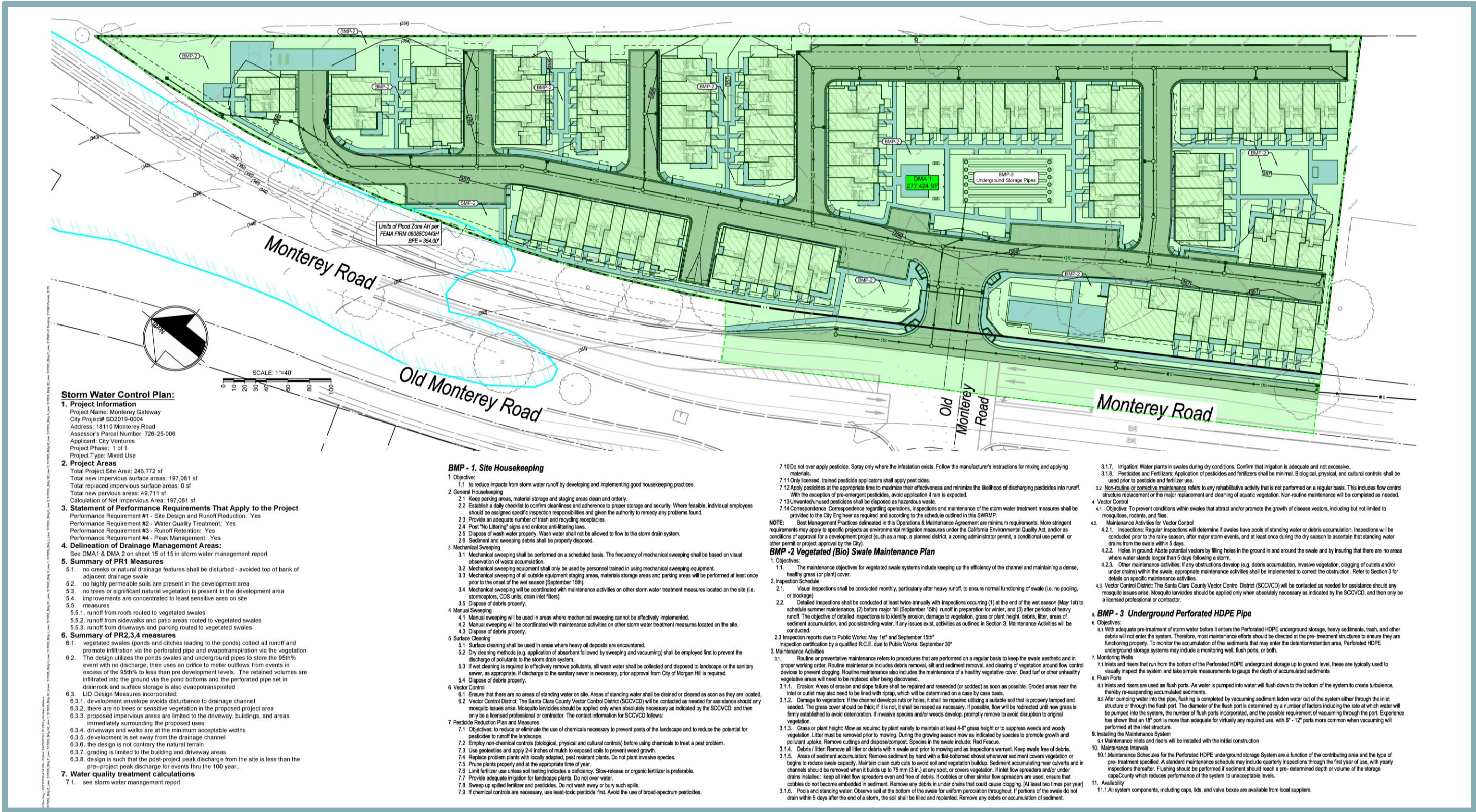
The design, construction, operation, and maintenance of the proposed pipe manifold storage system would be addressed in a final SWCP to be submitted to the City of Morgan Hill in accordance with the stormwater management requirements adopted by Resolution R3-2013-0032. The final SWCP would demonstrate how the pipe manifold storage system would meet the specified water quality, runoff retention, and peak flow management requirements. Prior to occupancy of the project, the stormwater controls would be field verified by the City of Morgan Hill to confirm design of the controls in accordance with the specified standards, and the controls would be subject to later operation and maintenance inspections by the City.

Pursuant to Chapter 18.140 (Post Construction Stormwater Pollution Prevention) of the City's Municipal Code, the proposed project would be subject to permanent storm water pollution prevention measures. As such, the proposed project would be required to comply with the design standards set forth in Section 18.140.040 (Design standards and selection of best management practices), and select and implement BMPs to the satisfaction of the City in accordance with the requirements contained in the most recent versions of the following documents:

1. City of Morgan Hill Stormwater Post Construction Best Management Practices Development Standards for new development and redevelopment;
2. California Storm Water Quality Association Best Management Practice Handbooks;
3. City of Gilroy, City of Morgan Hill and County of Santa Clara Regional Stormwater Management Plan (SWMP), as approved by the Central Coast Regional Water Quality Control Board; and
4. City of Morgan Hill Hydro-modification Management Plan, as approved by the Central Coast Regional Water Quality Control Board.

The final design of the proposed drainage system would be reviewed and approved by the City of Morgan Hill Engineering Land Development Division, which would ensure that the proposed drainage system complies with the City's Post Construction Stormwater Pollution Prevention Ordinance with respect to incorporating sufficient permanent stormwater treatment control BMPs. Therefore, water quality standards or waste discharge requirements would not be violated, and water quality would not be degraded as a result of the proposed project operations.

Figure 9
Stormwater Control Plan



Conclusion

Based on the above discussions, the proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality during construction and operations. Therefore, a **less-than-significant** impact would occur.

- b,e. The City's water supplies currently consist entirely of groundwater. Approximately 25 percent of the City's supply is extracted from the Coyote Valley subarea of the Santa Clara Subbasin, and approximately 75 percent is extracted from the Llagas Subbasin. The project site is located within the Llagas Subbasin. Neither of the subbasins are in a condition of overdraft, and groundwater levels are not expected to drop.²⁵ It should be noted that water supply is discussed in Section XIX, Utilities and Service Systems, of this IS/MND.

Groundwater within the Llagas Subbasin is managed by the SCVWD. The 2016 Groundwater Management Plan (GWMP), prepared pursuant to the Sustainable Groundwater Management Act of 2014 (SGMA), describes the SCVWD's comprehensive groundwater management framework, including existing and potential actions to achieve basin sustainability goals and ensure continued sustainable groundwater management. The GWMP covers the Santa Clara and Llagas subbasins, located entirely in Santa Clara County and identified by the Department of Water Resources (DWR) as Basins 2-9.02 and 3-3.01, respectively. Pursuant to the DWR, the Llagas Subbasin is designated as a high-priority basin.²⁶

Major recharge facilities within the Llagas Subbasin include the Uvas and Chesbro Reservoirs, in-stream recharge in Llagas and Uvas Creeks, the Madrone Channel, the San Pedro and Main Avenue groundwater recharge ponds, and the Uvas-Llagas pipeline, which is capable of diverting water from Uvas Reservoir to Llagas Creek. The project site is not located in the vicinity of any such facilities. In addition, the proposed on-site pipe manifold system would allow for captured runoff to infiltrate underlying soils in a manner similar to what currently occurs on-site.

Given that groundwater levels within the subbasin underlying the project site are currently stable, and that the proposed project would provide for opportunities for on-site recharge, the project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the Llagas Subbasin. In addition, the project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. Thus, a **less-than-significant** impact would occur.

- ci-iii. With the exception of a mobile home located within the southeastern portion of the site, the project site consists primarily of vacant, undeveloped land with ruderal vegetation. Development of the proposed project would include approximately 197,061 square feet of impervious surfaces, which would alter the existing drainage pattern of the site. However, as discussed above, on-site stormwater runoff would be collected by a series of drain inlets and transported, by way of underground storm drains, to an underground pipe manifold storage system. The pipe manifold system would allow stored runoff to infiltrate

²⁵ City of Morgan Hill. *Morgan Hill 2035 Final Environmental Impact Report* [pg. 4.9-18]. Adopted July 2016.

²⁶ Santa Clara Valley Water District. *2016 Groundwater Management Plan, Santa Clara and Llagas Subbasins* [pg. ES-1]. November 2016.

underlying soils in a manner similar to what currently occurs on-site. During large storm events, excess runoff would be discharged to the City's public storm drain system located in Monterey Road. The pipe manifold storage system would treat and retain 95 percent of the runoff from the project site and also maintain peak runoff flows such that they do not exceed pre-project flows in accordance with the stormwater management requirements adopted by Resolution R3-2013-0032.

Furthermore, stormwater runoff associated with the site would be required to comply with the City's SWMP standards. As such, the project would not significantly increase stormwater flows into the existing system. The final drainage system design for the project will be subject to review and approval by the City of Morgan Hill Engineering Land Development Division, who will confirm that the proposed drainage system for the project is consistent with the City's Storm Drainage Master Plan and standard stormwater-related conditions of approval. Therefore, the proposed project would not substantially alter the existing drainage pattern of the site or area in a manner that would result in substantial erosion, siltation, or flooding on- or off-site, create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems, or provide substantial additional sources of polluted runoff. Thus, a **less-than-significant** impact would occur.

- civ. According to Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) number 06085C0443H, the project site is located primarily within Zone X, defined as an area that is located outside of the 100-year floodplain. As shown in Figure 7 of this IS/MND, a small portion of the site, along the western site boundary adjacent to Monterey Road, is located within a Special Flood Hazard Area (SFHA) (Zone AH) subject to a one percent (100-year) annual chance flood, with a Base Flood Elevation (BFE) of 354 feet.²⁷ However, the proposed project would not include development of structures or placement of fill within the SFHA. Therefore, the proposed project would not impede or redirect flood flows, and a **less-than-significant** impact would occur.
- d. A seiche is defined as a wave generated by rapid displacement of water within a reservoir or lake, due to an earthquake that triggers land movement within the water body or land sliding into or beneath the water body. The project site is not located near a water body that is susceptible to seiche hazard. In addition, the distance to the nearest coastline does not subject the site to tsunami hazards. The project site is within the dam failure inundation hazard zone for Anderson Reservoir as indicated within the dam failure inundation hazard maps.²⁸

The dams in Santa Clara County are managed by the SCVWD. The dams are inspected twice each year and are continuously monitored for seepage and settling and inspected immediately following significant earthquakes. A seismic stability evaluation performed in 2007 for Anderson Dam indicated that the downstream and upstream embankments could become unstable during a very large magnitude earthquake and the rupture of faults underlying the dam may have adverse impact on the outlet pipes and intake structure. The SCVWD has initiated a capital project, the Anderson Dam Seismic Retrofit Project

²⁷ Federal Emergency Management Agency. *National Flood Hazard Layer FIRMette*. Accessed October 2019.

²⁸ Association of Bay Area Governments. *Dam Failure Inundation Hazard Map for Morgan Hill*. 1995. Available at: http://www.mhcert.com/prepare/dam_failure.shtml. Accessed October 2019.

(ADSRP), to complete the planning, design, and construction of the seismic retrofit of the dam. Construction work for the ADSRP is planned to start in 2021.²⁹

In order to protect the public from potential effects until the ADSRP is complete, a storage restriction of approximately 45 feet below the dam crest has been put in place, with a reduced storage capacity of 61,810 acre-feet. The SCVWD and regulatory agencies (California Division of Safety of Dams and the Federal Energy Regulatory Commission) have approved the restriction and believe that the restriction would be sufficient to prevent the uncontrolled release of water in case of dam failure after a major earthquake.

Based on the above, the proposed project would not be exposed to substantial risks related to flooding as a result of the failure of a dam, tsunamis, or seiches. In addition, as discussed under question 'cvi' above, the proposed project would not include development of structures or placement of fill within a 100-year floodplain. Therefore, the project would not result in the release of pollutants due to project inundation, and a ***less-than-significant*** impact would occur.

²⁹ Santa Clara Valley Water District. C1: Anderson Dam Seismic Retrofit*. Available at: <https://www.valleywater.org/anderson-dam-project>. Updated November 2018.

XI. LAND USE AND PLANNING.

Would the project:

	Potentially Significant Impact	Less-Than- Significant with Mitigation Incorporated	Less-Than- Significant Impact	No Impact
a. Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>
b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>

Discussion

- a. The proposed project would essentially function as an extension of the existing residential neighborhoods to the west and south of the project site, as well as the residential uses planned for development to the east of the project site as part of the approved Butterfield-Keenan General Plan Amendment Project. In addition, the project would include sidewalk improvements along the project frontage to increase pedestrian connectivity in the project area. As such, the project would not physically divide an established community, and a ***less-than-significant*** impact would occur.
- b. The project site is currently zoned MU-F with a BLMP PD combining district. The project is located within Block Four of the BLMP area. Pursuant to Section 18.22.020 (Land use regulations) of the Morgan Hill Municipal Code, mixed-use residential is considered a permitted use within the MU-F zone district. Various commercial uses, including restaurants, professional offices, and general retail are considered permitted uses within the MU-F zone district and do not require approval of a Conditional Use Permit. As such, the type and intensity of growth that would be induced by the proposed project has been anticipated in accordance with the General Plan and associated environmental effects have been analyzed in the General Plan EIR. As discussed throughout this IS/MND, the proposed project would not result in any significant environmental effects that would not be mitigated to a less-than-significant level.

The proposed project would generally be consistent with General Plan policies, as well as other applicable policies and regulations adopted for the purpose of avoiding or mitigating environmental effects. For example, with implementation of Mitigation Measures IV-1 through IV-5, the project would not conflict with any applicable policies, regulations, or ordinances related to the protection of biological resources. As discussed under Section XIII, Noise, of this IS/MND, the project would comply with the noise level thresholds established in the City's General Plan and the Municipal Code during construction or operation with implementation of Mitigation Measure XII-1 and XII-2. Furthermore, the project would be consistent with the development standards established in the City's BLMP PD land use regulations for Block Four.

Based on the above, the proposed project would not cause a substantial adverse environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect, and a ***less-than-significant*** impact would result.

XII. MINERAL RESOURCES.

Would the project:

	Potentially Significant Impact	Less-Than- Significant with Mitigation Incorporated	Less-Than- Significant Impact	No Impact
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✗
b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✗

Discussion

- a,b. The City's General Plan does not identify any regionally or locally important mineral resources within the City of Morgan Hill. The *Santa Clara County General Plan* does identify mineral resources of importance; however, the project site is not in proximity to the quarries currently in operation. Consequently, the proposed project would not result in the loss of a known mineral resource that would be of value to the region nor would the project result in the loss of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. Therefore, ***no impact*** to mineral resources would occur as a result of the proposed project.

XIII. NOISE.

Would the project result in:

	Potentially Significant Impact	Less-Than- Significant with Mitigation Incorporated	Less-Than- Significant Impact	No Impact
a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	✗	<input type="checkbox"/>	<input type="checkbox"/>
b. Generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>
c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✗

Discussion

The discussion presented below is based primarily on an Exterior Noise and Façade Acoustical Analysis (Acoustical Analysis) prepared for the proposed project by Veneklasen Associates (see Appendix F).³⁰

- a. The following section includes a discussion of noise standards and criteria applicable to various land uses, as well as potential traffic noise and non-transportation noise sources associated with the proposed project.

Sensitive Receptors

Noise-sensitive land uses are generally defined as locations where people reside or where the presence of unwanted sound could adversely affect the primary intended use of the land. Places where people live, sleep, recreate, worship, and study are considered to be sensitive to noise because intrusive noise can be disruptive to such activities. Within the project vicinity, the nearest sensitive receptors include the single-family residence to the southeast of the site along Monterey Road and the Solera Ranch subdivision located west of the site.

Existing Noise Environment

The ambient noise environment in the immediate project vicinity is defined by traffic on Monterey Road and rail activity associated with the adjacent UPRR tracks. To quantify the existing noise environment on the project site, Veneklasen relied on historical measurements from a project just to the south, at Monterey Road and Granada Street. The project site has exposure from the same environmental sources (rail line and Monterey Road) at similar distances.

As noted in the Acoustical Analysis, 24-hour measurements were performed from April 7-8, 2014, using a Bruel & Kjaer type 2260 sound level meter. In addition, more recent measurements were performed by other engineering firms. Noise measurements were taken at a distance of 25 feet from the UPRR tracks. Short-term measurements were

³⁰ Veneklasen Associates. *Morgan Hill, California, Exterior Noise and Façade Acoustical Analysis*, VA Project No. 4616-015. November 26, 2019.

completed along Monterey Road, approximately 10 feet from the edge of the road. Table 6 shows a summary of Veneklasen's noise and vibration measurements.

Table 6		
Ambient Noise Level Measurement Results		
Measurement	Train Pass-By Events, dB L₁	Noise Level (L_{dn})
Noise, Train	82 to 92	74
Noise, Road	--	67
<i>Source: Veneklasen Associates, 2019.</i>		

Veneklasen's historical measurements were supplemented with site-specific reported levels from another engineering firm. The measured on-site levels per the report were consistent with Veneklasen's historical measurements. The number of trains captured during the two surveys were also mutually consistent and, therefore, the measurements are expected to represent a typical condition at the project site.

City Noise Standards and Criteria

Chapter 9, Safety, Service, and Infrastructure, of the City's General Plan contains the following policies that would be applicable to the proposed project:

SSI-8.1 Exterior Noise Level Standards. Require new development projects to be designed and constructed to meet acceptable exterior noise level standards (see Table SSI-1 [of the General Plan]), as follows:

- Apply a maximum exterior noise level of 60 dBA L_{dn} in residential areas where outdoor use is a major consideration (e.g., backyards in single-family housing developments and recreation areas in multi-family housing projects). Where the City determines that providing an L_{dn} of 60 dBA or lower cannot be achieved after the application of reasonable and feasible mitigation, an L_{dn} of 65 dBA may be permitted.
- Indoor noise levels should not exceed an L_{dn} of 45 dBA in new residential housing units.
- Noise levels in new residential development exposed to an exterior L_{dn} 60 dBA or greater should be limited to a maximum instantaneous noise level (e.g., trucks on busy streets, train warning whistles) in bedrooms of 50 dBA. Maximum instantaneous noise levels in all other habitable rooms should not exceed 55 dBA. The maximum outdoor noise level for new residences near the railroad shall be 70 dBA L_{dn}, recognizing that train noise is characterized by relatively few loud events.

SSI-8.2 Impact Evaluation. The impact of a proposed development project on existing land uses should be evaluated in terms of the potential for adverse community response based on significant increase in existing noise levels, regardless of compatibility guidelines.

SSI-8.5 Traffic Noise Level Standards. Consider noise level increases resulting from traffic associated with new projects significant if: a) the noise level increase is 5 dBA L_{dn} or greater, with a future noise level of less than 60 dBA L_{dn}, or b) the

noise level increase is 3 dBA L_{dn} or greater, with a future noise level of 60 dBA L_{dn} or greater.

SSI-8.6 Stationary Noise Level Standards. Consider noise levels produced by stationary noise sources associated with new projects significant if they substantially exceed existing ambient noise levels.

SSI-8.7 Other Noise Sources. Consider noise levels produced by other noise sources (such as ballfields) significant if an acoustical study demonstrates they would substantially exceed ambient noise levels.

SSI-8.9 Site Planning and Design. Require attention to site planning and design techniques other than sound walls to reduce noise impacts, including: a) installing earth berms, b) increasing the distance between the noise source and the receiver, c) using non-sensitive structures such as parking lots, utility areas, and garages to shield noise-sensitive areas, d) orienting buildings to shield outdoor spaces from the noise source, and e) minimizing the noise at its source.

In addition to the policies listed above, Section 18.76.090 (Noise) of the City's Municipal Code contains maximum noise levels for non-transportation noise sources. The City's quantitative exterior noise standards are reproduced below in Table 7. According to City staff, such standards are interpreted as being hourly average noise level standards (L_{eq}).

Table 7	
Noise Level Performance Standards	
Receiving Land Use	Maximum Noise Level at Lot Line of Receiving Use
Industrial and Wholesale	70 dBA
Commercial	65 dBA
Residential or Public/Quasi Public	60 dBA
Notes: <ul style="list-style-type: none">• The planning commission may allow an additional 5 dBA noise level at the lot line if the maximum noise level shown above cannot be achieved with reasonable and feasible mitigation.• Noise standards shown above do not apply to noise generated by vehicle traffic in the public right-of-way or from temporary construction, demolition, and vehicles that enter or leave the site of the noise-generating use (e.g., construction equipment, trains, trucks).	
Source: City of Morgan Hill Municipal Code.	

Furthermore, Section 8.28.040.D of the Morgan Hill Municipal Code, limits construction activity noise as follows:

"Construction activities" are defined as including but not limited to excavation, grading, paving, demolition, construction, alteration or repair of any building, site, street or highway, delivery or removal of construction material to a site, or movement of construction materials on a site. Construction activities are prohibited other than between the hours of seven a.m. and eight p.m., Monday through Friday and between the hours of nine a.m. to six p.m. on Saturday. Construction activities may not occur on Sundays or federal holidays. No third person, including but not limited to landowners, construction company owners, contractors, subcontractors, or employers, shall permit or allow any person working on construction

activities which are under their ownership, control or direction to violate this provision.

Construction activities may occur in the following cases without violation of this provision:

- a. In the event of urgent necessity in the interests of the public health and safety, and then only with a permit from the Chief Building Official, which permit may be granted for a period of not to exceed three days or less while the emergency continues and which permit may be renewed for periods of three days or less while the emergency continues.
- b. If the chief building official determines that the public health and safety will not be impaired by the construction activities between the hours of eight p.m. and seven a.m., and that loss or inconvenience would result to any party in interest, the chief building official may grant permission for such work to be done between the hours of eight p.m. and seven a.m. upon an application being made at the time the permit for the work is issued or during the progress of the work.
- c. The city council finds that construction by the resident of a single residence does not have the same magnitude or frequency of noise impacts as a larger construction project. Therefore, the resident of a single residence may perform construction activities on that home during the hours in this subsection, as well as on Sundays and federal holidays from nine a.m. to six p.m., provided that such activities are limited to the improvement or maintenance undertaken by the resident on a personal basis.
- d. Capital improvement projects are exempt from this section and the Public Services Director shall determine the hours of construction for capital improvement projects.
- e. Until November 30, 1998, construction activities shall be permitted between the hours of ten a.m. to six p.m. on Sundays, subject to the following conditions. No power-driven vehicles, equipment or tools may be used during construction activities, except on the interior of a building or other structure which is enclosed by exterior siding (including windows and doors) and roofing, and which windows and doors are closed during construction activities. Construction activities must be situated at least one hundred fifty feet from the nearest occupied dwelling. No delivery or removal of construction material to a site, or movement of construction materials on a site, is permitted. No activity, including but not limited to the playing of radios, tape players, compact disc players or other devices, which creates a loud or unusual noise which offends, disturbs or harasses the peace and quiet of the persons of ordinary sensibilities beyond the confines of the property from which the sound emanates is allowed.

Project Construction Noise

During construction of the proposed project, heavy-duty equipment would be used for demolition, grading, excavation, paving, and building construction, which would result in temporary noise level increases while in operation. Noise levels would vary depending on the type of equipment used, how the equipment is operated, and how well the equipment is maintained. In addition, noise exposure at any single point outside the project site would vary depending on the proximity of construction activities to that point. Standard construction equipment, such as graders, backhoes, loaders, and haul trucks would be used on-site.

Table 8 shows maximum noise levels associated with typical construction equipment. Based on the table, activities involved in typical construction would generate maximum noise levels up to 85 dB at a distance of 50 feet. As one increases the distance between equipment, or increases separation of areas with simultaneous construction activity, dispersion and distance attenuation reduce the effects of combining separate noise sources. The noise levels from a source decrease at a rate of approximately 6 dB per every doubling of distance from the noise source.

Table 8	
Construction Equipment Noise	
Type of Equipment	Maximum Level, dB at 50 feet
Backhoe	78
Compactor	83
Compressor (air)	78
Dozer	82
Dump Truck	76
Excavator	81
Generator	81
Pneumatic Tools	85
<i>Source: Federal Highway Administration, Roadway Construction Noise Model User's Guide, January 2006.</i>	

The nearest noise-sensitive receptor is located within 50 feet of the project site boundary. Thus, construction activities associated with the proposed project could exceed the levels shown in Table 8 at the receptor. However, the Morgan Hill Municipal Code does not specify any short-term noise level limits. In addition, Chapter 8.28 of the Morgan Hill Municipal Code prohibits construction activities between 8:00 PM and 7:00 AM, Monday through Friday, and between 6:00 PM and 9:00 AM on Saturdays. Construction activities may not occur on Sundays or federal holidays. Furthermore, construction activities related to the proposed project would include the use of sound-dampening equipment such as mufflers, air-inlet silencers, shrouds, shields, or other noise-reducing features where appropriate.

Enforcement of time restrictions specified in the Morgan Hill Noise Ordinance and the use of noise-dampened equipment would be required to ensure that the temporary or periodic increase in ambient noise levels in the project vicinity associated with construction of the proposed project would not be considered substantial. Otherwise, a potentially significant impact could occur related to construction noise.

Project Operational Noise

The primary noise source associated with operation of the proposed project would be traffic noise. Per General Plan Policy SSI-8.5, noise level increases resulting from traffic associated with new projects are considered significant if: a) the noise level increase is 5 dBA L_{dn} or greater, with a future noise level of less than 60 dB L_{dn} , or b) the noise level increase is 3 dB L_{dn} or greater, with a future noise level of 60 dB L_{dn} or greater. As shown in Table 6, existing on-site noise levels exceed 60 dB L_{dn} .

As discussed in Section XVII, Transportation, of this IS/MND, the proposed project would generate approximately 1,034 average daily vehicle trips, which represents an increase of approximately six percent relative to traffic volumes documented on Monterey Road in the project vicinity in 2018. Per the Noise Analysis, based on modeling conducted with the Federal Highway Administration (FHWA) Traffic Noise Model, traffic generated by the proposed project would result in a noise level increase of approximately 0.3 dB, which is imperceptible and below the City's 3 dB L_{dn} threshold. Therefore, traffic noise increases attributable to the project would be less than significant.

Noise at Proposed Development

Impacts of the environment on a project (as opposed to impacts of a project on the environment) are beyond the scope of required CEQA review. "[T]he purpose of an EIR is to identify the significant effects of a project on the environment, not the significant effects of the environment on the project." (*Ballona Wetlands Land Trust v. City of Los Angeles*, (2011) 201 Cal.App.4th 455, 473 (*Ballona*)). The California Supreme Court recently held that "CEQA does not generally require an agency to consider the effects of existing environmental conditions on a proposed project's future users or residents. What CEQA does mandate... is an analysis of how a project might exacerbate existing environmental hazards." (*California Building Industry Assn. v. Bay Area Air Quality Management Dist.* (2015) 62 Cal.4th 369, 392; see also *Mission Bay Alliance v. Office of Community Investment & Infrastructure* (2016) 6 Cal.App.5th 160, 197 ["identifying the effects on the project and its users of locating the project in a particular environmental setting is neither consistent with CEQA's legislative purpose nor required by the CEQA statutes"], quoting *Ballona*, *supra*, 201 Cal.App.4th at p. 474.)

Based on the above, for the purposes of the CEQA analysis, the relevant inquiry is not whether future residents, workers, and guests at the proposed project will be exposed to preexisting environmental noise-related hazards, but instead whether project-generated noise will exacerbate the pre-existing conditions. However, an evaluation of estimated noise levels at the exterior of the proposed buildings is provided herein for informational purposes and project conditioning.

As noted previously, ambient noise levels at the project site are defined primarily by traffic noise along Monterey Road and train activity associated with the adjacent UPRR tracks. The proposed project would include construction of an eight-foot-tall solid barrier along the length of the eastern site boundary, adjacent to the UPRR right-of-way, which would help to shield the proposed structures from train noise associated with the tracks.³¹ The barrier can be constructed from wood, concrete, or other material, such as a gapless wood fence. In addition, the project would include a 42-inch tall decorative screen wall/sound

³¹ Veneklasen Associates. *Exterior Noise Analysis – Barrier Wall from Building 10 through Building 14*. January 30, 2020.

attenuation feature along the southwest side of the proposed bocce ball court, to be located near the site entrance at Monterey Road. Pursuant to the Noise Analysis, with construction of the eight-foot-tall barrier and the sound attenuation feature at the bocce ball court, exterior noise levels at the proposed residences and outdoor recreation areas would comply with the City's 65 dB L_{dn} standard for traffic noise exposure, as well as the City's 70 dB L_{dn} standard for rail noise exposure, recognizing that train noise is characterized by relatively few loud events.

With regard to interior noise levels, the City would require, as a Condition of Approval, project compliance with the applicable recommendations in the Noise Analysis related to exterior glazing and exterior glass door sound transmission class (STC) ratings, as well as recommendations related to inclusion of solid balcony railings with a minimum height of 46 inches for buildings within 'Zone A' (as shown in Figure 1, Noise Zones, of the Noise Analysis). As noted in the Noise Analysis, compliance with such recommendations would ensure that interior noise levels would be reduced to below the applicable 45 dB L_{dn} standard.

Conclusion

Based on the above, operation of the proposed project would not result in the generation of a substantial permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the City's General Plan and the Municipal Code. However, considering the potential for construction activities to conflict with standards established by Section 8.28.040 (Enumeration of unlawful noises) of the City's Municipal Code, the proposed project could result in a **potentially significant** impact related to temporary increases in ambient noise levels in the project area.

Mitigation Measure(s)

Implementation of the following mitigation measures would reduce the above impact to a *less-than-significant* level.

XIII-1. Noise-generating construction activities associated with the proposed project shall only occur within the hours identified in Municipal Code Section 8.28.040(D). The above language shall be included on final project improvement plans prior to approval by the City of Morgan Hill Development Services Department.

XIII-2. To the maximum extent practical, the following measures shall be implemented during project construction:

- All noise-producing project equipment and vehicles using internal-combustion engines shall be equipped with manufacturers-recommended mufflers and be maintained in good working condition;*
- All mobile or fixed noise-producing equipment used on the project site that are regulated for noise output by a federal, State, or local agency shall comply with such regulations while in the course of project construction;*
- Electrically powered equipment shall be used instead of pneumatic or internal-combustion-powered equipment, where feasible;*

- *Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from noise-sensitive receptors;*
- *Project area and site access road speed limits shall be established and enforced during the construction period; and*
- *Nearby residences shall be notified of construction schedules so that arrangements can be made, if desired, to limit their exposure to short-term increases in ambient noise levels.*

The above requirements shall be included via notation on project grading plans, subject to review and approval by the Development Services Department.

- b. Similar to noise, vibration involves a source, a transmission path, and a receiver. However, noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration depends on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration is measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration in terms of peak particle velocities (PPV) in inches per second (in/sec). Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of PPV.

Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table 9, which was developed by Caltrans, shows the vibration levels that would normally be required to result in damage to structures. As shown in the table, the threshold for architectural damage to structures is 0.20 in/sec PPV and continuous vibrations of 0.10 in/sec PPV, or greater, would likely cause annoyance to sensitive receptors.

The proposed project would only cause elevated vibration levels during construction, as the proposed project would not involve any uses or operations that would generate substantial groundborne vibration. Although noise and vibration associated with the construction phases of the project would add to the noise environment in the immediate project vicinity, construction activities would be temporary in nature and are anticipated to occur during normal daytime working hours.

The primary vibration-generating activities associated with the proposed project would occur during grading, paving, placement of utilities, and construction of foundations. Table 10 shows the typical vibration levels produced by construction equipment at various distances. The most substantial source of groundborne vibrations associated with project construction would be the use of vibratory compactors. Use of vibratory compactors/rollers could potentially be required during construction of the proposed drive aisles.

Table 9			
Effects of Vibration on People and Buildings			
PPV		Human Reaction	Effect on Buildings
mm/sec	in/sec		
0.15 to 0.30	0.006 to 0.019	Threshold of perception; possibility of intrusion	Vibrations unlikely to cause damage of any type
2.0	0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
2.5	0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of “architectural” damage to normal buildings
5.0	0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations)	Threshold at which there is a risk of “architectural” damage to normal dwelling - houses with plastered walls and ceilings. Special types of finish such as lining of walls, flexible ceiling treatment, etc., would minimize “architectural” damage
10 to 15	0.4 to 0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause “architectural” damage and possibly minor structural damage
Source: Caltrans. Transportation Related Earthborne Vibrations. TAV-02-01-R9601. February 20, 2002.			

Table 10		
Vibration Levels for Various Construction Equipment		
Type of Equipment	PPV at 25 feet (in/sec)	PPV at 50 feet (in/sec)
Large Bulldozer	0.089	0.029
Loaded Trucks	0.076	0.025
Small Bulldozer	0.003	0.000
Auger/drill Rigs	0.089	0.029
Jackhammer	0.035	0.011
Vibratory Hammer	0.070	0.023
Vibratory Compactor/roller	0.210	0.070
Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment Guidelines, May 2006.		

Use of vibratory compactors/rollers could be required during construction of the proposed on-site drive aisle, a portion of which would be located directly adjacent to the existing single-family residence to the southeast of the site. Operation of vibratory compactors/rollers used for construction of the drive aisle could operate at a distance of approximately 25 feet from the existing off-site residence; thus, groundborne vibrations at the structure could potentially exceed 0.2 in/sec PPV.

It should be noted that paving activities associated with the proposed project would occur at different portions of the site at different times. Thus, groundborne vibration at the nearby residence would occur intermittently over a short period of time. Nonetheless, based on the above, the use of vibratory rollers during construction activities could expose people

to or generate excessive groundborne vibration or groundborne noise levels, and impacts could be **potentially significant**.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above potential impact to a *less-than-significant* level.

XIII-3 During construction activities associated with the proposed project, any compaction required within 25 feet of existing structures adjacent to the project site shall be accomplished by using static drum rollers rather than vibratory compactors. The above requirement shall be included via notation on any grading plans approved for the project to the satisfaction of the City of Morgan Hill Development Services Department.

- c. The public airport nearest to the project site is the San Martin Airport, which is located approximately 4.75 miles south of the project site at 13030 Murphy Avenue. The project site is located well outside of the Airport Influence Area (AIA) identified in the South County Airport Comprehensive Land Use Plan.³² In addition, the project site is not located within the vicinity of a private airstrip. Therefore, the proposed project would not expose people residing or working in the project area to excessive noise levels associated with air traffic, and **no impact** would occur.

³² Santa Clara County. *Comprehensive Land Use Plan, Santa Clara County, South County Airport*. Amended November 16, 2016.

XIV. POPULATION AND HOUSING.

Would the project:

	Potentially Significant Impact	Less-Than- Significant with Mitigation Incorporated	Less-Than- Significant Impact	No Impact
a. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (e.g., through projects in an undeveloped area or extension of major infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>

Discussion

- a. The timing, type, and amount of residential growth in Morgan Hill has historically been controlled by the City's Residential Development Control System (RDCS) which was adopted for the purpose of managing growth in Morgan Hill. Measure S was approved by the Morgan Hill voters in 2016, extending the City's RDCS to 2035, and establishing a City population ceiling of 58,200. On January 1, 2020, the City's RDCS was suspended by SB 330 Housing Crisis Act of 2019 (Housing Accountability Act) for five years. The Housing Accountability Act prohibits a local agency from placing a cap on the number of housing units that can be approved or construct either annually or for some other time period or limits the population of the jurisdiction. The land use of the property was contemplated within the 2035 General Plan; therefore, the project would not directly or indirectly induce substantial population growth in the area beyond what has been previously analyzed in the General Plan EIR. Therefore, a **less-than-significant** impact would occur.
- b. The proposed project would require demolition of an existing mobile home. However, removal of a single residence would not be considered to displace substantial numbers of existing people or housing. In addition, given that the project would develop the project site with 101 multi-family units, construction of replacement housing elsewhere would not be required. Therefore, a **less-than-significant** impact would occur.

XV. PUBLIC SERVICES.

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

	Potentially Significant Impact	Less-Than- Significant with Mitigation Incorporated	Less-Than- Significant Impact	No Impact
a. Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>
b. Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>
c. Schools?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>
d. Parks?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>
e. Other Public Facilities?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>

Discussion

a-c,e. The City of Morgan Hill contracts with CAL FIRE (California Department of Forestry and Fire Protection) for fire protection services. Three fire stations are located within the City boundaries: El Toro Station, located at 18300 Old Monterey Road; Dunne-Hill Station, located at 2100 Dunne Avenue; and the CAL FIRE station at 15670 Monterey Road. The nearest fire station (El Toro station) is located approximately 0.2-mile to the northeast of the site by way of Old Monterey Road. The incremental increase in demand associated with the proposed project would not necessitate new or physically altered facilities and would not be substantial enough that the current response times could not be maintained. Accordingly, the response time from the El Toro station would be anticipated to be within the City's preferred response time of five minutes or less. The project site is also located within the Morgan Hill Police Department's normal patrol routes, and, thus, police response times would be comparable to nearby existing developments. Furthermore, given that the project is consistent with the site's current General Plan land use and zoning designations, impacts related to provision of new or physically altered fire and police protection facilities have been previously analyzed in the General Plan EIR. The General Plan EIR concluded that buildout of the City would have a less-than-significant impact related to the provision of such public services.

The Morgan Hill Unified School District (MHUSD) operates public education facilities that serve the project site and surrounding area. The City of Morgan Hill is served by eight elementary schools, two middle schools, two high schools, one continuation school, one K-8 home school program, and one community adult school. Utilizing the MHUSD student yield rate of 0.465 students per household, the total anticipated development potential for the project site (101 residential units) could add approximately 47 new students to MHUSD schools.

The City collects development impact fees to help pay for public services that include public schools. Proposition 1A/SB 50 prohibits local agencies from using the inadequacy of school facilities as a basis for denying or conditioning approvals of any "legislative or adjudicative act involving the planning, use, or development of real property." (Government Code 65996(b).) Satisfaction of the Proposition 1A/SB 50 statutory requirements by a developer is deemed to be "full and complete mitigation." Therefore, according to SB 50, the payment of the necessary school impact fees for the project would be full and satisfactory CEQA mitigation.

With regard to other public facilities, such as libraries, given the relatively small number of units included in the proposed project, the project would not be anticipated to result in a

substantial increase in demand for library services, or other public facilities, such that expanded facilities would be required. Future residents of the proposed project would have access to the 28,000-square foot Morgan Hill Library, which is operated by the Santa Clara County Library District. In addition, the General Plan EIR concluded that buildout of the City, including the project site, would have a less-than-significant impact related to libraries.

Based on the above, the project would have a ***less-than-significant*** impact with respect to creating adverse physical environmental impacts associated with the provision of new or physically altered governmental facilities in order to maintain acceptable service ratios, response times or other performance objectives for fire protection, police protection, and schools.

- d. The proposed project is anticipated to generate an estimated 311 additional residents (101 units X 3.08 persons per household = 311 residents) in the City of Morgan Hill.³³ The City of Morgan Hill recently adopted Ordinance No.'s 2305 and 2315 updating Chapter 17.28 (Land Dedications and Reservations) of the Municipal Code requirements for park dedication or fees in lieu to allow for the use of Quimby Act fees. The City continues to collect park impact fees for development where subdivision is not required. Chapter 17.28 of the Municipal Code requires residential developers to dedicate public parkland or pay in-lieu fees, or both, to offset the demand for neighborhood parkland created by their housing developments. The acreage of parkland or amount of the in-lieu fee required is based upon criteria outlined in Chapter 17.28 of the City's Municipal Code. In addition, the proposed project would include multiple open space/common areas as an amenity for future residents. Amenities to be included within the common space areas would include, but not be limited to, a putting green, shaded patio spaces, a basketball area, a sport court, BBQ areas, a bocce ball court, and a tot lot/kids play area. Given that the proposed project would be required to comply with Chapter 17.28 of the Municipal Code, and the project would provide a range of on-site recreational amenities, the project would have a ***less-than-significant*** impact with respect to creating adverse physical environmental impacts associated with the provision of new or physically altered governmental facilities in order to maintain acceptable service ratios, response times or other performance objectives for parks.

³³ City of Morgan Hill. *Housing Element* [Table 1-1]. Adopted February 18, 2015.

XVI. RECREATION.

Would the project:

	Potentially Significant Impact	Less-Than- Significant with Mitigation Incorporated	Less-Than- Significant Impact	No Impact
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>

Discussion

- a,b. Considering the total of 101 residential units, the proposed project would generate approximately 311 additional residents (based on 3.08 persons per household) in the City of Morgan Hill.³⁴ Given the City's parkland goal of five acres per 1,000 residents, the proposed project would create the need for a minor amount of additional parkland (1.56 acres). The City of Morgan Hill has adopted a Land Dedications and Reservations Ordinance (Municipal Code Chapter 17.28) that requires residential developers to dedicate public parkland or pay in-lieu fees, or both, to offset the demand for neighborhood parkland created by their housing developments. If there is no park or recreational facility designated in the City's Bikeways, Trails, Parks and Recreation Master Plan to be located in whole or in part within the proposed subdivision to serve the immediate and future needs of the residents of the subdivision, the subdivision shall pay a fee equal to the value of the land prescribed for dedication per Section 17.28.060 of the Municipal Code. The project is not located in whole or in part of a recreational facility identified in the Master Plan; therefore, the project is not proposing to dedicate any land to the City for recreational facilities. The project applicant would pay in-lieu fees required per the Municipal Code. The park impact fees imposed by the City will generate revenue to acquire necessary land to develop new parks or rehabilitate existing neighborhood parks and recreation facilities reasonably related to serve the subdivision. In addition, while the proposed project would not provide any public parkland on-site, the project would include on-site open space/common areas as an amenity for future residents. Based on the above, a ***less-than-significant*** impact would occur with regard to recreational resources.

³⁴ According to the persons per household demographic projection for Morgan Hill for the year 2015 (see Table 1-1 of City of Morgan Hill Housing Element, adopted February 18, 2015).

XVII. TRANSPORTATION.

Would the project:

	Potentially Significant Impact	Less-Than- Significant with Mitigation Incorporated	Less-Than- Significant Impact	No Impact
a. Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>
b. Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>
d. Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>

Discussion

The following discussion is based on the Traffic Impact Analysis prepared for the proposed project by Hexagon Transportation Consultants, Inc. (see Appendix G).³⁵

- a. The Traffic Impact Analysis evaluated the following study intersections within the project vicinity (see Figure 10):
 1. Monterey Road and Cochrane Road;
 2. Monterey Road and Old Monterey Road;
 3. Monterey Road and Wright Avenue;
 4. Monterey Road and Central Avenue (unsignalized);
 5. Monterey Road and Main Avenue;
 6. Butterfield Boulevard and Cochrane Road;
 7. Sutter Boulevard and Cochrane Road;
 8. Madrone Parkway/Cochrane Plaza and Cochrane Road;
 9. US 101 Southbound Ramps and Cochrane Road;
 10. US 101 Northbound Ramps and Cochrane Road; and
 11. Old Monterey Road and Llagas Road (unsignalized).

Traffic conditions at all of the study intersections were analyzed for the weekday AM and PM peak hours. The weekday AM peak hour of traffic is generally between 7:00 AM and 9:00 AM and the weekday PM peak hour is typically between 4:00 PM and 6:00 PM.

It should be noted that according to Congestion Management Program (CMP) Traffic Impact Analysis Guidelines, dated March 2009, a freeway level of service (LOS) analysis is required if the number of project trips added to any freeway segment equals or exceeds one percent of the capacity of the segment. As stated in the TIA, an analysis of freeway segments was not performed because the proposed project would not add traffic equal to at least one percent of capacity of any freeway segment.

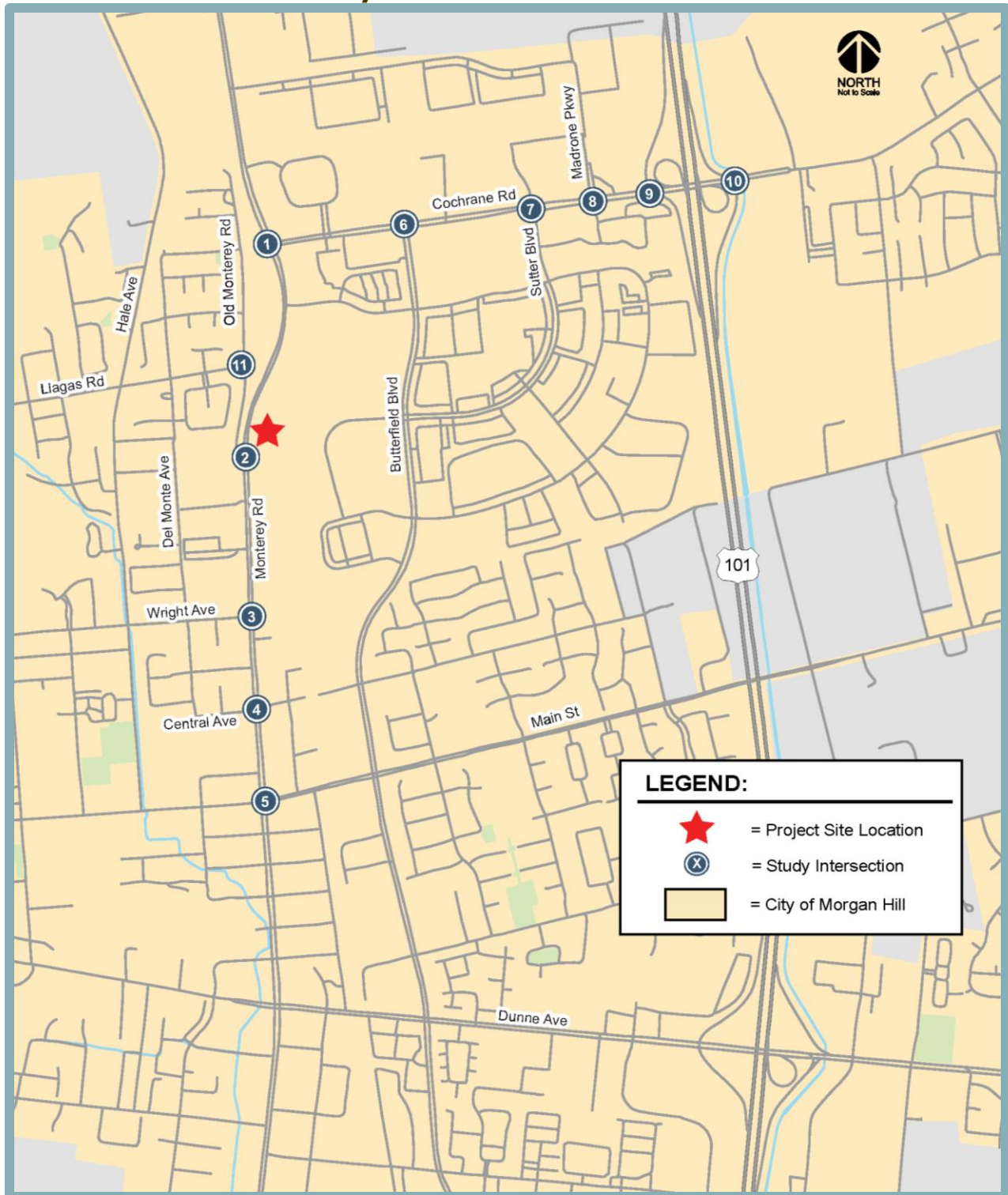
Study Scenarios

The operations of the study intersections were evaluated for the following four scenarios:

- **Scenario 1: Existing Conditions.** Existing conditions represent existing peak-hour traffic volumes on the existing roadway network. Existing peak-hour traffic volumes

³⁵ Hexagon Transportation Consultants, Inc. *Monterey Gateway Traffic Impact Analysis (TIA)*. November 27, 2019.

Figure 10
Study Intersection Locations



Source: Hexagon Transportation Consultants, Inc., 2019.

were obtained from turning-movement traffic counts conducted as part of recently completed traffic studies and supplemented with new manual turning-movement counts at the study intersections where counts were either unavailable or outdated (more than two years old).

- **Scenario 2: Existing plus Project Conditions.** Project-generated traffic volumes at full capacity of the proposed project were added to existing traffic volumes to estimate existing plus project conditions. Existing plus project conditions were evaluated relative to existing conditions in order to determine potential project impacts.
- **Scenario 3: Year 2025 Cumulative Conditions.** Year 2025 Cumulative conditions represent future traffic volumes on the future transportation network. Year 2025 Cumulative conditions include traffic growth projected to occur in the Year 2025 without the proposed project, including but not limited to the approved Butterfield-Keenan General Plan Amendment Project to the east of the project site.
- **Scenario 4: Year 2025 Cumulative plus Project Conditions.** Year 2025 Cumulative with project consists of Year 2025 Cumulative traffic conditions with the addition of project traffic. Cumulative plus project conditions were evaluated relative to cumulative conditions in order to determine potential cumulative project impacts.

The following section describes the analysis methodology, thresholds of significance, and each of the scenarios evaluated for the proposed project.

Thresholds of Significance

The City of Morgan Hill's 2010 *Guidelines for Preparation of Transportation Impact Studies* requires signalized intersection operations and impacts to be evaluated based on the jurisdiction's LOS standards (i.e., minimum threshold for acceptable operations). The LOS standard for City of Morgan Hill intersections is LOS D, except for the following:

- **LOS F** for Downtown intersections and segments including at Main Avenue/Monterey Road, along Monterey Road between Main Avenue and Fifth Street, and along Depot Street at First Street through Fifth Street;
- **LOS E** for the following intersections and freeway zones:
 - Main Avenue and Del Monte Avenue;
 - Main Avenue and Depot Street;
 - Dunne Avenue and Del Monte Avenue;
 - Dunne Avenue and Monterey Avenue;
 - Dunne Avenue and Church Street;
 - Dunne Avenue and Depot Street;
 - Cochrane Road and Monterey Road;
 - Tennant Avenue and Monterey Road;
 - Tennant Avenue and Butterfield Boulevard;
 - Cochrane Road Freeway Zone: from Madrone Parkway/Cochrane Plaza to Cochrane Road/DePaul Drive;
 - Dunne Avenue Freeway Zone: from Walnut Grove Drive/East Dunne Avenue to Condit Road/East Dunne Avenue; and
 - Tennant Avenue Freeway Zone: from Butterfield Boulevard/Tennant Avenue to Condit Road/Tennant Avenue.

Five of the study intersections are subject to LOS E or LOS F standards, while the remaining six study intersections are subject to a LOS D standard.

Signalized Intersections

According to the City of Morgan Hill LOS guidelines, a development would create a significant adverse impact on traffic conditions at a signalized intersection if the following occurs for either peak hour:

1. The LOS at the intersection degrades from an acceptable level under existing conditions to an unacceptable level under project conditions, or
2. The LOS at the intersection is an unacceptable level under existing conditions and the addition of project trips causes the average critical delay to increase by four or more seconds *and* the volume-to-capacity ratio (V/C) to increase by 0.01 or more.

An exception to the above applies when the addition of project traffic reduces the amount of average delay for critical movements (i.e., the change in average delay for critical movements is negative). In such a case, the threshold of significance is an increase in the critical V/C value by 0.01 or more.

Unsignalized Intersections

Unsignalized intersections within the City of Morgan Hill have a minimum operating level of LOS D, with the exception of unsignalized intersections located within the Downtown area and freeway zones, as identified above, which have a LOS E or F standard. All four of the unsignalized study intersections have a LOS standard of LOS D.

A development would have a significant adverse impact on traffic conditions at an unsignalized intersection if, for either peak hour, the worst approach (for one- and two-way stop control) or the overall intersection (for all-way stop control) delay corresponds to an unacceptable LOS E or F *and* the traffic volumes at the intersection are sufficiently high to satisfy the peak-hour signal warrant.

Trip Generation

The trip generation rates for single-family detached housing (Land Use 210) and shopping center (Land Use 820) as published in the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 10th Edition* (2017) were applied to the proposed condominiums and retail space, respectively. Single-family detached housing trip generation rates were used to estimate the number of trips that would be generated by the proposed condominiums because the trip-making characteristics of varying types of residential units would be similar due to the limited transit services and employment opportunities within Morgan Hill. Based on ITE trip rates, single-family homes generate the greatest number of per unit trips for residential uses. Therefore, the use of single-family trip rates provides a conservative estimate of trips for the proposed condominium units.

The trip estimates for each of the proposed land use components of the project were reduced to account for internalization, or trips made between each of the proposed land uses. The reductions are based on the assumption that vehicle trips to each of the proposed land uses of the site would be reduced due to internalization of trips. As prescribed by the VTA *Transportation Impact Analysis Guidelines* (October 2014), a trip reduction of 15 percent to account for the internalization between residential and retail land uses was applied to the estimated trips for the project.

In addition, trip generation for retail uses is typically adjusted to account for pass-by-trips. Pass-by-trips are trips that would already be on the adjacent roadways (and are therefore

already counted in the existing traffic) but would turn into the site while passing by. Justification for applying the pass-by-trip reduction is founded on the observation that such retail traffic is not actually generated by the retail development, but is already part of the ambient traffic levels. Pass-by-trips are therefore excluded from the traffic projections (although pass-by traffic is accounted for at the site entrances). A typical pass-by trip reduction of 20 percent for retail development within the City of Morgan Hill was applied to the retail component of the proposed project.

Based on the ITE rates with trip adjustments and reductions, the proposed development would generate a total of 1,043 daily vehicle trips, with 78 trips (21 inbound and 57 outbound) occurring during the AM peak hour and 107 trips (66 inbound and 41 outbound) occurring during the PM peak hour. Trips associated with the mobile home on the project site were estimated using ITE rates and subtracted from the estimated trips to be generated by the proposed project. Based on ITE rates, the mobile home currently generates 9 daily vehicle trips, with 1 trip (0 inbound and 1 outbound) occurring during the AM peak hour and 1 trip (1 inbound and 0 outbound) occurring during the PM peak hour.

After applying the ITE trip rates, appropriate trip reductions, and existing site trip credits, the project would generate a net additional 1,034 daily vehicle trips, with 77 trips (21 inbound and 56 outbound) occurring during the AM peak hour and 106 trips (65 inbound and 41 outbound) occurring during the PM peak hour (see Table 11).

Trip Distribution and Assignment

The trip distribution pattern for the proposed project was estimated based on project information, existing travel patterns on the surrounding roadway system, the locations of complementary land uses, and use of the City of Morgan Hill Traffic Demand Forecasting (TDF) Model. The peak hour trips generated by the proposed development were assigned to the roadway system in accordance with the trip distribution patterns discussed above. Additional details regarding vehicle trip assumptions are included in the Traffic Impact Analysis.

Existing Plus Project

Under Existing Plus Project conditions, the existing roadway network and configurations are assumed to remain unchanged, with the exception of minor changes to the Monterey Road/Old Monterey Road intersection. As part of the proposed project, a new east approach at the intersection of Monterey Road and Old Monterey Road would be constructed to serve as the main access to the project site. The east approach would include a separate left-turn lane and a shared through and right-turn lane. To facilitate access to the project site, the addition of a separate southbound left-turn lane and restriping of the middle exclusive eastbound left-turn lane to a shared through and left-turn lane would also be required. The addition of the east approach to serve the proposed project would require signal modification at the intersection.

Net new project trips, as represented in the project trip assignment discussed above, were added to the existing traffic volumes to obtain Existing Plus Project traffic volumes. The results of the intersection LOS analysis under existing plus project conditions are summarized in Table 12. All of the study intersections are projected to operate at acceptable levels of service under Existing Plus Project conditions during both the AM and PM peak hours. Therefore, the proposed project would result in a less-than-significant impact to study intersections under the Existing Plus Project condition.

Table 11 Trip Generation Estimates											
Land Use	Size	Daily		AM Peak Hour				PM Peak Hour			
		Rate	Trips	Rate	In	Out	Total	Rate	In	Out	Total
Proposed Land Uses											
Single-Family Housing (ITE 120)	101 units	9.440	953	0.740	19	56	75	0.990	63	37	100
Housing and Retail Mixed-Use Reduction (15%)			-20		0	0	0		-1	-1	-2
Shopping Center (ITE 820)	3,500 sf	37.750	132	0.940	2	1	3	3.810	6	7	13
Housing and Retail Mixed-Use Reduction (15%)			-20		0	0	0		-1	-1	-2
Retail Pass-by (20%)			-2		0	0	0		-1	-1	-2
Total Project Trips			1,043		21	57	78		66	41	107
Existing Land Uses											
Single-Family Housing (ITE 120)	1 unit	9.440	9	0.740	0	1	1	0.990	1	0	1
Net New Trips											
			1,034		21	56	77		65	41	106
Source: Hexagon Transportation Consultants, Inc., 2019.											

Table 12
Existing and Existing Plus Project Conditions Intersection LOS

Intersection	LOS Standard	Peak Hour	Existing			Existing Plus Project				
			Warrant Met? ¹	Average Critical Delay ²	LOS	Warrant Met? ¹	Average Critical Delay ²	LOS	Average Critical Delay Change	Critical Change V/C
1. Monterey Road and Cochrane Road	E	AM	-	28.1	C	-	28.1	C	0.2	0.005
		PM	-	24	C	-	24.9	C	1.1	0.013
2. Monterey Road and Old Monterey Road	D	AM	-	10.8	B	-	18.5	B	2.4	0.121
		PM	-	15	B	-	22.9	C	6	0.038
3. Monterey Road and Wright Avenue	D	AM	-	19.1	B	-	19.1	B	0	0.002
		PM	-	20.4	C	-	20.4	C	0.1	0.004
4. Monterey Road and Central Avenue	D	AM	No	19.5	C	No	20.1	C	N/A	N/A
		PM	No	15.7	C	No	15.9	C	N/A	N/A
5. Monterey Road and Main Avenue	F	AM	-	44.2	D	-	44.4	D	0.3	0.006
		PM	-	45.1	D	-	45.2	D	0.1	0.003
6. Butterfield Boulevard and Cochrane Road	D	AM	-	12.3	B	-	12.4	B	0	0.007
		PM	-	12	B	-	11.9	B	0	0
7. Sutter Boulevard and Cochrane Road	D	AM	-	17.2	B	-	17.2	B	0	0.007
		PM	-	17.9	B	-	18	B	-0.1	0.005
8. Madrone Parkway/Cochrane Plaza and Cochrane Road	E	AM	-	19.1	B	-	19.2	B	-2.9	-0.003
		PM	-	31.4	C	-	31.2	C	-0.1	0.005
9. US 101 Southbound Ramps and Cochrane Road	E	AM	-	12.8	B	-	12.8	B	0.2	0.011
		PM	-	16.5	B	-	16.7	B	0.3	0.015
10. US 101 Northbound Ramps and Cochrane Road	E	AM	-	8.6	A	-	8.6	A	0	0
		PM	-	11.3	B	-	11.3	B	0	0.002
11. Old Monterey Road and Llagas Road	D	AM	No	8.4	A	No	8.4	A	N/A	N/A
		PM	No	8.4	A	No	8.4	A	N/A	N/A

Notes:

- ¹ Signal warrant analysis based on the Peak Hour Signal Warrant #3, Figure 4C Caltrans MUTCD, 2014. Signal warrant analysis is not applicable to signalized intersections.
- ² The reported delay and corresponding LOS for signalized and all-way stop-controlled intersections represents the average delay for all approaches at the intersection. The reported delay and corresponding LOS for one- and two-way stop-controlled intersections are based on the stop-controlled approach with the highest delay.

Source: Hexagon Transportation Consultants, Inc., 2019.

Cumulative Plus Project

Traffic volumes for the Year 2025 Cumulative condition were developed based on traffic forecasts produced for the City of Morgan Hill 2035 General Plan using the City's Traffic Demand Forecasting (TDF) model. The Year 2035 General Plan traffic forecasts include land use growth and transportation improvements associated with buildout of the City's General Plan, including future development of up to 409 residential units on the property to the east of the project site as part of the approved Butterfield-Keenan General Plan Amendment Project. The Year 2025 Cumulative traffic volumes were developed using a growth method that involved adding a proportion (10 years, or 50 percent) of the 2035 projected growth, developed from forecasted turn-movements, to existing traffic counts at each of the study intersections. The projected growth was calculated by taking the difference between Base Year 2015 and Year 2025 forecasted turn movements. The Traffic Impact Study did not account for any future roadway improvements under the cumulative conditions beyond those included for the Existing Plus Project conditions.

Traffic associated with buildout of the project site was included in the City's General Plan forecasts and the developed Year 2025 Cumulative traffic volumes. Therefore, the trips associated with the adopted General Plan land uses for the project site were removed to develop Year 2025 Cumulative no project traffic volumes. The adopted GP land uses for the project site were estimated to consist of 52 residential units, 3,000 square feet of retail space, and 3,000 square feet of office space. The land uses of the proposed project are of greater intensity than those assumed in the General Plan. When compared with the land uses included in the City's General Plan, the proposed project would result in an additional 34 AM peak hour trips and 48 PM peak hour trips at the project site.

The LOS results under Cumulative and Cumulative Plus Project conditions are summarized in Table 13. As shown in the table, the intersection of Monterey Road and Central Avenue is projected to operate unacceptably (LOS E) during the AM peak hour without the addition of project traffic, and the signal warrant would be met. Under the Cumulative Plus Project condition, the proposed project would add vehicle trips to the intersection; however, the City has not established a vehicle delay or V/C increase threshold to indicate whether the added trips would result in a significant impact. In addition, the proposed project is consistent with the site's current General Plan land use designation. Per Public Resources Code (PRC) Section 21083.3, if a development project is consistent with the local general plan and zoning, the environmental analysis should be limited to effects on the environment which are peculiar to the parcel or to the project and which were not addressed as significant effects in the prior EIR. The General Plan EIR concluded that cumulative development would result in significant cumulative traffic impacts to certain intersections within the City, including to the Monterey Road and Central Avenue intersection.³⁶ Mitigation was included in the General Plan EIR requiring the City to signalize the intersection. According to CEQA Guidelines Section 15130(a)(3), paying a "fair share fee" is permissible as effective mitigation for cumulative impacts if the fees are part of a reasonable plan of actual mitigation that the relevant agency commits itself to implementing. Thus, the project will be conditioned to pay its fair-share towards the improvement project. Pursuant to PRC 21083.3, additional cumulative traffic analysis is not required for the project.

³⁶ City of Morgan Hill. *2035 General Plan Draft EIR* [pg 4.14-43]. January 2016.

Table 13
Cumulative and Cumulative Plus Project Conditions Intersection LOS

Intersection	LOS Standard	Peak Hour	Cumulative			Cumulative Plus Project				
			Warrant Met? ¹	Average Critical Delay ²	LOS	Warrant Met? ¹	Average Critical Delay ²	LOS	Average Critical Delay Change	Critical Change V/C
1. Monterey Road and Cochrane Road	E	AM	-	29.1	C	-	29.2	C	0.3	0.005
		PM	-	25.6	C	-	26.5	C	1.1	0.013
2. Monterey Road and Old Monterey Road	D	AM	-	11	B	-	20.4	C	5.2	0.168
		PM	-	16.6	B	-	25.2	C	7.1	0.041
3. Monterey Road and Wright Avenue	D	AM	-	21	C	-	21.1	C	0.1	0.002
		PM	-	21.8	C	-	21.9	C	0.1	0.004
4. Monterey Road and Central Avenue	D	AM	Yes	36.9	E	Yes	39.4	E	N/A	N/A
		PM	No	23	C	No	23.6	C	N/A	N/A
5. Monterey Road and Main Avenue	F	AM	-	46.4	D	-	46.6	D	0.3	0.006
		PM	-	47.6	D	-	47.7	D	0.1	0.003
6. Butterfield Boulevard and Cochrane Road	D	AM	-	12.6	B	-	12.7	B	0.1	0.007
		PM	-	13.5	B	-	13.4	B	0.0	0.000
7. Sutter Boulevard and Cochrane Road	D	AM	-	17.5	B	-	17.6	B	0.0	0.007
		PM	-	17.5	B	-	17.5	B	0.1	0.013
8. Madrone Parkway/Cochrane Plaza and Cochrane Road	E	AM	-	18.9	B	-	18.9	B	0.0	0.001
		PM	-	31.9	C	-	31.8	C	-0.1	0.005
9. US 101 Southbound Ramps and Cochrane Road	E	AM	-	13.9	B	-	14.0	B	0.2	0.011
		PM	-	19.5	B	-	19.8	B	0.6	0.015
10. US 101 Northbound Ramps and Cochrane Road	E	AM	-	7.9	A	-	7.9	A	0.0	0.000
		PM	-	11.5	B	-	11.5	B	0.0	0.002
11. Old Monterey Road and Llagas Road	D	AM	No	8.5	A	No	8.5	A	N/A	N/A
		PM	No	8.9	A	No	8.9	A	N/A	N/A

Notes:

- ¹ Signal warrant analysis based on the Peak Hour Signal Warrant #3, Figure 4C Caltrans MUTCD, 2014. Signal warrant analysis is not applicable to signalized intersections.
- ² The reported delay and corresponding LOS for signalized and all-way stop-controlled intersections represents the average delay for all approaches at the intersection. The reported delay and corresponding LOS for one- and two-way stop-controlled intersections are based on the stop-controlled approach with the highest delay.

Source: Hexagon Transportation Consultants, Inc., 2019.

All other study intersections are projected to operate at acceptable levels of service under Cumulative Plus Project conditions during both the AM and PM peak hours. Therefore, the proposed project would result in a less-than-significant impact to study intersections under the Cumulative Plus Project condition.

Pedestrian, Bicycle, and Transit Facilities

Sidewalks are provided along the east side of Monterey Road, with a short discontinuity between Old Monterey Road and Granada Street, and on the west side of the street south of Old Monterey Road. The proposed project would provide a new sidewalk along the project frontage on Monterey Road, connecting to the existing pedestrian sidewalk to the north of the Old Monterey Road and Monterey Road intersection. In addition, the signalized intersection of Monterey Road and Old Monterey Road currently has a crosswalk across the south approach, providing a connection between sidewalks on both sides of Monterey Road. Such pedestrian facilities would provide a pedestrian connection between the project site and nearby land uses along Monterey Road. Thus, the proposed project would not conflict with any existing or planned pedestrian facilities and would provide for improved pedestrian connectivity in the project area.

Bike lanes are currently provided along the length of Monterey Road, with a discontinuity between Main Avenue and Dunne Avenue. In addition, bike lanes are located along Main Avenue, Cochrane Road, Butterfield Boulevard, and Hale Avenue. With development of the proposed project, the existing bike lane along the Monterey Road frontage would be retained. Per the Traffic Impact Analysis prepared for the proposed project, bicycle trips would comprise one percent or less of the total project-generated trips. Thus, the project could potentially generate approximately one new bicycle trip during each of the peak hours. The demand generated by the proposed project could be accommodated by the existing bicycle facilities in the vicinity of the project site. Thus, the proposed project would not conflict with any existing or planned bicycle facilities and sufficient bicycle facilities would be available for future project residents, workers, and guests.

The project site is not directly served by any existing bus route. The nearest bus stops for Route 68 to the project are located approximately 0.4-mile west of the site at Hale Avenue and Llagas Road. A typical mode split in Morgan Hill would be a three percent transit share. Assuming up to three percent transit mode share for the proposed project, the project would generate approximately three transit riders or less during the AM and PM peak hours. The transit ridership demands of the proposed project would not justify the enhancement of any existing transit facilities. Overall, the proposed project would not have a substantial adverse effect on transit facilities in the project area.

Based on the above, a ***less-than-significant*** impact would occur related to conflicting with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

- b. Section 15064.3 of the CEQA Guidelines provides specific considerations for evaluating a project's transportation impacts. Pursuant to Section 15064.3, analysis of VMT attributable to a project is the most appropriate measure of transportation impacts. Other relevant considerations may include the effects of the project on transit and non-motorized travel. It should be noted that currently, the provisions of Section 15064.3 apply only prospectively; determination of impacts based on VMT is not required Statewide until July 1, 2020.

The proposed project would include features to reduce overall VMT. Pursuant to Section 15064.3(b)(3), a lead agency may analyze a project's VMT qualitatively based on the availability of transit, proximity to destinations, etc. Bus service is currently provided in the project region by the VTA, and the site is located approximately 0.4-mile from the nearest bus stop. As noted previously, numerous bike lanes and bike paths are provided in the vicinity of the project site, including along Monterey Road. The proposed project would include installation of new sidewalks along the southern portion of the site's Monterey Road frontage. The availability of such transit, bicycle, and pedestrian infrastructure in the site vicinity would help to reduce VMT associated with residents, workers, and guests travelling to and from the project site. Furthermore, the proposed project would include both retail and residential uses. As such, future project residents may rely in part on the on-site retail uses, as opposed to travelling off-site, and a portion of the workers at the proposed retail uses would likely reside on-site. Such internal trip capture would further reduce VMT associated with the project.

Based on the above, the proposed project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3(b), and a ***less-than-significant*** impact would occur.

- c,d. Primary access to the proposed project would be by way of a new right-in, right-out access at the existing Monterey Road and Old Monterey Road intersection. A new southbound left-turn lane would be added to the intersection as part of the project to facilitate access to the site. Per the Traffic Impact Analysis, the maximum vehicle queues for the southbound left-turn movement and westbound approach are projected to be 75 feet and 50 feet long, respectively. The proposed southbound left-turn lane would be designed to accommodate the projected 75-foot-long queue, and the driveway throat between Monterey Road and the internal on-site drive aisle would provide sufficient storage to accommodate the projected 50-foot-long westbound queue.

A proposed 26-foot-wide internal drive aisle would connect to the access and provide connection to the proposed residential and retail uses. The proposed circulation system would be designed consistent with applicable City of Morgan Hill design standards and would provide adequate width and turn radii at and along all drive/parking aisles to allow for two-way circulation, including circulation of larger vehicles such as emergency trucks, garbage trucks, and delivery trucks. While the project would include several dead-end drive aisles, emergency vehicles would have sufficient maneuvering space to turn around before exiting the site without encountering obstructions. Given compliance with required roadway design standards, adequate emergency vehicle access would be provided at the project site.

Based on the above, the proposed project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment), and would not result in inadequate emergency access. Therefore, a ***less-than-significant*** impact would occur.

XVIII. TRIBAL CULTURAL RESOURCES.

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is:

	Potentially Significant Impact	Less-Than- Significant with Mitigation Incorporated	Less-Than- Significant Impact	No Impact
a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k).	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>
b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>

Discussion

- a,b. As discussed in Section V, Cultural Resources, of this IS/MND, the project site does not contain any existing permanent structures or any other known resources listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), and does not contain known resources that could be considered historic pursuant to the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. Furthermore, based on a search of the NAHC Sacred Lands File, the project site does not contain known tribal cultural resources.³⁷ The records search of the CHRIS database for cultural resource site records and survey reports within the project area indicated that a moderate potential exists for unrecorded tribal cultural resources to occur within the project site.³⁸ However, ethnographic literature does not reference any Native American resources in or adjacent to the project area.

Based on the above, the proposed project is not expected to adversely impact tribal cultural resources. In addition, the project applicant would be required to comply with the City's standard conditions of approval related to cultural resource discovery. Therefore, a **less-than-significant** impact to tribal cultural resources would occur.

³⁷ Native American Heritage Commission. *Monterey Gateway Project, Santa Clara County*. November 5, 2019.

³⁸ California Historical Resources Information System. *Record search results for the proposed Monterey Gateway Project located at 18110 Monterey Road, Morgan Hill, Santa Clara County, California*. November 13, 2019.

XIX. UTILITIES AND SERVICE SYSTEMS.

Would the project:

	Potentially Significant Impact	Less-Than- Significant with Mitigation Incorporated	Less-Than- Significant Impact	No Impact
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	×	<input type="checkbox"/>
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	×	<input type="checkbox"/>
c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	×	<input type="checkbox"/>
d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	<input type="checkbox"/>	<input type="checkbox"/>	×	<input type="checkbox"/>
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	×	<input type="checkbox"/>

Discussion

- a-c. Brief discussions of the water, wastewater, stormwater drainage, electrical, natural gas, and telecommunications facilities that would serve the proposed project are included below.

Water

The City of Morgan Hill provides potable water service to its residential, commercial, industrial, and institutional customers within the City limits. The City's water system facilities include 14 groundwater wells, 10 potable water storage tanks, 10 booster stations, and over 160 miles of pressured pipes ranging from two to 14 inches in diameter. The City's water distribution system meets the needs of existing customers. The City has planned and constructed water projects in conjunction with new street construction in anticipation of future growth and water needs.

According to the City's Urban Water Management Plan, the City's projected water supply far exceeds the water demand for normal, single-dry, and multiple-dry years until at least 2040.³⁹ For example, during a normal year in 2020, the anticipated supply exceeds the anticipated demand by 55,351 acre-feet per year. Given that the proposed project is consistent with the site's current land use and zoning designations, the type and intensity of growth that would be induced by the proposed project was generally considered in the 2035 General Plan and associated water use has been analyzed in the General Plan EIR. Therefore, the proposed project would not require or result in the construction of new water treatment facilities or expansion of existing facilities, and sufficient water supplies would be available to serve the project from existing entitlements and resources.

³⁹ City of Morgan Hill. 2015 Urban Water Management Plan [pg. 7-4 to 7-7]. 2016.

Wastewater

The City of Morgan Hill sewer collection system consists of approximately 160 miles of gravity sewers, over 3,000 manholes, nearly 3 miles of force mains, and 14 lift stations. The sewer lines range in size from four inches to 30 inches in diameter and the piping system includes 26 siphons. The City's collection system moves the City's wastewater south to the South County Regional Wastewater Authority (SCRWA) Wastewater Treatment Facility (WWTF) located in southern Gilroy. SCRWA is a joint powers authority formed by the cities of Morgan Hill and Gilroy to collectively treat the wastewater of both cities.⁴⁰ The City of Morgan Hill has an allocation of 3.56 million gallons per day (MGD) from the WWTF. The average dry weather flow from the City of Morgan Hill was approximately 2.7 MGD in 2015.⁴¹

The proposed project would connect to existing sewer lines located within the site vicinity. Based on the current and projected sewage flows associated with the WWTF, the incremental increase in wastewater generation associated with the development of the proposed residences and retail space would not require the construction of new or expansion of existing wastewater treatment facilities, as adequate capacity is already sufficient to serve the proposed project. Furthermore, given that the project is consistent with the site's current General Plan land use and zoning designations, the type and intensity of growth that would be induced by the proposed project has been generally considered in the 2035 General Plan and associated wastewater generation has been analyzed in the General Plan EIR. The General Plan EIR determined that impacts related to wastewater treatment capacity would be less than significant.

Stormwater

Issues related to stormwater infrastructure are discussed in Section X, Hydrology and Water Quality, of this IS/MND. As noted therein, the proposed project would not significantly increase stormwater flows into the City's existing system. The final drainage system design for the project will be subject to review and approval by the City of Morgan Hill City Engineer to confirm that the proposed drainage system for the project is consistent with the City's Storm Drainage Master Plan and standard stormwater-related conditions of approval. Therefore, the proposed project would not require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Electricity, Natural Gas, and Telecommunications

Electricity would be provided by PG&E by way of existing electrical infrastructure in the project vicinity. Internet and telephone services would be provided by Frontier Communications, AT&T, Charter Communications, or a similar service provider operating within the City. The project would not require major upgrades to, or extension of, existing infrastructure. Thus, impacts to electricity and telecommunications infrastructure would be less than significant. The City prohibits the use of natural gas for new construction.

Conclusion

Based on the above, the type and intensity of growth that would be induced by the proposed project was generally considered in the 2035 General Plan and associated

⁴⁰ City of Morgan Hill. *City Council Staff Report 2163, Accept Report Regarding Wastewater System Needs and Rate Study Schedule*. February 6, 2019.

⁴¹ City of Morgan Hill. *2035 General Plan Draft EIR*. January 2016.

wastewater generation and water use has been analyzed in the General Plan EIR. Thus, the increase in water demand and wastewater generation associated with the proposed project would not be considered substantial. In addition, the project is located within a developed urban area and would not require major expansion or extension of existing water, wastewater, electrical, or telecommunications facilities in the project area.

Therefore, the proposed project would not require or result in the relocation or construction of new or expanded water, wastewater treatment, stormwater, electric power, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects. Sufficient water supplies would be available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years. Furthermore, adequate wastewater capacity would be available to serve the project's projected demand in addition to the SCRWA's existing commitments. Thus, a **less-than-significant** impact would occur.

- d,e. Recology South Valley provides solid waste and recycling services to the businesses and residents of the cities of Morgan Hill and Gilroy. Recology South Valley has contracted with the Salinas Valley Solid Waste Authority to dispose of municipal solid waste at Johnson Canyon Sanitary Landfill. Per the Landfill's proposed 2018 Solid Waste Facility (SWF) Permit, the Landfill has a maximum permitted tonnage limit of 1,574 tons per day, a design capacity of 13,834,328 cubic yards, and an estimated closure date of 2055.⁴² For fiscal year 2016/2017, 198,388 tons of waste were disposed of at the Landfill.⁴³ The proposed project would not produce enough solid waste for the landfill to exceed capacity. Therefore, sufficient permitted capacity exists at the Johnson Canyon Sanitary Landfill to accommodate the proposed project's incremental increase in solid waste disposal needs.

The proposed residences and retail uses would involve the generation of typical solid waste types and would not require specialized solid waste disposal needs. Furthermore, per CBC Section 4.408, the proposed project would be required to submit a Waste Management Plan to the City detailing on-site sorting of construction debris. Implementation of the Waste Management Plan would ensure that the proposed project meets established diversion requirements for reused or recycled construction waste. As such, the proposed project would comply with applicable federal, State, and local statutes and regulations related to solid waste. Therefore, the proposed project would have a **less-than-significant** impact related to solid waste.

⁴² California Department of Resources Recycling and Recovery (CalRecycle). *Facility/Site Summary Details: Johnson Canyon Sanitary Landfill (27-AA-0005)*. Available at: <https://www2.calrecycle.ca.gov/swfacilities/Directory/27-AA-0005>. Accessed December 2019.

⁴³ Salinas Valley Solid Waste Authority. *2016-17 Annual Report*. 2018.

XX. WILDFIRE.

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

	Potentially Significant Impact	Less-Than- Significant with Mitigation Incorporated	Less-Than- Significant Impact	No Impact
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	×	<input type="checkbox"/>
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	<input type="checkbox"/>	<input type="checkbox"/>	×	<input type="checkbox"/>
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	<input type="checkbox"/>	<input type="checkbox"/>	×	<input type="checkbox"/>
d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	<input type="checkbox"/>	<input type="checkbox"/>	×	<input type="checkbox"/>

Discussion

- a-d. As discussed in Section IX, Hazards and Hazardous Materials, of this IS/MND, the City's Wildland Urban Interface map indicates that the project site is not located in a High or Very High FHSZ.⁴⁴ While the residential area further to the west of the site past Del Monte Avenue is located within a Very High FHSZ, the area was classified as such in 2008, prior to buildout of the area with residential uses. The project would be required to comply with all applicable requirements of the California Fire Code, as adopted by Chapter 15.44 of the City's Municipal Code, including installation of fire sprinkler systems.

As noted in Section IX, implementation of the proposed project would not result in any substantial modifications to the City's existing roadway system and would not interfere with potential evacuation or response routes used by emergency response teams. The project would not conflict with the City's Emergency Operations Plan.⁴⁵ In addition, the project is not located on a substantial slope, and the project area does not include any existing features that would substantially increase fire risk for future residents, workers, or visitors. Given that the project site is located within a developed urban area and is situated adjacent to existing roads, water lines, and other utilities, the project would not result in substantial fire risks related to installation or maintenance of such infrastructure. Lastly, as discussed in Section VII, Geology and Soils, and Section X, Hydrology and Water Quality, of this IS/MND, development of the proposed project would not expose people or structures to significant risks related to flooding or landslides.

Based on the above, the proposed project would not expose people or structures to the risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands, and **no impact** would occur.

⁴⁴ City of Morgan Hill. *City of Morgan Hill Wildland Urban Interface Map*. March 2009.

⁴⁵ City of Morgan Hill. *Emergency Operations Plan*. January 11, 2018.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE.

	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	✗	<input type="checkbox"/>	<input type="checkbox"/>
b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	✗	<input type="checkbox"/>	<input type="checkbox"/>
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	✗	<input type="checkbox"/>

Discussion

- a. As discussed in Section IV, Biological Resources, of this IS/MND, the proposed project would be required to implement mitigation measures to minimize potential impacts to burrowing owl and nesting migratory birds and raptors protected by the MBTA. In addition, the site does not contain known historical or cultural resources. Although unlikely, the possibility exists that subsurface excavation of the site during grading and other construction activities could unearth deposits of cultural significance. However, this IS/MND explains how the City's Municipal Code requires standard measures for development projects that would ensure any impacts to such resources would be less than significant. Therefore, the proposed project's impact related to degradation of the quality of the environment, substantial reduction of habitat or plant and wildlife species, and elimination of important examples of the major periods of California history or prehistory would be ***less than significant with mitigation incorporated***.
- b. As discussed in Section XI, Land Use and Planning, of this IS/MND, the proposed project would be consistent with the site's current MU-F General Plan land use and zoning designations. As such, the type and intensity of growth that would be induced by the proposed project were generally anticipated in the 2035 General Plan and associated cumulative environmental effects were analyzed in the General Plan EIR. Furthermore, as demonstrated in this IS/MND, all potential environmental impacts that could occur as a result of project implementation would be reduced to a less-than-significant level with implementation of project-specific mitigation measures and compliance with applicable General Plan policies. When viewed in conjunction with other closely related past, present, or reasonably foreseeable future projects, development of the proposed project would not contribute to cumulative impacts in the City of Morgan Hill, and the project's contribution to the cumulative impact would be ***less than significant with mitigation incorporated***.
- c. The proposed project site would be developed in a generally urbanized and built-up area of the City of Morgan Hill. Development of the proposed project would not be expected to result in substantial adverse impacts to human beings, either directly or indirectly. The

potential for substantial environmental effects on human beings is addressed within this IS/MND and all impacts have been identified as less-than-significant or less than significant with the incorporation of mitigation measures. As such, a ***less-than-significant*** impact would result.

Appendix A

Air Quality and Greenhouse Gas Modeling Results

Monterey Gateway - Bay Area AQMD Air District, Annual

Monterey Gateway
Bay Area AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	101.00	Dwelling Unit	5.67	181,800.00	289
Regional Shopping Center	3.50	1000sqft	0.08	3,500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	64
Climate Zone	4			Operational Year	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	257.69	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Monterey Gateway - Bay Area AQMD Air District, Annual

Project Characteristics - updating co2 intensity factor

Land Use - update acreage

Construction Phase - updating days

Grading - updating acreage

Demolition -

Vehicle Trips - updating trip rates per traffic impact analysis

Mobile Land Use Mitigation -

Water Mitigation -

Energy Mitigation -

Area Mitigation -

Energy Use - title 24 adjustments

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	520.00
tblConstructionPhase	NumDays	230.00	520.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	20.00	50.00
tblConstructionPhase	NumDays	10.00	20.00
tblConstructionPhase	PhaseEndDate	9/21/2021	11/29/2022
tblConstructionPhase	PhaseEndDate	7/27/2021	11/15/2022
tblConstructionPhase	PhaseEndDate	7/28/2020	7/14/2020
tblConstructionPhase	PhaseEndDate	9/8/2020	10/20/2020
tblConstructionPhase	PhaseEndDate	8/24/2021	11/17/2020
tblConstructionPhase	PhaseStartDate	8/25/2021	12/2/2020
tblConstructionPhase	PhaseStartDate	9/9/2020	11/18/2020
tblConstructionPhase	PhaseStartDate	7/28/2021	10/21/2020
tblConstructionPhase	PhaseStartDate	7/29/2020	7/15/2020

Monterey Gateway - Bay Area AQMD Air District, Annual

tblEnergyUse	T24E	325.76	153.11
tblEnergyUse	T24E	2.76	1.93
tblEnergyUse	T24NG	25,910.09	12,177.74
tblEnergyUse	T24NG	2.37	1.66
tblGrading	AcresOfGrading	25.00	5.67
tblGrading	MaterialExported	0.00	20.00
tblGrading	MaterialImported	0.00	14,960.00
tblLandUse	LotAcreage	32.79	5.67
tblProjectCharacteristics	CO2IntensityFactor	641.35	257.69
tblTripsAndVMT	HaulingTripNumber	3.00	2.00
tblVehicleTrips	ST_TR	9.91	9.24
tblVehicleTrips	ST_TR	49.97	31.43
tblVehicleTrips	SU_TR	8.62	9.24
tblVehicleTrips	SU_TR	25.24	31.43
tblVehicleTrips	WD_TR	9.52	9.24
tblVehicleTrips	WD_TR	42.70	31.43

2.0 Emissions Summary

Monterey Gateway - Bay Area AQMD Air District, Annual

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					
2020	0.2364	2.0141	1.2573	2.9100e-003	0.3641	0.0898	0.4538	0.1903	0.0832	0.2735	0.0000	262.0345	262.0345	0.0566	0.0000	263.4495
2021	0.9503	2.6362	2.5665	4.7100e-003	0.0548	0.1380	0.1928	0.0148	0.1305	0.1453	0.0000	411.1914	411.1914	0.0779	0.0000	413.1391
2022	0.8276	2.0723	2.2064	4.1000e-003	0.0479	0.1020	0.1499	0.0129	0.0965	0.1095	0.0000	357.6875	357.6875	0.0672	0.0000	359.3668
Maximum	0.9503	2.6362	2.5665	4.7100e-003	0.3641	0.1380	0.4538	0.1903	0.1305	0.2735	0.0000	411.1914	411.1914	0.0779	0.0000	413.1391

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					
2020	0.2364	2.0141	1.2573	2.9100e-003	0.3641	0.0898	0.4538	0.1903	0.0832	0.2735	0.0000	262.0343	262.0343	0.0566	0.0000	263.4493
2021	0.9503	2.6362	2.5665	4.7100e-003	0.0548	0.1380	0.1928	0.0148	0.1305	0.1453	0.0000	411.1910	411.1910	0.0779	0.0000	413.1387
2022	0.8276	2.0723	2.2064	4.1000e-003	0.0479	0.1020	0.1499	0.0129	0.0965	0.1095	0.0000	357.6871	357.6871	0.0672	0.0000	359.3665
Maximum	0.9503	2.6362	2.5665	4.7100e-003	0.3641	0.1380	0.4538	0.1903	0.1305	0.2735	0.0000	411.1910	411.1910	0.0779	0.0000	413.1387

Monterey Gateway - Bay Area AQMD Air District, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	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)
1	7-1-2020	9-30-2020	1.3628	1.3628
2	10-1-2020	12-31-2020	0.8760	0.8760
3	1-1-2021	3-31-2021	0.8841	0.8841
4	4-1-2021	6-30-2021	0.8926	0.8926
5	7-1-2021	9-30-2021	0.9025	0.9025
6	10-1-2021	12-31-2021	0.9038	0.9038
7	1-1-2022	3-31-2022	0.8125	0.8125
8	4-1-2022	6-30-2022	0.8204	0.8204
9	7-1-2022	9-30-2022	0.8294	0.8294
		Highest	1.3628	1.3628

Monterey Gateway - Bay Area AQMD Air District, Annual

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	1.4714	0.0217	1.6158	1.8200e-003		0.1290	0.1290		0.1290	0.1290	12.8382	4.3773	17.2155	0.0254	7.3000e-004	18.0700
Energy	8.3800e-003	0.0716	0.0306	4.6000e-004		5.7900e-003	5.7900e-003		5.7900e-003	5.7900e-003	0.0000	180.4584	180.4584	0.0126	3.7900e-003	181.9022
Mobile	0.2351	1.0375	2.6446	9.7900e-003	0.8737	8.0300e-003	0.8818	0.2345	7.4900e-003	0.2420	0.0000	899.2382	899.2382	0.0314	0.0000	900.0229
Waste						0.0000	0.0000		0.0000	0.0000	25.3861	0.0000	25.3861	1.5003	0.0000	62.8929
Water						0.0000	0.0000		0.0000	0.0000	2.1700	6.0882	8.2582	0.2236	5.4000e-003	15.4577
Total	1.7149	1.1309	4.2910	0.0121	0.8737	0.1428	1.0165	0.2345	0.1423	0.3768	40.3942	1,090.1621	1,130.5563	1.7932	9.9200e-003	1,178.3457

Monterey Gateway - Bay Area AQMD Air District, Annual

2.2 Overall Operational**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	0.8761	8.6500e-003	0.7501	4.0000e-005		4.1500e-003	4.1500e-003		4.1500e-003	4.1500e-003	0.0000	1.2251	1.2251	1.1800e-003	0.0000	1.2545
Energy	8.3800e-003	0.0716	0.0306	4.6000e-004		5.7900e-003	5.7900e-003		5.7900e-003	5.7900e-003	0.0000	180.4348	180.4348	0.0126	3.7900e-003	181.8784
Mobile	0.2255	0.9787	2.4176	8.7200e-003	0.7706	7.2000e-003	0.7778	0.2068	6.7200e-003	0.2136	0.0000	801.3036	801.3036	0.0287	0.0000	802.0217
Waste						0.0000	0.0000		0.0000	0.0000	25.3861	0.0000	25.3861	1.5003	0.0000	62.8929
Water						0.0000	0.0000		0.0000	0.0000	1.7360	5.1155	6.8515	0.1789	4.3300e-003	12.6135
Total	1.1099	1.0590	3.1983	9.2200e-003	0.7706	0.0171	0.7878	0.2068	0.0167	0.2235	27.1220	988.0790	1,015.2010	1.7216	8.1200e-003	1,060.6609

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	35.28	6.35	25.46	23.61	11.80	88.00	22.50	11.80	88.29	40.68	32.86	9.36	10.20	3.99	18.15	9.99

3.0 Construction Detail**Construction Phase**

Monterey Gateway - Bay Area AQMD Air District, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/1/2020	7/14/2020	5	10	
2	Site Preparation	Site Preparation	7/15/2020	8/11/2020	5	20	
3	Grading	Grading	8/12/2020	10/20/2020	5	50	
4	Building Construction	Building Construction	11/18/2020	11/15/2022	5	520	
5	Paving	Paving	10/21/2020	11/17/2020	5	20	
6	Architectural Coating	Architectural Coating	12/2/2020	11/29/2022	5	520	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 5.665

Acres of Paving: 0

Residential Indoor: 368,145; Residential Outdoor: 122,715; Non-Residential Indoor: 5,250; Non-Residential Outdoor: 1,750; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Monterey Gateway - Bay Area AQMD Air District, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Excavators	3	8.00	158	0.38
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Excavators	1	8.00	158	0.38
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
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Monterey Gateway - Bay Area AQMD Air District, Annual

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	5.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	2.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	1,870.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	37.00	11.00	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	1	7.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2020

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					5.3000e-004	0.0000	5.3000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0166	0.1660	0.1088	1.9000e-004		8.2900e-003	8.2900e-003		7.7100e-003	7.7100e-003	0.0000	16.9993	16.9993	4.8000e-003	0.0000	17.1193
Total	0.0166	0.1660	0.1088	1.9000e-004	5.3000e-004	8.2900e-003	8.8200e-003	8.0000e-005	7.7100e-003	7.7900e-003	0.0000	16.9993	16.9993	4.8000e-003	0.0000	17.1193

Monterey Gateway - Bay Area AQMD Air District, Annual

3.2 Demolition - 2020**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	2.0000e-005	7.3000e-004	1.5000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1916	0.1916	1.0000e-005	0.0000	0.1918
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	2.5000e-004	1.8000e-004	1.8400e-003	1.0000e-005	5.9000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5192	0.5192	1.0000e-005	0.0000	0.5195
Total	2.7000e-004	9.1000e-004	1.9900e-003	1.0000e-005	6.3000e-004	0.0000	6.4000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.7108	0.7108	2.0000e-005	0.0000	0.7114

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					5.3000e-004	0.0000	5.3000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0166	0.1660	0.1088	1.9000e-004		8.2900e-003	8.2900e-003		7.7100e-003	7.7100e-003	0.0000	16.9993	16.9993	4.8000e-003	0.0000	17.1193
Total	0.0166	0.1660	0.1088	1.9000e-004	5.3000e-004	8.2900e-003	8.8200e-003	8.0000e-005	7.7100e-003	7.7900e-003	0.0000	16.9993	16.9993	4.8000e-003	0.0000	17.1193

Monterey Gateway - Bay Area AQMD Air District, Annual

3.2 Demolition - 2020**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	2.0000e-005	7.3000e-004	1.5000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1916	0.1916	1.0000e-005	0.0000	0.1918
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	2.5000e-004	1.8000e-004	1.8400e-003	1.0000e-005	5.9000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5192	0.5192	1.0000e-005	0.0000	0.5195
Total	2.7000e-004	9.1000e-004	1.9900e-003	1.0000e-005	6.3000e-004	0.0000	6.4000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.7108	0.7108	2.0000e-005	0.0000	0.7114

3.3 Site Preparation - 2020**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					0.1807	0.0000	0.1807	0.0993	0.0000	0.0993	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0408	0.4242	0.2151	3.8000e-004		0.0220	0.0220		0.0202	0.0202	0.0000	33.4307	33.4307	0.0108	0.0000	33.7010
Total	0.0408	0.4242	0.2151	3.8000e-004	0.1807	0.0220	0.2026	0.0993	0.0202	0.1195	0.0000	33.4307	33.4307	0.0108	0.0000	33.7010

Monterey Gateway - Bay Area AQMD Air District, Annual

3.3 Site Preparation - 2020**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	1.0000e-005	2.9000e-004	6.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0766	0.0766	0.0000	0.0000	0.0767
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	6.0000e-004	4.3000e-004	4.4200e-003	1.0000e-005	1.4200e-003	1.0000e-005	1.4300e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.2461	1.2461	3.0000e-005	0.0000	1.2469
Total	6.1000e-004	7.2000e-004	4.4800e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	4.0000e-004	0.0000	1.3228	1.3228	3.0000e-005	0.0000	1.3236

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					0.1807	0.0000	0.1807	0.0993	0.0000	0.0993	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0408	0.4242	0.2151	3.8000e-004		0.0220	0.0220		0.0202	0.0202	0.0000	33.4306	33.4306	0.0108	0.0000	33.7009
Total	0.0408	0.4242	0.2151	3.8000e-004	0.1807	0.0220	0.2026	0.0993	0.0202	0.1195	0.0000	33.4306	33.4306	0.0108	0.0000	33.7009

Monterey Gateway - Bay Area AQMD Air District, Annual

3.3 Site Preparation - 2020**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	1.0000e-005	2.9000e-004	6.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0766	0.0766	0.0000	0.0000	0.0767
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	6.0000e-004	4.3000e-004	4.4200e-003	1.0000e-005	1.4200e-003	1.0000e-005	1.4300e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.2461	1.2461	3.0000e-005	0.0000	1.2469
Total	6.1000e-004	7.2000e-004	4.4800e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	4.0000e-004	0.0000	1.3228	1.3228	3.0000e-005	0.0000	1.3236

3.4 Grading - 2020**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					0.1544	0.0000	0.1544	0.0832	0.0000	0.0832	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0607	0.6597	0.4013	7.4000e-004		0.0318	0.0318		0.0293	0.0293	0.0000	65.1469	65.1469	0.0211	0.0000	65.6736
Total	0.0607	0.6597	0.4013	7.4000e-004	0.1544	0.0318	0.1862	0.0832	0.0293	0.1125	0.0000	65.1469	65.1469	0.0211	0.0000	65.6736

Monterey Gateway - Bay Area AQMD Air District, Annual

3.4 Grading - 2020**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	7.8000e-003	0.2734	0.0549	7.4000e-004	0.0158	8.8000e-004	0.0167	4.3400e-003	8.4000e-004	5.1900e-003	0.0000	71.6559	71.6559	3.6900e-003	0.0000	71.7481
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	1.2400e-003	8.9000e-004	9.2100e-003	3.0000e-005	2.9600e-003	2.0000e-005	2.9800e-003	7.9000e-004	2.0000e-005	8.1000e-004	0.0000	2.5961	2.5961	6.0000e-005	0.0000	2.5976
Total	9.0400e-003	0.2743	0.0642	7.7000e-004	0.0188	9.0000e-004	0.0197	5.1300e-003	8.6000e-004	6.0000e-003	0.0000	74.2519	74.2519	3.7500e-003	0.0000	74.3457

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					0.1544	0.0000	0.1544	0.0832	0.0000	0.0832	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0607	0.6597	0.4013	7.4000e-004		0.0318	0.0318		0.0293	0.0293	0.0000	65.1468	65.1468	0.0211	0.0000	65.6735
Total	0.0607	0.6597	0.4013	7.4000e-004	0.1544	0.0318	0.1862	0.0832	0.0293	0.1125	0.0000	65.1468	65.1468	0.0211	0.0000	65.6735

Monterey Gateway - Bay Area AQMD Air District, Annual

3.4 Grading - 2020**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	7.8000e-003	0.2734	0.0549	7.4000e-004	0.0158	8.8000e-004	0.0167	4.3400e-003	8.4000e-004	5.1900e-003	0.0000	71.6559	71.6559	3.6900e-003	0.0000	71.7481
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	1.2400e-003	8.9000e-004	9.2100e-003	3.0000e-005	2.9600e-003	2.0000e-005	2.9800e-003	7.9000e-004	2.0000e-005	8.1000e-004	0.0000	2.5961	2.5961	6.0000e-005	0.0000	2.5976
Total	9.0400e-003	0.2743	0.0642	7.7000e-004	0.0188	9.0000e-004	0.0197	5.1300e-003	8.6000e-004	6.0000e-003	0.0000	74.2519	74.2519	3.7500e-003	0.0000	74.3457

3.5 Building Construction - 2020**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	0.0339	0.3070	0.2696	4.3000e-004		0.0179	0.0179		0.0168	0.0168	0.0000	37.0576	37.0576	9.0400e-003	0.0000	37.2836
Total	0.0339	0.3070	0.2696	4.3000e-004		0.0179	0.0179		0.0168	0.0168	0.0000	37.0576	37.0576	9.0400e-003	0.0000	37.2836

Monterey Gateway - Bay Area AQMD Air District, Annual

3.5 Building Construction - 2020**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	6.8000e-004	0.0203	5.1100e-003	5.0000e-005	1.1500e-003	1.0000e-004	1.2500e-003	3.3000e-004	9.0000e-005	4.3000e-004	0.0000	4.6080	4.6080	2.4000e-004	0.0000	4.6140
Worker	1.9600e-003	1.4000e-003	0.0145	5.0000e-005	4.6800e-003	3.0000e-005	4.7100e-003	1.2400e-003	3.0000e-005	1.2700e-003	0.0000	4.0983	4.0983	1.0000e-004	0.0000	4.1008
Total	2.6400e-003	0.0217	0.0197	1.0000e-004	5.8300e-003	1.3000e-004	5.9600e-003	1.5700e-003	1.2000e-004	1.7000e-003	0.0000	8.7063	8.7063	3.4000e-004	0.0000	8.7147

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	0.0339	0.3070	0.2696	4.3000e-004		0.0179	0.0179		0.0168	0.0168	0.0000	37.0576	37.0576	9.0400e-003	0.0000	37.2836
Total	0.0339	0.3070	0.2696	4.3000e-004		0.0179	0.0179		0.0168	0.0168	0.0000	37.0576	37.0576	9.0400e-003	0.0000	37.2836

Monterey Gateway - Bay Area AQMD Air District, Annual

3.5 Building Construction - 2020**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	6.8000e-004	0.0203	5.1100e-003	5.0000e-005	1.1500e-003	1.0000e-004	1.2500e-003	3.3000e-004	9.0000e-005	4.3000e-004	0.0000	4.6080	4.6080	2.4000e-004	0.0000	4.6140
Worker	1.9600e-003	1.4000e-003	0.0145	5.0000e-005	4.6800e-003	3.0000e-005	4.7100e-003	1.2400e-003	3.0000e-005	1.2700e-003	0.0000	4.0983	4.0983	1.0000e-004	0.0000	4.1008
Total	2.6400e-003	0.0217	0.0197	1.0000e-004	5.8300e-003	1.3000e-004	5.9600e-003	1.5700e-003	1.2000e-004	1.7000e-003	0.0000	8.7063	8.7063	3.4000e-004	0.0000	8.7147

3.5 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	0.2481	2.2749	2.1631	3.5100e-003		0.1251	0.1251		0.1176	0.1176	0.0000	302.2867	302.2867	0.0729	0.0000	304.1099
Total	0.2481	2.2749	2.1631	3.5100e-003		0.1251	0.1251		0.1176	0.1176	0.0000	302.2867	302.2867	0.0729	0.0000	304.1099

Monterey Gateway - Bay Area AQMD Air District, Annual

3.5 Building Construction - 2021**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	4.5600e-003	0.1499	0.0374	3.9000e-004	9.4100e-003	3.3000e-004	9.7400e-003	2.7200e-003	3.1000e-004	3.0300e-003	0.0000	37.2288	37.2288	1.8300e-003	0.0000	37.2746
Worker	0.0148	0.0102	0.1083	3.6000e-004	0.0382	2.5000e-004	0.0384	0.0102	2.3000e-004	0.0104	0.0000	32.2539	32.2539	7.2000e-004	0.0000	32.2720
Total	0.0194	0.1602	0.1457	7.5000e-004	0.0476	5.8000e-004	0.0481	0.0129	5.4000e-004	0.0134	0.0000	69.4827	69.4827	2.5500e-003	0.0000	69.5466

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	0.2481	2.2749	2.1631	3.5100e-003		0.1251	0.1251		0.1176	0.1176	0.0000	302.2863	302.2863	0.0729	0.0000	304.1095
Total	0.2481	2.2749	2.1631	3.5100e-003		0.1251	0.1251		0.1176	0.1176	0.0000	302.2863	302.2863	0.0729	0.0000	304.1095

Monterey Gateway - Bay Area AQMD Air District, Annual

3.5 Building Construction - 2021**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	4.5600e-003	0.1499	0.0374	3.9000e-004	9.4100e-003	3.3000e-004	9.7400e-003	2.7200e-003	3.1000e-004	3.0300e-003	0.0000	37.2288	37.2288	1.8300e-003	0.0000	37.2746
Worker	0.0148	0.0102	0.1083	3.6000e-004	0.0382	2.5000e-004	0.0384	0.0102	2.3000e-004	0.0104	0.0000	32.2539	32.2539	7.2000e-004	0.0000	32.2720
Total	0.0194	0.1602	0.1457	7.5000e-004	0.0476	5.8000e-004	0.0481	0.0129	5.4000e-004	0.0134	0.0000	69.4827	69.4827	2.5500e-003	0.0000	69.5466

3.5 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	0.1937	1.7724	1.8573	3.0600e-003		0.0918	0.0918		0.0864	0.0864	0.0000	263.0082	263.0082	0.0630	0.0000	264.5834
Total	0.1937	1.7724	1.8573	3.0600e-003		0.0918	0.0918		0.0864	0.0864	0.0000	263.0082	263.0082	0.0630	0.0000	264.5834

Monterey Gateway - Bay Area AQMD Air District, Annual

3.5 Building Construction - 2022**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	3.7000e-003	0.1235	0.0306	3.3000e-004	8.1900e-003	2.5000e-004	8.4300e-003	2.3700e-003	2.4000e-004	2.6000e-003	0.0000	32.0616	32.0616	1.5200e-003	0.0000	32.0996
Worker	0.0120	7.9700e-003	0.0866	3.0000e-004	0.0332	2.1000e-004	0.0334	8.8300e-003	2.0000e-004	9.0200e-003	0.0000	27.0238	27.0238	5.6000e-004	0.0000	27.0379
Total	0.0157	0.1315	0.1172	6.3000e-004	0.0414	4.6000e-004	0.0418	0.0112	4.4000e-004	0.0116	0.0000	59.0854	59.0854	2.0800e-003	0.0000	59.1375

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	0.1937	1.7724	1.8572	3.0600e-003		0.0918	0.0918		0.0864	0.0864	0.0000	263.0078	263.0078	0.0630	0.0000	264.5831
Total	0.1937	1.7724	1.8572	3.0600e-003		0.0918	0.0918		0.0864	0.0864	0.0000	263.0078	263.0078	0.0630	0.0000	264.5831

Monterey Gateway - Bay Area AQMD Air District, Annual

3.5 Building Construction - 2022**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	3.7000e-003	0.1235	0.0306	3.3000e-004	8.1900e-003	2.5000e-004	8.4300e-003	2.3700e-003	2.4000e-004	2.6000e-003	0.0000	32.0616	32.0616	1.5200e-003	0.0000	32.0996
Worker	0.0120	7.9700e-003	0.0866	3.0000e-004	0.0332	2.1000e-004	0.0334	8.8300e-003	2.0000e-004	9.0200e-003	0.0000	27.0238	27.0238	5.6000e-004	0.0000	27.0379
Total	0.0157	0.1315	0.1172	6.3000e-004	0.0414	4.6000e-004	0.0418	0.0112	4.4000e-004	0.0116	0.0000	59.0854	59.0854	2.0800e-003	0.0000	59.1375

3.6 Paving - 2020**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	0.0136	0.1407	0.1465	2.3000e-004		7.5300e-003	7.5300e-003		6.9300e-003	6.9300e-003	0.0000	20.0282	20.0282	6.4800e-003	0.0000	20.1902
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0136	0.1407	0.1465	2.3000e-004		7.5300e-003	7.5300e-003		6.9300e-003	6.9300e-003	0.0000	20.0282	20.0282	6.4800e-003	0.0000	20.1902

Monterey Gateway - Bay Area AQMD Air District, Annual

3.6 Paving - 2020**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	5.0000e-004	3.6000e-004	3.6800e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.1900e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0384	1.0384	3.0000e-005	0.0000	1.0391
Total	5.0000e-004	3.6000e-004	3.6800e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.1900e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0384	1.0384	3.0000e-005	0.0000	1.0391

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	0.0136	0.1407	0.1465	2.3000e-004		7.5300e-003	7.5300e-003		6.9300e-003	6.9300e-003	0.0000	20.0282	20.0282	6.4800e-003	0.0000	20.1901
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0136	0.1407	0.1465	2.3000e-004		7.5300e-003	7.5300e-003		6.9300e-003	6.9300e-003	0.0000	20.0282	20.0282	6.4800e-003	0.0000	20.1901

Monterey Gateway - Bay Area AQMD Air District, Annual

3.6 Paving - 2020**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	5.0000e-004	3.6000e-004	3.6800e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.1900e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0384	1.0384	3.0000e-005	0.0000	1.0391
Total	5.0000e-004	3.6000e-004	3.6800e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.1900e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0384	1.0384	3.0000e-005	0.0000	1.0391

3.7 Architectural Coating - 2020**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	0.0549					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6600e-003	0.0185	0.0202	3.0000e-005		1.2200e-003	1.2200e-003		1.2200e-003	1.2200e-003	0.0000	2.8086	2.8086	2.2000e-004	0.0000	2.8140
Total	0.0576	0.0185	0.0202	3.0000e-005		1.2200e-003	1.2200e-003		1.2200e-003	1.2200e-003	0.0000	2.8086	2.8086	2.2000e-004	0.0000	2.8140

Monterey Gateway - Bay Area AQMD Air District, Annual

3.7 Architectural Coating - 2020**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	2.6000e-004	1.8000e-004	1.8900e-003	1.0000e-005	6.1000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.7000e-004	0.0000	0.5331	0.5331	1.0000e-005	0.0000	0.5334
Total	2.6000e-004	1.8000e-004	1.8900e-003	1.0000e-005	6.1000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.7000e-004	0.0000	0.5331	0.5331	1.0000e-005	0.0000	0.5334

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	0.0549					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6600e-003	0.0185	0.0202	3.0000e-005		1.2200e-003	1.2200e-003		1.2200e-003	1.2200e-003	0.0000	2.8086	2.8086	2.2000e-004	0.0000	2.8140
Total	0.0576	0.0185	0.0202	3.0000e-005		1.2200e-003	1.2200e-003		1.2200e-003	1.2200e-003	0.0000	2.8086	2.8086	2.2000e-004	0.0000	2.8140

Monterey Gateway - Bay Area AQMD Air District, Annual

3.7 Architectural Coating - 2020**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	2.6000e-004	1.8000e-004	1.8900e-003	1.0000e-005	6.1000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.7000e-004	0.0000	0.5331	0.5331	1.0000e-005	0.0000	0.5334
Total	2.6000e-004	1.8000e-004	1.8900e-003	1.0000e-005	6.1000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.7000e-004	0.0000	0.5331	0.5331	1.0000e-005	0.0000	0.5334

3.7 Architectural Coating - 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					
Archit. Coating	0.6515					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0286	0.1993	0.2372	3.9000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	33.3200	33.3200	2.2900e-003	0.0000	33.3771
Total	0.6801	0.1993	0.2372	3.9000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	33.3200	33.3200	2.2900e-003	0.0000	33.3771

Monterey Gateway - Bay Area AQMD Air District, Annual

3.7 Architectural Coating - 2021**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-003	1.9300e-003	0.0205	7.0000e-005	7.2200e-003	5.0000e-005	7.2700e-003	1.9200e-003	4.0000e-005	1.9600e-003	0.0000	6.1021	6.1021	1.4000e-004	0.0000	6.1055
Total	2.8000e-003	1.9300e-003	0.0205	7.0000e-005	7.2200e-003	5.0000e-005	7.2700e-003	1.9200e-003	4.0000e-005	1.9600e-003	0.0000	6.1021	6.1021	1.4000e-004	0.0000	6.1055

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	0.6515					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0286	0.1993	0.2372	3.9000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	33.3199	33.3199	2.2900e-003	0.0000	33.3771
Total	0.6801	0.1993	0.2372	3.9000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	33.3199	33.3199	2.2900e-003	0.0000	33.3771

Monterey Gateway - Bay Area AQMD Air District, Annual

3.7 Architectural Coating - 2021**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-003	1.9300e-003	0.0205	7.0000e-005	7.2200e-003	5.0000e-005	7.2700e-003	1.9200e-003	4.0000e-005	1.9600e-003	0.0000	6.1021	6.1021	1.4000e-004	0.0000	6.1055
Total	2.8000e-003	1.9300e-003	0.0205	7.0000e-005	7.2200e-003	5.0000e-005	7.2700e-003	1.9200e-003	4.0000e-005	1.9600e-003	0.0000	6.1021	6.1021	1.4000e-004	0.0000	6.1055

3.7 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	0.5916					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0242	0.1669	0.2149	3.5000e-004		9.6800e-003	9.6800e-003		9.6800e-003	9.6800e-003	0.0000	30.2561	30.2561	1.9700e-003	0.0000	30.3053
Total	0.6158	0.1669	0.2149	3.5000e-004		9.6800e-003	9.6800e-003		9.6800e-003	9.6800e-003	0.0000	30.2561	30.2561	1.9700e-003	0.0000	30.3053

Monterey Gateway - Bay Area AQMD Air District, Annual

3.7 Architectural Coating - 2022**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	2.3700e-003	1.5700e-003	0.0171	6.0000e-005	6.5500e-003	4.0000e-005	6.6000e-003	1.7400e-003	4.0000e-005	1.7800e-003	0.0000	5.3378	5.3378	1.1000e-004	0.0000	5.3406
Total	2.3700e-003	1.5700e-003	0.0171	6.0000e-005	6.5500e-003	4.0000e-005	6.6000e-003	1.7400e-003	4.0000e-005	1.7800e-003	0.0000	5.3378	5.3378	1.1000e-004	0.0000	5.3406

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	0.5916					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0242	0.1669	0.2149	3.5000e-004		9.6800e-003	9.6800e-003		9.6800e-003	9.6800e-003	0.0000	30.2560	30.2560	1.9700e-003	0.0000	30.3053
Total	0.6158	0.1669	0.2149	3.5000e-004		9.6800e-003	9.6800e-003		9.6800e-003	9.6800e-003	0.0000	30.2560	30.2560	1.9700e-003	0.0000	30.3053

Monterey Gateway - Bay Area AQMD Air District, Annual

3.7 Architectural Coating - 2022**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	2.3700e-003	1.5700e-003	0.0171	6.0000e-005	6.5500e-003	4.0000e-005	6.6000e-003	1.7400e-003	4.0000e-005	1.7800e-003	0.0000	5.3378	5.3378	1.1000e-004	0.0000	5.3406
Total	2.3700e-003	1.5700e-003	0.0171	6.0000e-005	6.5500e-003	4.0000e-005	6.6000e-003	1.7400e-003	4.0000e-005	1.7800e-003	0.0000	5.3378	5.3378	1.1000e-004	0.0000	5.3406

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

Increase Transit Accessibility

Improve Pedestrian Network

Monterey Gateway - Bay Area AQMD Air District, Annual

	ROG	NOx	CO	SO2	Fugitive 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	0.2255	0.9787	2.4176	8.7200e-003	0.7706	7.2000e-003	0.7778	0.2068	6.7200e-003	0.2136	0.0000	801.3036	801.3036	0.0287	0.0000	802.0217
Unmitigated	0.2351	1.0375	2.6446	9.7900e-003	0.8737	8.0300e-003	0.8818	0.2345	7.4900e-003	0.2420	0.0000	899.2382	899.2382	0.0314	0.0000	900.0229

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	933.04	933.04	933.04	2,154,951	1,900,667
Regional Shopping Center	110.00	110.00	110.00	192,866	170,108
Total	1,043.04	1,043.04	1,043.04	2,347,818	2,070,775

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749
Regional Shopping Center	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749

Monterey Gateway - Bay Area AQMD Air District, Annual

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

Kilowatt Hours of Renewable Electricity Generated

	ROG	NOx	CO	SO2	Fugitive 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	97.4852	97.4852	0.0110	2.2700e-003	98.4359
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	97.5088	97.5088	0.0110	2.2700e-003	98.4597
NaturalGas Mitigated	8.3800e-003	0.0716	0.0306	4.6000e-004		5.7900e-003	5.7900e-003		5.7900e-003	5.7900e-003	0.0000	82.9496	82.9496	1.5900e-003	1.5200e-003	83.4425
NaturalGas Unmitigated	8.3800e-003	0.0716	0.0306	4.6000e-004		5.7900e-003	5.7900e-003		5.7900e-003	5.7900e-003	0.0000	82.9496	82.9496	1.5900e-003	1.5200e-003	83.4425

Monterey Gateway - Bay Area AQMD Air District, Annual

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					
Regional Shopping Center	5810	3.0000e-005	2.8000e-004	2.4000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.3100	0.3100	1.0000e-005	1.0000e-005	0.3119
Single Family Housing	1.54861e+006	8.3500e-003	0.0714	0.0304	4.6000e-004		5.7700e-003	5.7700e-003		5.7700e-003	5.7700e-003	0.0000	82.6396	82.6396	1.5800e-003	1.5200e-003	83.1306
Total		8.3800e-003	0.0716	0.0306	4.6000e-004		5.7900e-003	5.7900e-003		5.7900e-003	5.7900e-003	0.0000	82.9496	82.9496	1.5900e-003	1.5300e-003	83.4425

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					
Regional Shopping Center	5810	3.0000e-005	2.8000e-004	2.4000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.3100	0.3100	1.0000e-005	1.0000e-005	0.3119
Single Family Housing	1.54861e+006	8.3500e-003	0.0714	0.0304	4.6000e-004		5.7700e-003	5.7700e-003		5.7700e-003	5.7700e-003	0.0000	82.6396	82.6396	1.5800e-003	1.5200e-003	83.1306
Total		8.3800e-003	0.0716	0.0306	4.6000e-004		5.7900e-003	5.7900e-003		5.7900e-003	5.7900e-003	0.0000	82.9496	82.9496	1.5900e-003	1.5300e-003	83.4425

Monterey Gateway - Bay Area AQMD Air District, Annual

5.3 Energy by Land Use - Electricity**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Regional Shopping Center	34510	4.0337	4.5000e-004	9.0000e-005	4.0731
Single Family Housing	799710	93.4751	0.0105	2.1800e-003	94.3866
Total		97.5088	0.0110	2.2700e-003	98.4597

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Regional Shopping Center	34409	4.0219	4.5000e-004	9.0000e-005	4.0612
Single Family Housing	799609	93.4633	0.0105	2.1800e-003	94.3747
Total		97.4852	0.0110	2.2700e-003	98.4359

6.0 Area Detail**6.1 Mitigation Measures Area**

Monterey Gateway - Bay Area AQMD Air District, Annual

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive 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	0.8761	8.6500e-003	0.7501	4.0000e-005		4.1500e-003	4.1500e-003		4.1500e-003	4.1500e-003	0.0000	1.2251	1.2251	1.1800e-003	0.0000	1.2545
Unmitigated	1.4714	0.0217	1.6158	1.8200e-003		0.1290	0.1290		0.1290	0.1290	12.8382	4.3773	17.2155	0.0254	7.3000e-004	18.0700

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	0.1298					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7237					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.5953	0.0131	0.8656	1.7800e-003		0.1248	0.1248		0.1248	0.1248	12.8382	3.1522	15.9904	0.0243	7.3000e-004	16.8155
Landscaping	0.0226	8.6500e-003	0.7501	4.0000e-005		4.1500e-003	4.1500e-003		4.1500e-003	4.1500e-003	0.0000	1.2251	1.2251	1.1800e-003	0.0000	1.2545
Total	1.4714	0.0217	1.6158	1.8200e-003		0.1290	0.1290		0.1290	0.1290	12.8382	4.3773	17.2155	0.0254	7.3000e-004	18.0700

Monterey Gateway - Bay Area AQMD Air District, Annual

6.2 Area by SubCategory**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	0.1298					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7237					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	0.0226	8.6500e-003	0.7501	4.0000e-005		4.1500e-003	4.1500e-003		4.1500e-003	4.1500e-003	0.0000	1.2251	1.2251	1.1800e-003	0.0000	1.2545
Total	0.8761	8.6500e-003	0.7501	4.0000e-005		4.1500e-003	4.1500e-003		4.1500e-003	4.1500e-003	0.0000	1.2251	1.2251	1.1800e-003	0.0000	1.2545

7.0 Water Detail**7.1 Mitigation Measures Water**

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

Monterey Gateway - Bay Area AQMD Air District, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	6.8515	0.1789	4.3300e-003	12.6135
Unmitigated	8.2582	0.2236	5.4000e-003	15.4577

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Regional Shopping Center	0.259254 / 0.158898	0.3112	8.4700e-003	2.0000e-004	0.5841
Single Family Housing	6.58056 / 4.14861	7.9469	0.2151	5.2000e-003	14.8736
Total		8.2582	0.2236	5.4000e-003	15.4577

Monterey Gateway - Bay Area AQMD Air District, Annual

7.2 Water by Land Use**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Regional Shopping Center	0.207403 / 0.149205	0.2580	6.7800e-003	1.6000e-004	0.4764
Single Family Housing	5.26445 / 3.89555	6.5935	0.1721	4.1700e-003	12.1371
Total		6.8515	0.1789	4.3300e-003	12.6135

8.0 Waste Detail**8.1 Mitigation Measures Waste****Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	25.3861	1.5003	0.0000	62.8929
Unmitigated	25.3861	1.5003	0.0000	62.8929

Monterey Gateway - Bay Area AQMD Air District, Annual

8.2 Waste by Land Use**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Regional Shopping Center	3.68	0.7470	0.0442	0.0000	1.8507
Single Family Housing	121.38	24.6390	1.4561	0.0000	61.0422
Total		25.3861	1.5003	0.0000	62.8929

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Regional Shopping Center	3.68	0.7470	0.0442	0.0000	1.8507
Single Family Housing	121.38	24.6390	1.4561	0.0000	61.0422
Total		25.3861	1.5003	0.0000	62.8929

9.0 Operational Offroad

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

Monterey Gateway - Bay Area AQMD Air District, Annual

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

Monterey Gateway - Bay Area AQMD Air District, Summer

Monterey Gateway
Bay Area AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	101.00	Dwelling Unit	5.67	181,800.00	289
Regional Shopping Center	3.50	1000sqft	0.08	3,500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	64
Climate Zone	4			Operational Year	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	257.69	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Monterey Gateway - Bay Area AQMD Air District, Summer

Project Characteristics - updating co2 intensity factor

Land Use - update acreage

Construction Phase - updating days

Grading - updating acreage

Demolition -

Vehicle Trips - updating trip rates per traffic impact analysis

Mobile Land Use Mitigation -

Water Mitigation -

Energy Mitigation -

Area Mitigation -

Energy Use - title 24 adjustments

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	520.00
tblConstructionPhase	NumDays	230.00	520.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	20.00	50.00
tblConstructionPhase	NumDays	10.00	20.00
tblConstructionPhase	PhaseEndDate	9/21/2021	11/29/2022
tblConstructionPhase	PhaseEndDate	7/27/2021	11/15/2022
tblConstructionPhase	PhaseEndDate	7/28/2020	7/14/2020
tblConstructionPhase	PhaseEndDate	9/8/2020	10/20/2020
tblConstructionPhase	PhaseEndDate	8/24/2021	11/17/2020
tblConstructionPhase	PhaseStartDate	8/25/2021	12/2/2020
tblConstructionPhase	PhaseStartDate	9/9/2020	11/18/2020
tblConstructionPhase	PhaseStartDate	7/28/2021	10/21/2020
tblConstructionPhase	PhaseStartDate	7/29/2020	7/15/2020

Monterey Gateway - Bay Area AQMD Air District, Summer

tblEnergyUse	T24E	325.76	153.11
tblEnergyUse	T24E	2.76	1.93
tblEnergyUse	T24NG	25,910.09	12,177.74
tblEnergyUse	T24NG	2.37	1.66
tblGrading	AcresOfGrading	25.00	5.67
tblGrading	MaterialExported	0.00	20.00
tblGrading	MaterialImported	0.00	14,960.00
tblLandUse	LotAcreage	32.79	5.67
tblProjectCharacteristics	CO2IntensityFactor	641.35	257.69
tblTripsAndVMT	HaulingTripNumber	3.00	2.00
tblVehicleTrips	ST_TR	9.91	9.24
tblVehicleTrips	ST_TR	49.97	31.43
tblVehicleTrips	SU_TR	8.62	9.24
tblVehicleTrips	SU_TR	25.24	31.43
tblVehicleTrips	WD_TR	9.52	9.24
tblVehicleTrips	WD_TR	42.70	31.43

2.0 Emissions Summary

Monterey Gateway - Bay Area AQMD Air District, Summer

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					
2020	7.5490	42.4839	22.1841	0.0606	18.2160	2.1985	20.4144	9.9704	2.0226	11.9930	0.0000	6,177.532 1	6,177.532 1	1.1958	0.0000	6,204.811 2
2021	7.2878	20.1784	19.7416	0.0364	0.4359	1.0575	1.4934	0.1173	0.9998	1.1171	0.0000	3,501.128 5	3,501.128 5	0.6580	0.0000	3,517.579 5
2022	7.0666	18.1756	19.4250	0.0362	0.4359	0.8951	1.3310	0.1173	0.8470	0.9643	0.0000	3,486.214 6	3,486.214 6	0.6515	0.0000	3,502.502 8
Maximum	7.5490	42.4839	22.1841	0.0606	18.2160	2.1985	20.4144	9.9704	2.0226	11.9930	0.0000	6,177.532 1	6,177.532 1	1.1958	0.0000	6,204.811 2

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					
2020	7.5490	42.4839	22.1841	0.0606	18.2160	2.1985	20.4144	9.9704	2.0226	11.9930	0.0000	6,177.532 1	6,177.532 1	1.1958	0.0000	6,204.8112
2021	7.2878	20.1784	19.7416	0.0364	0.4359	1.0575	1.4934	0.1173	0.9998	1.1171	0.0000	3,501.128 5	3,501.128 5	0.6580	0.0000	3,517.579 5
2022	7.0666	18.1756	19.4250	0.0362	0.4359	0.8951	1.3310	0.1173	0.8470	0.9643	0.0000	3,486.214 6	3,486.214 6	0.6515	0.0000	3,502.502 8
Maximum	7.5490	42.4839	22.1841	0.0606	18.2160	2.1985	20.4144	9.9704	2.0226	11.9930	0.0000	6,177.532 1	6,177.532 1	1.1958	0.0000	6,204.811 2

Monterey Gateway - Bay Area AQMD Air District, Summer

[illegible]

Monterey Gateway - Bay Area AQMD Air District, Summer

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	109.5959	2.1114	143.7040	0.2554		19.1880	19.1880		19.1880	19.1880	2,058.212 2	638.8281	2,697.040 3	2.5593	0.1452	2,804.303 4
Energy	0.0459	0.3926	0.1677	2.5100e- 003		0.0317	0.0317		0.0317	0.0317		501.0207	501.0207	9.6000e- 003	9.1900e- 003	503.9980
Mobile	1.4877	5.5294	15.1084	0.0569	4.9876	0.0441	5.0317	1.3343	0.0411	1.3755		5,760.388 0	5,760.388 0	0.1912		5,765.167 1
Total	111.1295	8.0334	158.9801	0.3148	4.9876	19.2638	24.2514	1.3343	19.2609	20.5952	2,058.212 2	6,900.236 7	8,958.448 9	2.7601	0.1544	9,073.468 4

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	4.9278	0.0961	8.3348	4.4000e- 004		0.0461	0.0461		0.0461	0.0461	0.0000	15.0046	15.0046	0.0144	0.0000	15.3653
Energy	0.0459	0.3926	0.1677	2.5100e- 003		0.0317	0.0317		0.0317	0.0317		501.0207	501.0207	9.6000e- 003	9.1900e- 003	503.9980
Mobile	1.4335	5.2265	13.7009	0.0507	4.3991	0.0395	4.4386	1.1769	0.0369	1.2138		5,132.153 7	5,132.153 7	0.1743		5,136.5112
Total	6.4072	5.7151	22.2034	0.0536	4.3991	0.1174	4.5165	1.1769	0.1148	1.2916	0.0000	5,648.179 0	5,648.179 0	0.1983	9.1900e- 003	5,655.874 6

Monterey Gateway - Bay Area AQMD Air District, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	94.23	28.86	86.03	82.96	11.80	99.39	81.38	11.80	99.40	93.73	100.00	18.15	36.95	92.81	94.05	37.67

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	7/1/2020	7/14/2020	5	10	
2	Site Preparation	Site Preparation	7/15/2020	8/11/2020	5	20	
3	Grading	Grading	8/12/2020	10/20/2020	5	50	
4	Building Construction	Building Construction	11/18/2020	11/15/2022	5	520	
5	Paving	Paving	10/21/2020	11/17/2020	5	20	
6	Architectural Coating	Architectural Coating	12/2/2020	11/29/2022	5	520	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 5.665

Acres of Paving: 0

Residential Indoor: 368,145; Residential Outdoor: 122,715; Non-Residential Indoor: 5,250; Non-Residential Outdoor: 1,750; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Monterey Gateway - Bay Area AQMD Air District, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Excavators	3	8.00	158	0.38
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Excavators	1	8.00	158	0.38
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
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Monterey Gateway - Bay Area AQMD Air District, Summer

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	5.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	2.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	1,870.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	37.00	11.00	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	1	7.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2020

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					0.1063	0.0000	0.1063	0.0161	0.0000	0.0161			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419		3,747.7049	3,747.7049	1.0580		3,774.1536
Total	3.3121	33.2010	21.7532	0.0388	0.1063	1.6587	1.7650	0.0161	1.5419	1.5580		3,747.7049	3,747.7049	1.0580		3,774.1536

Monterey Gateway - Bay Area AQMD Air District, Summer

3.2 Demolition - 2020**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	4.1300e-003	0.1432	0.0285	4.0000e-004	8.7300e-003	4.7000e-004	9.2000e-003	2.3900e-003	4.5000e-004	2.8400e-003		42.5392	42.5392	2.1300e-003		42.5924
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	0.0521	0.0316	0.4025	1.2400e-003	0.1232	8.0000e-004	0.1240	0.0327	7.4000e-004	0.0334		123.1165	123.1165	2.9700e-003		123.1907
Total	0.0563	0.1748	0.4309	1.6400e-003	0.1320	1.2700e-003	0.1332	0.0351	1.1900e-003	0.0363		165.6557	165.6557	5.1000e-003		165.7830

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					0.1063	0.0000	0.1063	0.0161	0.0000	0.0161			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419	0.0000	3,747.7049	3,747.7049	1.0580		3,774.1536
Total	3.3121	33.2010	21.7532	0.0388	0.1063	1.6587	1.7650	0.0161	1.5419	1.5580	0.0000	3,747.7049	3,747.7049	1.0580		3,774.1536

Monterey Gateway - Bay Area AQMD Air District, Summer

3.2 Demolition - 2020**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	4.1300e-003	0.1432	0.0285	4.0000e-004	8.7300e-003	4.7000e-004	9.2000e-003	2.3900e-003	4.5000e-004	2.8400e-003		42.5392	42.5392	2.1300e-003		42.5924
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	0.0521	0.0316	0.4025	1.2400e-003	0.1232	8.0000e-004	0.1240	0.0327	7.4000e-004	0.0334		123.1165	123.1165	2.9700e-003		123.1907
Total	0.0563	0.1748	0.4309	1.6400e-003	0.1320	1.2700e-003	0.1332	0.0351	1.1900e-003	0.0363		165.6557	165.6557	5.1000e-003		165.7830

3.3 Site Preparation - 2020**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					18.0664	0.0000	18.0664	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	4.0765	42.4173	21.5136	0.0380	18.0664	2.1974	20.2638	9.9307	2.0216	11.9523		3,685.1016	3,685.1016	1.1918		3,714.8975

Monterey Gateway - Bay Area AQMD Air District, Summer

3.3 Site Preparation - 2020**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	8.3000e-004	0.0286	5.6900e-003	8.0000e-005	1.7500e-003	9.0000e-005	1.8400e-003	4.8000e-004	9.0000e-005	5.7000e-004		8.5078	8.5078	4.3000e-004		8.5185
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	0.0626	0.0379	0.4830	1.4800e-003	0.1479	9.6000e-004	0.1488	0.0392	8.8000e-004	0.0401		147.7398	147.7398	3.5600e-003		147.8288
Total	0.0634	0.0665	0.4886	1.5600e-003	0.1496	1.0500e-003	0.1507	0.0397	9.7000e-004	0.0407		156.2476	156.2476	3.9900e-003		156.3473

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					18.0664	0.0000	18.0664	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	4.0765	42.4173	21.5136	0.0380	18.0664	2.1974	20.2638	9.9307	2.0216	11.9523	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975

Monterey Gateway - Bay Area AQMD Air District, Summer

3.3 Site Preparation - 2020**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	8.3000e-004	0.0286	5.6900e-003	8.0000e-005	1.7500e-003	9.0000e-005	1.8400e-003	4.8000e-004	9.0000e-005	5.7000e-004		8.5078	8.5078	4.3000e-004		8.5185
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	0.0626	0.0379	0.4830	1.4800e-003	0.1479	9.6000e-004	0.1488	0.0392	8.8000e-004	0.0401		147.7398	147.7398	3.5600e-003		147.8288
Total	0.0634	0.0665	0.4886	1.5600e-003	0.1496	1.0500e-003	0.1507	0.0397	9.7000e-004	0.0407		156.2476	156.2476	3.9900e-003		156.3473

3.4 Grading - 2020**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					6.1761	0.0000	6.1761	3.3283	0.0000	3.3283			0.0000			0.0000
Off-Road	2.4288	26.3859	16.0530	0.0297		1.2734	1.2734		1.1716	1.1716		2,872.4851	2,872.4851	0.9290		2,895.7106
Total	2.4288	26.3859	16.0530	0.0297	6.1761	1.2734	7.4495	3.3283	1.1716	4.4999		2,872.4851	2,872.4851	0.9290		2,895.7106

Monterey Gateway - Bay Area AQMD Air District, Summer

3.4 Grading - 2020**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	0.3086	10.7130	2.1292	0.0298	0.6534	0.0350	0.6884	0.1791	0.0335	0.2126		3,181.9305	3,181.9305	0.1592		3,185.9099
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	0.0521	0.0316	0.4025	1.2400e-003	0.1232	8.0000e-004	0.1240	0.0327	7.4000e-004	0.0334		123.1165	123.1165	2.9700e-003		123.1907
Total	0.3608	10.7446	2.5316	0.0310	0.7766	0.0358	0.8124	0.2117	0.0342	0.2460		3,305.0469	3,305.0469	0.1622		3,309.1005

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					6.1761	0.0000	6.1761	3.3283	0.0000	3.3283			0.0000			0.0000
Off-Road	2.4288	26.3859	16.0530	0.0297		1.2734	1.2734		1.1716	1.1716	0.0000	2,872.4851	2,872.4851	0.9290		2,895.7106
Total	2.4288	26.3859	16.0530	0.0297	6.1761	1.2734	7.4495	3.3283	1.1716	4.4999	0.0000	2,872.4851	2,872.4851	0.9290		2,895.7106

Monterey Gateway - Bay Area AQMD Air District, Summer

3.4 Grading - 2020**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	0.3086	10.7130	2.1292	0.0298	0.6534	0.0350	0.6884	0.1791	0.0335	0.2126		3,181.9305	3,181.9305	0.1592		3,185.9099
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	0.0521	0.0316	0.4025	1.2400e-003	0.1232	8.0000e-004	0.1240	0.0327	7.4000e-004	0.0334		123.1165	123.1165	2.9700e-003		123.1907
Total	0.3608	10.7446	2.5316	0.0310	0.7766	0.0358	0.8124	0.2117	0.0342	0.2460		3,305.0469	3,305.0469	0.1622		3,309.1005

3.5 Building Construction - 2020**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	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345

Monterey Gateway - Bay Area AQMD Air District, Summer

3.5 Building Construction - 2020**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	0.0417	1.2536	0.2990	3.0300e-003	0.0745	6.1500e-003	0.0806	0.0214	5.8800e-003	0.0273		320.8789	320.8789	0.0158		321.2739
Worker	0.1286	0.0779	0.9927	3.0500e-003	0.3040	1.9700e-003	0.3059	0.0806	1.8100e-003	0.0824		303.6873	303.6873	7.3200e-003		303.8703
Total	0.1703	1.3315	1.2918	6.0800e-003	0.3784	8.1200e-003	0.3865	0.1021	7.6900e-003	0.1097		624.5662	624.5662	0.0231		625.1442

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	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345

Monterey Gateway - Bay Area AQMD Air District, Summer

3.5 Building Construction - 2020**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	0.0417	1.2536	0.2990	3.0300e-003	0.0745	6.1500e-003	0.0806	0.0214	5.8800e-003	0.0273		320.8789	320.8789	0.0158		321.2739
Worker	0.1286	0.0779	0.9927	3.0500e-003	0.3040	1.9700e-003	0.3059	0.0806	1.8100e-003	0.0824		303.6873	303.6873	7.3200e-003		303.8703
Total	0.1703	1.3315	1.2918	6.0800e-003	0.3784	8.1200e-003	0.3865	0.1021	7.6900e-003	0.1097		624.5662	624.5662	0.0231		625.1442

3.5 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

Monterey Gateway - Bay Area AQMD Air District, Summer

3.5 Building Construction - 2021**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	0.0341	1.1368	0.2681	3.0000e-003	0.0745	2.4600e-003	0.0769	0.0214	2.3600e-003	0.0238		317.8544	317.8544	0.0149		318.2274
Worker	0.1190	0.0695	0.9088	2.9400e-003	0.3040	1.9100e-003	0.3059	0.0806	1.7600e-003	0.0824		293.0250	293.0250	6.5500e-003		293.1888
Total	0.1531	1.2063	1.1769	5.9400e-003	0.3784	4.3700e-003	0.3828	0.1021	4.1200e-003	0.1062		610.8794	610.8794	0.0215		611.4161

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	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	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	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643

Monterey Gateway - Bay Area AQMD Air District, Summer

3.5 Building Construction - 2021**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	0.0341	1.1368	0.2681	3.0000e-003	0.0745	2.4600e-003	0.0769	0.0214	2.3600e-003	0.0238		317.8544	317.8544	0.0149		318.2274
Worker	0.1190	0.0695	0.9088	2.9400e-003	0.3040	1.9100e-003	0.3059	0.0806	1.7600e-003	0.0824		293.0250	293.0250	6.5500e-003		293.1888
Total	0.1531	1.2063	1.1769	5.9400e-003	0.3784	4.3700e-003	0.3828	0.1021	4.1200e-003	0.1062		610.8794	610.8794	0.0215		611.4161

3.5 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

Monterey Gateway - Bay Area AQMD Air District, Summer

3.5 Building Construction - 2022**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	0.0318	1.0773	0.2521	2.9700e-003	0.0745	2.1300e-003	0.0766	0.0214	2.0400e-003	0.0235		314.7590	314.7590	0.0143		315.1156
Worker	0.1107	0.0624	0.8374	2.8300e-003	0.3040	1.8700e-003	0.3058	0.0806	1.7200e-003	0.0823		282.2713	282.2713	5.8800e-003		282.4183
Total	0.1426	1.1397	1.0895	5.8000e-003	0.3784	4.0000e-003	0.3824	0.1021	3.7600e-003	0.1058		597.0302	597.0302	0.0201		597.5339

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	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	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	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322

Monterey Gateway - Bay Area AQMD Air District, Summer

3.5 Building Construction - 2022**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	0.0318	1.0773	0.2521	2.9700e-003	0.0745	2.1300e-003	0.0766	0.0214	2.0400e-003	0.0235		314.7590	314.7590	0.0143		315.1156
Worker	0.1107	0.0624	0.8374	2.8300e-003	0.3040	1.8700e-003	0.3058	0.0806	1.7200e-003	0.0823		282.2713	282.2713	5.8800e-003		282.4183
Total	0.1426	1.1397	1.0895	5.8000e-003	0.3784	4.0000e-003	0.3824	0.1021	3.7600e-003	0.1058		597.0302	597.0302	0.0201		597.5339

3.6 Paving - 2020**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	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926		2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926		2,207.7334	2,207.7334	0.7140		2,225.5841

Monterey Gateway - Bay Area AQMD Air District, Summer

3.6 Paving - 2020**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	0.0521	0.0316	0.4025	1.2400e-003	0.1232	8.0000e-004	0.1240	0.0327	7.4000e-004	0.0334		123.1165	123.1165	2.9700e-003		123.1907
Total	0.0521	0.0316	0.4025	1.2400e-003	0.1232	8.0000e-004	0.1240	0.0327	7.4000e-004	0.0334		123.1165	123.1165	2.9700e-003		123.1907

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	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926	0.0000	2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926	0.0000	2,207.7334	2,207.7334	0.7140		2,225.5841

Monterey Gateway - Bay Area AQMD Air District, Summer

3.6 Paving - 2020**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	0.0521	0.0316	0.4025	1.2400e-003	0.1232	8.0000e-004	0.1240	0.0327	7.4000e-004	0.0334		123.1165	123.1165	2.9700e-003		123.1907
Total	0.0521	0.0316	0.4025	1.2400e-003	0.1232	8.0000e-004	0.1240	0.0327	7.4000e-004	0.0334		123.1165	123.1165	2.9700e-003		123.1907

3.7 Architectural Coating - 2020**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	4.9924					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	5.2345	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928

Monterey Gateway - Bay Area AQMD Air District, Summer

3.7 Architectural Coating - 2020**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	0.0243	0.0147	0.1878	5.8000e-004	0.0575	3.7000e-004	0.0579	0.0153	3.4000e-004	0.0156		57.4544	57.4544	1.3800e-003		57.4890
Total	0.0243	0.0147	0.1878	5.8000e-004	0.0575	3.7000e-004	0.0579	0.0153	3.4000e-004	0.0156		57.4544	57.4544	1.3800e-003		57.4890

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	4.9924					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	5.2345	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928

Monterey Gateway - Bay Area AQMD Air District, Summer

3.7 Architectural Coating - 2020**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	0.0243	0.0147	0.1878	5.8000e-004	0.0575	3.7000e-004	0.0579	0.0153	3.4000e-004	0.0156		57.4544	57.4544	1.3800e-003		57.4890
Total	0.0243	0.0147	0.1878	5.8000e-004	0.0575	3.7000e-004	0.0579	0.0153	3.4000e-004	0.0156		57.4544	57.4544	1.3800e-003		57.4890

3.7 Architectural Coating - 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					
Archit. Coating	4.9924					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	5.2113	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309

Monterey Gateway - Bay Area AQMD Air District, Summer

3.7 Architectural Coating - 2021**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	0.0225	0.0132	0.1719	5.6000e-004	0.0575	3.6000e-004	0.0579	0.0153	3.3000e-004	0.0156		55.4372	55.4372	1.2400e-003		55.4682
Total	0.0225	0.0132	0.1719	5.6000e-004	0.0575	3.6000e-004	0.0579	0.0153	3.3000e-004	0.0156		55.4372	55.4372	1.2400e-003		55.4682

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	4.9924					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	5.2113	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309

Monterey Gateway - Bay Area AQMD Air District, Summer

3.7 Architectural Coating - 2021**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	0.0225	0.0132	0.1719	5.6000e-004	0.0575	3.6000e-004	0.0579	0.0153	3.3000e-004	0.0156		55.4372	55.4372	1.2400e-003		55.4682
Total	0.0225	0.0132	0.1719	5.6000e-004	0.0575	3.6000e-004	0.0579	0.0153	3.3000e-004	0.0156		55.4372	55.4372	1.2400e-003		55.4682

3.7 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	4.9924					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	5.1969	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062

Monterey Gateway - Bay Area AQMD Air District, Summer

3.7 Architectural Coating - 2022**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	0.0210	0.0118	0.1584	5.4000e-004	0.0575	3.5000e-004	0.0579	0.0153	3.3000e-004	0.0156		53.4027	53.4027	1.1100e-003		53.4305
Total	0.0210	0.0118	0.1584	5.4000e-004	0.0575	3.5000e-004	0.0579	0.0153	3.3000e-004	0.0156		53.4027	53.4027	1.1100e-003		53.4305

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	4.9924					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	5.1969	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062

Monterey Gateway - Bay Area AQMD Air District, Summer

3.7 Architectural Coating - 2022**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	0.0210	0.0118	0.1584	5.4000e-004	0.0575	3.5000e-004	0.0579	0.0153	3.3000e-004	0.0156		53.4027	53.4027	1.1100e-003		53.4305
Total	0.0210	0.0118	0.1584	5.4000e-004	0.0575	3.5000e-004	0.0579	0.0153	3.3000e-004	0.0156		53.4027	53.4027	1.1100e-003		53.4305

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

Increase Transit Accessibility

Improve Pedestrian Network

Monterey Gateway - Bay Area AQMD Air District, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	1.4335	5.2265	13.7009	0.0507	4.3991	0.0395	4.4386	1.1769	0.0369	1.2138		5,132.1537	5,132.1537	0.1743		5,136.5112
Unmitigated	1.4877	5.5294	15.1084	0.0569	4.9876	0.0441	5.0317	1.3343	0.0411	1.3755		5,760.3880	5,760.3880	0.1912		5,765.1671

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	933.04	933.04	933.04	2,154,951	1,900,667
Regional Shopping Center	110.00	110.00	110.00	192,866	170,108
Total	1,043.04	1,043.04	1,043.04	2,347,818	2,070,775

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749
Regional Shopping Center	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749

Monterey Gateway - Bay Area AQMD Air District, Summer

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

Kilowatt Hours of Renewable Electricity Generated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.0459	0.3926	0.1677	2.5100e-003		0.0317	0.0317		0.0317	0.0317		501.0207	501.0207	9.6000e-003	9.1900e-003	503.9980
NaturalGas Unmitigated	0.0459	0.3926	0.1677	2.5100e-003		0.0317	0.0317		0.0317	0.0317		501.0207	501.0207	9.6000e-003	9.1900e-003	503.9980

Monterey Gateway - Bay Area AQMD Air District, Summer

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					
Regional Shopping Center	15.9178	1.7000e-004	1.5600e-003	1.3100e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004		1.8727	1.8727	4.0000e-005	3.0000e-005	1.8838
Single Family Housing	4242.76	0.0458	0.3910	0.1664	2.5000e-003		0.0316	0.0316		0.0316	0.0316		499.1480	499.1480	9.5700e-003	9.1500e-003	502.1142
Total		0.0459	0.3926	0.1677	2.5100e-003		0.0317	0.0317		0.0317	0.0317		501.0207	501.0207	9.6100e-003	9.1800e-003	503.9980

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					
Regional Shopping Center	0.0159178	1.7000e-004	1.5600e-003	1.3100e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004		1.8727	1.8727	4.0000e-005	3.0000e-005	1.8838
Single Family Housing	4.24276	0.0458	0.3910	0.1664	2.5000e-003		0.0316	0.0316		0.0316	0.0316		499.1480	499.1480	9.5700e-003	9.1500e-003	502.1142
Total		0.0459	0.3926	0.1677	2.5100e-003		0.0317	0.0317		0.0317	0.0317		501.0207	501.0207	9.6100e-003	9.1800e-003	503.9980

6.0 Area Detail**6.1 Mitigation Measures Area**

Monterey Gateway - Bay Area AQMD Air District, Summer

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	4.9278	0.0961	8.3348	4.4000e-004		0.0461	0.0461		0.0461	0.0461	0.0000	15.0046	15.0046	0.0144	0.0000	15.3653
Unmitigated	109.5959	2.1114	143.7040	0.2554		19.1880	19.1880		19.1880	19.1880	2,058.212 2	638.8281	2,697.040 3	2.5593	0.1452	2,804.303 4

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	0.7112					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.9654					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	104.6681	2.0153	135.3692	0.2549		19.1419	19.1419		19.1419	19.1419	2,058.212 2	623.8235	2,682.035 7	2.5449	0.1452	2,788.938 1
Landscaping	0.2511	0.0961	8.3348	4.4000e-004		0.0461	0.0461		0.0461	0.0461		15.0046	15.0046	0.0144		15.3653
Total	109.5958	2.1114	143.7040	0.2554		19.1880	19.1880		19.1880	19.1880	2,058.212 2	638.8281	2,697.040 3	2.5593	0.1452	2,804.303 4

Monterey Gateway - Bay Area AQMD Air District, Summer

6.2 Area by SubCategory**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	0.7112					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.9654					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	0.2511	0.0961	8.3348	4.4000e-004		0.0461	0.0461		0.0461	0.0461		15.0046	15.0046	0.0144		15.3653
Total	4.9278	0.0961	8.3348	4.4000e-004		0.0461	0.0461		0.0461	0.0461	0.0000	15.0046	15.0046	0.0144	0.0000	15.3653

7.0 Water Detail**7.1 Mitigation Measures Water**

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail**8.1 Mitigation Measures Waste**

Monterey Gateway - Bay Area AQMD Air District, Summer

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

Monterey Gateway - Bay Area AQMD Air District, Winter

Monterey Gateway
Bay Area AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	101.00	Dwelling Unit	5.67	181,800.00	289
Regional Shopping Center	3.50	1000sqft	0.08	3,500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	64
Climate Zone	4			Operational Year	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	257.69	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Monterey Gateway - Bay Area AQMD Air District, Winter

Project Characteristics - updating co2 intensity factor

Land Use - update acreage

Construction Phase - updating days

Grading - updating acreage

Demolition -

Vehicle Trips - updating trip rates per traffic impact analysis

Mobile Land Use Mitigation -

Water Mitigation -

Energy Mitigation -

Area Mitigation -

Energy Use - title 24 adjustments

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	520.00
tblConstructionPhase	NumDays	230.00	520.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	20.00	50.00
tblConstructionPhase	NumDays	10.00	20.00
tblConstructionPhase	PhaseEndDate	9/21/2021	11/29/2022
tblConstructionPhase	PhaseEndDate	7/27/2021	11/15/2022
tblConstructionPhase	PhaseEndDate	7/28/2020	7/14/2020
tblConstructionPhase	PhaseEndDate	9/8/2020	10/20/2020
tblConstructionPhase	PhaseEndDate	8/24/2021	11/17/2020
tblConstructionPhase	PhaseStartDate	8/25/2021	12/2/2020
tblConstructionPhase	PhaseStartDate	9/9/2020	11/18/2020
tblConstructionPhase	PhaseStartDate	7/28/2021	10/21/2020
tblConstructionPhase	PhaseStartDate	7/29/2020	7/15/2020

Monterey Gateway - Bay Area AQMD Air District, Winter

tblEnergyUse	T24E	325.76	153.11
tblEnergyUse	T24E	2.76	1.93
tblEnergyUse	T24NG	25,910.09	12,177.74
tblEnergyUse	T24NG	2.37	1.66
tblGrading	AcresOfGrading	25.00	5.67
tblGrading	MaterialExported	0.00	20.00
tblGrading	MaterialImported	0.00	14,960.00
tblLandUse	LotAcreage	32.79	5.67
tblProjectCharacteristics	CO2IntensityFactor	641.35	257.69
tblTripsAndVMT	HaulingTripNumber	3.00	2.00
tblVehicleTrips	ST_TR	9.91	9.24
tblVehicleTrips	ST_TR	49.97	31.43
tblVehicleTrips	SU_TR	8.62	9.24
tblVehicleTrips	SU_TR	25.24	31.43
tblVehicleTrips	WD_TR	9.52	9.24
tblVehicleTrips	WD_TR	42.70	31.43

2.0 Emissions Summary

Monterey Gateway - Bay Area AQMD Air District, Winter

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					
2020	7.5600	42.4935	22.1618	0.0600	18.2160	2.1985	20.4144	9.9704	2.0226	11.9930	0.0000	6,114.3809	6,114.3809	1.1956	0.0000	6,141.8552
2021	7.2982	20.2076	19.7120	0.0360	0.4359	1.0575	1.4935	0.1173	0.9999	1.1172	0.0000	3,465.5979	3,465.5979	0.6587	0.0000	3,482.0662
2022	7.0767	18.2012	19.3945	0.0359	0.4359	0.8952	1.3311	0.1173	0.8470	0.9644	0.0000	3,451.7329	3,451.7329	0.6522	0.0000	3,468.0377
Maximum	7.5600	42.4935	22.1618	0.0600	18.2160	2.1985	20.4144	9.9704	2.0226	11.9930	0.0000	6,114.3809	6,114.3809	1.1956	0.0000	6,141.8552

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					
2020	7.5600	42.4935	22.1618	0.0600	18.2160	2.1985	20.4144	9.9704	2.0226	11.9930	0.0000	6,114.3809	6,114.3809	1.1956	0.0000	6,141.8552
2021	7.2982	20.2076	19.7120	0.0360	0.4359	1.0575	1.4935	0.1173	0.9999	1.1172	0.0000	3,465.5979	3,465.5979	0.6587	0.0000	3,482.0662
2022	7.0767	18.2012	19.3945	0.0359	0.4359	0.8952	1.3311	0.1173	0.8470	0.9644	0.0000	3,451.7329	3,451.7329	0.6522	0.0000	3,468.0377
Maximum	7.5600	42.4935	22.1618	0.0600	18.2160	2.1985	20.4144	9.9704	2.0226	11.9930	0.0000	6,114.3809	6,114.3809	1.1956	0.0000	6,141.8552

Monterey Gateway - Bay Area AQMD Air District, Winter

[illegible]

Monterey Gateway - Bay Area AQMD Air District, Winter

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	109.5959	2.1114	143.7040	0.2554		19.1880	19.1880		19.1880	19.1880	2,058.212 2	638.8281	2,697.040 3	2.5593	0.1452	2,804.303 4
Energy	0.0459	0.3926	0.1677	2.5100e- 003		0.0317	0.0317		0.0317	0.0317		501.0207	501.0207	9.6000e- 003	9.1900e- 003	503.9980
Mobile	1.2787	5.8088	15.2144	0.0533	4.9876	0.0443	5.0319	1.3343	0.0414	1.3757		5,394.589 0	5,394.589 0	0.1949		5,399.461 6
Total	110.9205	8.3128	159.0861	0.3112	4.9876	19.2640	24.2516	1.3343	19.2611	20.5954	2,058.212 2	6,534.437 8	8,592.650 0	2.7638	0.1544	8,707.763 0

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	4.9278	0.0961	8.3348	4.4000e- 004		0.0461	0.0461		0.0461	0.0461	0.0000	15.0046	15.0046	0.0144	0.0000	15.3653
Energy	0.0459	0.3926	0.1677	2.5100e- 003		0.0317	0.0317		0.0317	0.0317		501.0207	501.0207	9.6000e- 003	9.1900e- 003	503.9980
Mobile	1.2252	5.4714	13.9621	0.0475	4.3991	0.0397	4.4388	1.1769	0.0371	1.2140		4,804.957 6	4,804.957 6	0.1788		4,809.426 9
Total	6.1990	5.9601	22.4646	0.0504	4.3991	0.1176	4.5167	1.1769	0.1150	1.2918	0.0000	5,320.982 9	5,320.982 9	0.2028	9.1900e- 003	5,328.790 2

Monterey Gateway - Bay Area AQMD Air District, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	94.41	28.30	85.88	83.80	11.80	99.39	81.38	11.80	99.40	93.73	100.00	18.57	38.08	92.66	94.05	38.80

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	7/1/2020	7/14/2020	5	10	
2	Site Preparation	Site Preparation	7/15/2020	8/11/2020	5	20	
3	Grading	Grading	8/12/2020	10/20/2020	5	50	
4	Building Construction	Building Construction	11/18/2020	11/15/2022	5	520	
5	Paving	Paving	10/21/2020	11/17/2020	5	20	
6	Architectural Coating	Architectural Coating	12/2/2020	11/29/2022	5	520	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 5.665

Acres of Paving: 0

Residential Indoor: 368,145; Residential Outdoor: 122,715; Non-Residential Indoor: 5,250; Non-Residential Outdoor: 1,750; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Monterey Gateway - Bay Area AQMD Air District, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Excavators	3	8.00	158	0.38
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Excavators	1	8.00	158	0.38
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
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Monterey Gateway - Bay Area AQMD Air District, Winter

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	5.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	2.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	1,870.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	37.00	11.00	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	1	7.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2020

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					0.1063	0.0000	0.1063	0.0161	0.0000	0.0161			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419		3,747.7049	3,747.7049	1.0580		3,774.1536
Total	3.3121	33.2010	21.7532	0.0388	0.1063	1.6587	1.7650	0.0161	1.5419	1.5580		3,747.7049	3,747.7049	1.0580		3,774.1536

Monterey Gateway - Bay Area AQMD Air District, Winter

3.2 Demolition - 2020**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	4.2400e-003	0.1467	0.0306	3.9000e-004	8.7300e-003	4.8000e-004	9.2100e-003	2.3900e-003	4.6000e-004	2.8500e-003		41.8247	41.8247	2.2400e-003		41.8806
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	0.0552	0.0390	0.3780	1.1400e-003	0.1232	8.0000e-004	0.1240	0.0327	7.4000e-004	0.0334		113.4098	113.4098	2.7700e-003		113.4792
Total	0.0594	0.1857	0.4086	1.5300e-003	0.1320	1.2800e-003	0.1332	0.0351	1.2000e-003	0.0363		155.2345	155.2345	5.0100e-003		155.3597

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					0.1063	0.0000	0.1063	0.0161	0.0000	0.0161			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419	0.0000	3,747.7049	3,747.7049	1.0580		3,774.1536
Total	3.3121	33.2010	21.7532	0.0388	0.1063	1.6587	1.7650	0.0161	1.5419	1.5580	0.0000	3,747.7049	3,747.7049	1.0580		3,774.1536

Monterey Gateway - Bay Area AQMD Air District, Winter

3.2 Demolition - 2020**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	4.2400e-003	0.1467	0.0306	3.9000e-004	8.7300e-003	4.8000e-004	9.2100e-003	2.3900e-003	4.6000e-004	2.8500e-003		41.8247	41.8247	2.2400e-003		41.8806
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	0.0552	0.0390	0.3780	1.1400e-003	0.1232	8.0000e-004	0.1240	0.0327	7.4000e-004	0.0334		113.4098	113.4098	2.7700e-003		113.4792
Total	0.0594	0.1857	0.4086	1.5300e-003	0.1320	1.2800e-003	0.1332	0.0351	1.2000e-003	0.0363		155.2345	155.2345	5.0100e-003		155.3597

3.3 Site Preparation - 2020**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					18.0664	0.0000	18.0664	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	4.0765	42.4173	21.5136	0.0380	18.0664	2.1974	20.2638	9.9307	2.0216	11.9523		3,685.1016	3,685.1016	1.1918		3,714.8975

Monterey Gateway - Bay Area AQMD Air District, Winter

3.3 Site Preparation - 2020**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	8.5000e-004	0.0294	6.1300e-003	8.0000e-005	1.7500e-003	1.0000e-004	1.8400e-003	4.8000e-004	9.0000e-005	5.7000e-004		8.3649	8.3649	4.5000e-004		8.3761
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	0.0662	0.0468	0.4536	1.3700e-003	0.1479	9.6000e-004	0.1488	0.0392	8.8000e-004	0.0401		136.0918	136.0918	3.3300e-003		136.1750
Total	0.0670	0.0762	0.4597	1.4500e-003	0.1496	1.0600e-003	0.1507	0.0397	9.7000e-004	0.0407		144.4567	144.4567	3.7800e-003		144.5511

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					18.0664	0.0000	18.0664	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	4.0765	42.4173	21.5136	0.0380	18.0664	2.1974	20.2638	9.9307	2.0216	11.9523	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975

Monterey Gateway - Bay Area AQMD Air District, Winter

3.3 Site Preparation - 2020**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	8.5000e-004	0.0294	6.1300e-003	8.0000e-005	1.7500e-003	1.0000e-004	1.8400e-003	4.8000e-004	9.0000e-005	5.7000e-004		8.3649	8.3649	4.5000e-004		8.3761
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	0.0662	0.0468	0.4536	1.3700e-003	0.1479	9.6000e-004	0.1488	0.0392	8.8000e-004	0.0401		136.0918	136.0918	3.3300e-003		136.1750
Total	0.0670	0.0762	0.4597	1.4500e-003	0.1496	1.0600e-003	0.1507	0.0397	9.7000e-004	0.0407		144.4567	144.4567	3.7800e-003		144.5511

3.4 Grading - 2020**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					6.1761	0.0000	6.1761	3.3283	0.0000	3.3283			0.0000			0.0000
Off-Road	2.4288	26.3859	16.0530	0.0297		1.2734	1.2734		1.1716	1.1716		2,872.4851	2,872.4851	0.9290		2,895.7106
Total	2.4288	26.3859	16.0530	0.0297	6.1761	1.2734	7.4495	3.3283	1.1716	4.4999		2,872.4851	2,872.4851	0.9290		2,895.7106

Monterey Gateway - Bay Area AQMD Air District, Winter

3.4 Grading - 2020**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	0.3171	10.9759	2.2921	0.0293	0.6534	0.0356	0.6890	0.1791	0.0341	0.2131		3,128.4860	3,128.4860	0.1672		3,132.6654
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	0.0552	0.0390	0.3780	1.1400e-003	0.1232	8.0000e-004	0.1240	0.0327	7.4000e-004	0.0334		113.4098	113.4098	2.7700e-003		113.4792
Total	0.3722	11.0149	2.6701	0.0304	0.7766	0.0364	0.8130	0.2117	0.0348	0.2466		3,241.8958	3,241.8958	0.1700		3,246.1446

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					6.1761	0.0000	6.1761	3.3283	0.0000	3.3283			0.0000			0.0000
Off-Road	2.4288	26.3859	16.0530	0.0297		1.2734	1.2734		1.1716	1.1716	0.0000	2,872.4851	2,872.4851	0.9290		2,895.7106
Total	2.4288	26.3859	16.0530	0.0297	6.1761	1.2734	7.4495	3.3283	1.1716	4.4999	0.0000	2,872.4851	2,872.4851	0.9290		2,895.7106

Monterey Gateway - Bay Area AQMD Air District, Winter

3.4 Grading - 2020**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	0.3171	10.9759	2.2921	0.0293	0.6534	0.0356	0.6890	0.1791	0.0341	0.2131		3,128.4860	3,128.4860	0.1672		3,132.6654
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	0.0552	0.0390	0.3780	1.1400e-003	0.1232	8.0000e-004	0.1240	0.0327	7.4000e-004	0.0334		113.4098	113.4098	2.7700e-003		113.4792
Total	0.3722	11.0149	2.6701	0.0304	0.7766	0.0364	0.8130	0.2117	0.0348	0.2466		3,241.8958	3,241.8958	0.1700		3,246.1446

3.5 Building Construction - 2020**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	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345

Monterey Gateway - Bay Area AQMD Air District, Winter

3.5 Building Construction - 2020**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	0.0439	1.2676	0.3421	2.9500e-003	0.0745	6.2500e-003	0.0807	0.0214	5.9800e-003	0.0274		312.7600	312.7600	0.0171		313.1873
Worker	0.1360	0.0962	0.9324	2.8100e-003	0.3040	1.9700e-003	0.3059	0.0806	1.8100e-003	0.0824		279.7442	279.7442	6.8400e-003		279.9153
Total	0.1799	1.3638	1.2745	5.7600e-003	0.3784	8.2200e-003	0.3866	0.1021	7.7900e-003	0.1098		592.5042	592.5042	0.0239		593.1025

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	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345

Monterey Gateway - Bay Area AQMD Air District, Winter

3.5 Building Construction - 2020**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	0.0439	1.2676	0.3421	2.9500e-003	0.0745	6.2500e-003	0.0807	0.0214	5.9800e-003	0.0274		312.7600	312.7600	0.0171		313.1873
Worker	0.1360	0.0962	0.9324	2.8100e-003	0.3040	1.9700e-003	0.3059	0.0806	1.8100e-003	0.0824		279.7442	279.7442	6.8400e-003		279.9153
Total	0.1799	1.3638	1.2745	5.7600e-003	0.3784	8.2200e-003	0.3866	0.1021	7.7900e-003	0.1098		592.5042	592.5042	0.0239		593.1025

3.5 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

Monterey Gateway - Bay Area AQMD Air District, Winter

3.5 Building Construction - 2021**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	0.0361	1.1465	0.3081	2.9200e-003	0.0745	2.5500e-003	0.0770	0.0214	2.4400e-003	0.0239		309.7899	309.7899	0.0161		310.1934
Worker	0.1260	0.0859	0.8503	2.7100e-003	0.3040	1.9100e-003	0.3059	0.0806	1.7600e-003	0.0824		269.9286	269.9286	6.1100e-003		270.0813
Total	0.1622	1.2324	1.1584	5.6300e-003	0.3784	4.4600e-003	0.3829	0.1021	4.2000e-003	0.1063		579.7184	579.7184	0.0223		580.2746

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	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	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	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643

Monterey Gateway - Bay Area AQMD Air District, Winter

3.5 Building Construction - 2021**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	0.0361	1.1465	0.3081	2.9200e-003	0.0745	2.5500e-003	0.0770	0.0214	2.4400e-003	0.0239		309.7899	309.7899	0.0161		310.1934
Worker	0.1260	0.0859	0.8503	2.7100e-003	0.3040	1.9100e-003	0.3059	0.0806	1.7600e-003	0.0824		269.9286	269.9286	6.1100e-003		270.0813
Total	0.1622	1.2324	1.1584	5.6300e-003	0.3784	4.4600e-003	0.3829	0.1021	4.2000e-003	0.1063		579.7184	579.7184	0.0223		580.2746

3.5 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

Monterey Gateway - Bay Area AQMD Air District, Winter

3.5 Building Construction - 2022**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	0.0337	1.0855	0.2896	2.8900e-003	0.0745	2.2100e-003	0.0767	0.0214	2.1200e-003	0.0236		306.7228	306.7228	0.0154		307.1082
Worker	0.1176	0.0770	0.7803	2.6100e-003	0.3040	1.8700e-003	0.3058	0.0806	1.7200e-003	0.0823		260.0331	260.0331	5.4700e-003		260.1698
Total	0.1513	1.1625	1.0699	5.5000e-003	0.3784	4.0800e-003	0.3825	0.1021	3.8400e-003	0.1059		566.7559	566.7559	0.0209		567.2780

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	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	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	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322

Monterey Gateway - Bay Area AQMD Air District, Winter

3.5 Building Construction - 2022**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	0.0337	1.0855	0.2896	2.8900e-003	0.0745	2.2100e-003	0.0767	0.0214	2.1200e-003	0.0236		306.7228	306.7228	0.0154		307.1082
Worker	0.1176	0.0770	0.7803	2.6100e-003	0.3040	1.8700e-003	0.3058	0.0806	1.7200e-003	0.0823		260.0331	260.0331	5.4700e-003		260.1698
Total	0.1513	1.1625	1.0699	5.5000e-003	0.3784	4.0800e-003	0.3825	0.1021	3.8400e-003	0.1059		566.7559	566.7559	0.0209		567.2780

3.6 Paving - 2020**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	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926		2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926		2,207.7334	2,207.7334	0.7140		2,225.5841

Monterey Gateway - Bay Area AQMD Air District, Winter

3.6 Paving - 2020**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	0.0552	0.0390	0.3780	1.1400e-003	0.1232	8.0000e-004	0.1240	0.0327	7.4000e-004	0.0334		113.4098	113.4098	2.7700e-003		113.4792
Total	0.0552	0.0390	0.3780	1.1400e-003	0.1232	8.0000e-004	0.1240	0.0327	7.4000e-004	0.0334		113.4098	113.4098	2.7700e-003		113.4792

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	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926	0.0000	2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926	0.0000	2,207.7334	2,207.7334	0.7140		2,225.5841

Monterey Gateway - Bay Area AQMD Air District, Winter

3.6 Paving - 2020**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	0.0552	0.0390	0.3780	1.1400e-003	0.1232	8.0000e-004	0.1240	0.0327	7.4000e-004	0.0334		113.4098	113.4098	2.7700e-003		113.4792
Total	0.0552	0.0390	0.3780	1.1400e-003	0.1232	8.0000e-004	0.1240	0.0327	7.4000e-004	0.0334		113.4098	113.4098	2.7700e-003		113.4792

3.7 Architectural Coating - 2020**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	4.9924					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	5.2345	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928

Monterey Gateway - Bay Area AQMD Air District, Winter

3.7 Architectural Coating - 2020**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	0.0257	0.0182	0.1764	5.3000e-004	0.0575	3.7000e-004	0.0579	0.0153	3.4000e-004	0.0156		52.9246	52.9246	1.2900e-003		52.9569
Total	0.0257	0.0182	0.1764	5.3000e-004	0.0575	3.7000e-004	0.0579	0.0153	3.4000e-004	0.0156		52.9246	52.9246	1.2900e-003		52.9569

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	4.9924					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	5.2345	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928

Monterey Gateway - Bay Area AQMD Air District, Winter

3.7 Architectural Coating - 2020**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	0.0257	0.0182	0.1764	5.3000e-004	0.0575	3.7000e-004	0.0579	0.0153	3.4000e-004	0.0156		52.9246	52.9246	1.2900e-003		52.9569
Total	0.0257	0.0182	0.1764	5.3000e-004	0.0575	3.7000e-004	0.0579	0.0153	3.4000e-004	0.0156		52.9246	52.9246	1.2900e-003		52.9569

3.7 Architectural Coating - 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					
Archit. Coating	4.9924					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	5.2113	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309

Monterey Gateway - Bay Area AQMD Air District, Winter

3.7 Architectural Coating - 2021**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	0.0238	0.0163	0.1609	5.1000e-004	0.0575	3.6000e-004	0.0579	0.0153	3.3000e-004	0.0156		51.0676	51.0676	1.1600e-003		51.0965
Total	0.0238	0.0163	0.1609	5.1000e-004	0.0575	3.6000e-004	0.0579	0.0153	3.3000e-004	0.0156		51.0676	51.0676	1.1600e-003		51.0965

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	4.9924					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	5.2113	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309

Monterey Gateway - Bay Area AQMD Air District, Winter

3.7 Architectural Coating - 2021**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	0.0238	0.0163	0.1609	5.1000e-004	0.0575	3.6000e-004	0.0579	0.0153	3.3000e-004	0.0156		51.0676	51.0676	1.1600e-003		51.0965
Total	0.0238	0.0163	0.1609	5.1000e-004	0.0575	3.6000e-004	0.0579	0.0153	3.3000e-004	0.0156		51.0676	51.0676	1.1600e-003		51.0965

3.7 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	4.9924					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	5.1969	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062

Monterey Gateway - Bay Area AQMD Air District, Winter

3.7 Architectural Coating - 2022**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	0.0223	0.0146	0.1476	4.9000e-004	0.0575	3.5000e-004	0.0579	0.0153	3.3000e-004	0.0156		49.1954	49.1954	1.0300e-003		49.2213
Total	0.0223	0.0146	0.1476	4.9000e-004	0.0575	3.5000e-004	0.0579	0.0153	3.3000e-004	0.0156		49.1954	49.1954	1.0300e-003		49.2213

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	4.9924					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	5.1969	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062

Monterey Gateway - Bay Area AQMD Air District, Winter

3.7 Architectural Coating - 2022**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	0.0223	0.0146	0.1476	4.9000e-004	0.0575	3.5000e-004	0.0579	0.0153	3.3000e-004	0.0156		49.1954	49.1954	1.0300e-003		49.2213
Total	0.0223	0.0146	0.1476	4.9000e-004	0.0575	3.5000e-004	0.0579	0.0153	3.3000e-004	0.0156		49.1954	49.1954	1.0300e-003		49.2213

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

Increase Transit Accessibility

Improve Pedestrian Network

Monterey Gateway - Bay Area AQMD Air District, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	1.2252	5.4714	13.9621	0.0475	4.3991	0.0397	4.4388	1.1769	0.0371	1.2140		4,804.9576	4,804.9576	0.1788		4,809.4269
Unmitigated	1.2787	5.8088	15.2144	0.0533	4.9876	0.0443	5.0319	1.3343	0.0414	1.3757		5,394.5890	5,394.5890	0.1949		5,399.4616

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	933.04	933.04	933.04	2,154,951	1,900,667
Regional Shopping Center	110.00	110.00	110.00	192,866	170,108
Total	1,043.04	1,043.04	1,043.04	2,347,818	2,070,775

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749
Regional Shopping Center	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749

Monterey Gateway - Bay Area AQMD Air District, Winter

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

Kilowatt Hours of Renewable Electricity Generated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.0459	0.3926	0.1677	2.5100e-003		0.0317	0.0317		0.0317	0.0317		501.0207	501.0207	9.6000e-003	9.1900e-003	503.9980
NaturalGas Unmitigated	0.0459	0.3926	0.1677	2.5100e-003		0.0317	0.0317		0.0317	0.0317		501.0207	501.0207	9.6000e-003	9.1900e-003	503.9980

Monterey Gateway - Bay Area AQMD Air District, Winter

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					
Regional Shopping Center	15.9178	1.7000e-004	1.5600e-003	1.3100e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004		1.8727	1.8727	4.0000e-005	3.0000e-005	1.8838
Single Family Housing	4242.76	0.0458	0.3910	0.1664	2.5000e-003		0.0316	0.0316		0.0316	0.0316		499.1480	499.1480	9.5700e-003	9.1500e-003	502.1142
Total		0.0459	0.3926	0.1677	2.5100e-003		0.0317	0.0317		0.0317	0.0317		501.0207	501.0207	9.6100e-003	9.1800e-003	503.9980

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					
Regional Shopping Center	0.0159178	1.7000e-004	1.5600e-003	1.3100e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004		1.8727	1.8727	4.0000e-005	3.0000e-005	1.8838
Single Family Housing	4.24276	0.0458	0.3910	0.1664	2.5000e-003		0.0316	0.0316		0.0316	0.0316		499.1480	499.1480	9.5700e-003	9.1500e-003	502.1142
Total		0.0459	0.3926	0.1677	2.5100e-003		0.0317	0.0317		0.0317	0.0317		501.0207	501.0207	9.6100e-003	9.1800e-003	503.9980

6.0 Area Detail**6.1 Mitigation Measures Area**

Monterey Gateway - Bay Area AQMD Air District, Winter

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	4.9278	0.0961	8.3348	4.4000e-004		0.0461	0.0461		0.0461	0.0461	0.0000	15.0046	15.0046	0.0144	0.0000	15.3653
Unmitigated	109.5959	2.1114	143.7040	0.2554		19.1880	19.1880		19.1880	19.1880	2,058.212 2	638.8281	2,697.040 3	2.5593	0.1452	2,804.303 4

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	0.7112					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.9654					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	104.6681	2.0153	135.3692	0.2549		19.1419	19.1419		19.1419	19.1419	2,058.212 2	623.8235	2,682.035 7	2.5449	0.1452	2,788.938 1
Landscaping	0.2511	0.0961	8.3348	4.4000e-004		0.0461	0.0461		0.0461	0.0461		15.0046	15.0046	0.0144		15.3653
Total	109.5958	2.1114	143.7040	0.2554		19.1880	19.1880		19.1880	19.1880	2,058.212 2	638.8281	2,697.040 3	2.5593	0.1452	2,804.303 4

Monterey Gateway - Bay Area AQMD Air District, Winter

6.2 Area by SubCategory**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	0.7112					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.9654					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	0.2511	0.0961	8.3348	4.4000e-004		0.0461	0.0461		0.0461	0.0461		15.0046	15.0046	0.0144		15.3653
Total	4.9278	0.0961	8.3348	4.4000e-004		0.0461	0.0461		0.0461	0.0461	0.0000	15.0046	15.0046	0.0144	0.0000	15.3653

7.0 Water Detail**7.1 Mitigation Measures Water**

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail**8.1 Mitigation Measures Waste**

Monterey Gateway - Bay Area AQMD Air District, Winter

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

Monterey Gateway
Bay Area AQMD Air District, 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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
Grading	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	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
Air Compressors	Diesel	No Change	0	1	No Change	0.00
Excavators	Diesel	No Change	0	4	No Change	0.00
Concrete/Industrial Saws	Diesel	No Change	0	1	No Change	0.00
Cranes	Diesel	No Change	0	1	No Change	0.00
Forklifts	Diesel	No Change	0	3	No Change	0.00
Graders	Diesel	No Change	0	1	No Change	0.00
Pavers	Diesel	No Change	0	2	No Change	0.00
Rollers	Diesel	No Change	0	2	No Change	0.00
Rubber Tired Dozers	Diesel	No Change	0	6	No Change	0.00
Tractors/Loaders/Backhoes	Diesel	No Change	0	10	No Change	0.00
Generator Sets	Diesel	No Change	0	1	No Change	0.00
Paving Equipment	Diesel	No Change	0	2	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	5.54700E-002	3.84680E-001	4.72250E-001	7.70000E-004	2.31800E-002	2.31800E-002	0.00000E+000	6.63846E+001	6.63846E+001	4.47000E-003	0.00000E+000	6.64965E+001
Concrete/Industrial Saws	2.09000E-003	1.64900E-002	1.84300E-002	3.00000E-005	9.90000E-004	9.90000E-004	0.00000E+000	2.68828E+000	2.68828E+000	1.70000E-004	0.00000E+000	2.69254E+000
Cranes	9.05400E-002	1.04477E+000	4.43960E-001	1.31000E-003	4.28500E-002	3.94200E-002	0.00000E+000	1.15324E+002	1.15324E+002	3.73000E-002	0.00000E+000	1.16256E+002
Excavators	9.80000E-003	9.65100E-002	1.30710E-001	2.10000E-004	4.67000E-003	4.30000E-003	0.00000E+000	1.81480E+001	1.81480E+001	5.87000E-003	0.00000E+000	1.82947E+001
Forklifts	9.62200E-002	8.83100E-001	9.06720E-001	1.19000E-003	6.12000E-002	5.63000E-002	0.00000E+000	1.04747E+002	1.04747E+002	3.38800E-002	0.00000E+000	1.05594E+002
Generator Sets	9.04800E-002	8.01200E-001	9.57360E-001	1.71000E-003	4.17000E-002	4.17000E-002	0.00000E+000	1.46954E+002	1.46954E+002	7.32000E-003	0.00000E+000	1.47137E+002
Graders	1.19000E-002	1.58140E-001	4.53600E-002	1.70000E-004	5.06000E-003	4.65000E-003	0.00000E+000	1.45766E+001	1.45766E+001	4.71000E-003	0.00000E+000	1.46945E+001
Pavers	5.25000E-003	5.62100E-002	5.79700E-002	9.00000E-005	2.73000E-003	2.51000E-003	0.00000E+000	8.26032E+000	8.26032E+000	2.67000E-003	0.00000E+000	8.32711E+000
Paving Equipment	4.15000E-003	4.28300E-002	5.06900E-002	8.00000E-005	2.14000E-003	1.97000E-003	0.00000E+000	7.15820E+000	7.15820E+000	2.32000E-003	0.00000E+000	7.21608E+000
Rollers	4.16000E-003	4.16200E-002	3.78700E-002	5.00000E-005	2.65000E-003	2.44000E-003	0.00000E+000	4.60970E+000	4.60970E+000	1.49000E-003	0.00000E+000	4.64698E+000
Rubber Tired Dozers	7.01700E-002	7.36600E-001	2.68550E-001	5.50000E-004	3.60700E-002	3.31900E-002	0.00000E+000	4.87859E+001	4.87859E+001	1.57800E-002	0.00000E+000	4.91804E+001
Tractors/Loaders/Backhoes	1.46120E-001	1.47918E+000	1.79895E+000	2.48000E-003	8.60400E-002	7.91600E-002	0.00000E+000	2.17768E+002	2.17768E+002	7.04300E-002	0.00000E+000	2.19529E+002
Welders	7.63800E-002	3.88090E-001	4.45050E-001	6.60000E-004	1.83100E-002	1.83100E-002	0.00000E+000	4.89374E+001	4.89374E+001	6.20000E-003	0.00000E+000	4.90924E+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	5.54700E-002	3.84680E-001	4.72250E-001	7.70000E-004	2.31800E-002	2.31800E-002	0.00000E+000	6.63845E+001	6.63845E+001	4.47000E-003	0.00000E+000	6.64964E+001
Concrete/Industrial Saws	2.09000E-003	1.64900E-002	1.84300E-002	3.00000E-005	9.90000E-004	9.90000E-004	0.00000E+000	2.68828E+000	2.68828E+000	1.70000E-004	0.00000E+000	2.69254E+000
Cranes	9.05400E-002	1.04476E+000	4.43960E-001	1.31000E-003	4.28500E-002	3.94200E-002	0.00000E+000	1.15324E+002	1.15324E+002	3.73000E-002	0.00000E+000	1.16256E+002
Excavators	9.80000E-003	9.65100E-002	1.30710E-001	2.10000E-004	4.67000E-003	4.30000E-003	0.00000E+000	1.81480E+001	1.81480E+001	5.87000E-003	0.00000E+000	1.82947E+001
Forklifts	9.62200E-002	8.83100E-001	9.06720E-001	1.19000E-003	6.12000E-002	5.63000E-002	0.00000E+000	1.04747E+002	1.04747E+002	3.38800E-002	0.00000E+000	1.05594E+002
Generator Sets	9.04800E-002	8.01200E-001	9.57360E-001	1.71000E-003	4.17000E-002	4.17000E-002	0.00000E+000	1.46954E+002	1.46954E+002	7.32000E-003	0.00000E+000	1.47137E+002
Graders	1.19000E-002	1.58140E-001	4.53600E-002	1.70000E-004	5.06000E-003	4.65000E-003	0.00000E+000	1.45766E+001	1.45766E+001	4.71000E-003	0.00000E+000	1.46945E+001
Pavers	5.25000E-003	5.62100E-002	5.79700E-002	9.00000E-005	2.73000E-003	2.51000E-003	0.00000E+000	8.26031E+000	8.26031E+000	2.67000E-003	0.00000E+000	8.32710E+000
Paving Equipment	4.15000E-003	4.28300E-002	5.06900E-002	8.00000E-005	2.14000E-003	1.97000E-003	0.00000E+000	7.15819E+000	7.15819E+000	2.32000E-003	0.00000E+000	7.21607E+000
Rollers	4.16000E-003	4.16200E-002	3.78700E-002	5.00000E-005	2.65000E-003	2.44000E-003	0.00000E+000	4.60970E+000	4.60970E+000	1.49000E-003	0.00000E+000	4.64697E+000
Rubber Tired Dozers	7.01700E-002	7.36600E-001	2.68550E-001	5.50000E-004	3.60700E-002	3.31900E-002	0.00000E+000	4.87859E+001	4.87859E+001	1.57800E-002	0.00000E+000	4.91803E+001
Tractors/Loaders/Balckhoes	1.46120E-001	1.47917E+000	1.79895E+000	2.48000E-003	8.60400E-002	7.91600E-002	0.00000E+000	2.17768E+002	2.17768E+002	7.04300E-002	0.00000E+000	2.19528E+002
Welders	7.63800E-002	3.88090E-001	4.45050E-001	6.60000E-004	1.83100E-002	1.83100E-002	0.00000E+000	4.89373E+001	4.89373E+001	6.20000E-003	0.00000E+000	4.90923E+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	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.20510E-006	1.20510E-006	0.00000E+000	0.00000E+000	1.20307E-006
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
Cranes	0.00000E+000	9.57148E-006	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.12726E-006	1.12726E-006	0.00000E+000	0.00000E+000	1.20423E-006
Excavators	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.10205E-006	1.10205E-006	0.00000E+000	0.00000E+000	1.09321E-006
Forklifts	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.14562E-006	1.14562E-006	0.00000E+000	0.00000E+000	1.23113E-006
Generator Sets	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.22487E-006	1.22487E-006	0.00000E+000	0.00000E+000	1.15539E-006
Graders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	6.86031E-007	6.86031E-007	0.00000E+000	0.00000E+000	6.80528E-007
Pavers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.21061E-006	1.21061E-006	0.00000E+000	0.00000E+000	1.20090E-006
Paving Equipment	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.39700E-006	1.39700E-006	0.00000E+000	0.00000E+000	1.38579E-006
Rollers	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	2.15194E-006
Rubber Tired Dozers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.22986E-006	1.22986E-006	0.00000E+000	0.00000E+000	1.22000E-006
Tractors/Loaders/Balckhoes	0.00000E+000	6.76050E-006	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.19393E-006	1.19393E-006	0.00000E+000	0.00000E+000	1.18436E-006
Welders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.02171E-006	1.02171E-006	0.00000E+000	0.00000E+000	1.22219E-006

Fugitive Dust Mitigation

Yes/No	Mitigation Measure	Mitigation Input	Mitigation Input	Mitigation Input
No	Soil Stabilizer for unpaved Roads	PM10 Reduction	PM2.5 Reduction	
No	Replace Ground Cover of Area Disturbed	PM10 Reduction	PM2.5 Reduction	
No	Water Exposed Area	PM10 Reduction	PM2.5 Reduction	Frequency (per day)

No	Unpaved Road Mitigation	Moisture Content %		Vehicle Speed (mph)	0.00		
No	Clean Paved Road	% PM Reduction	0.00				

Phase	Source	Unmitigated		Mitigated		Percent Reduction	
		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	0.01	0.00	0.01	0.00	0.00	0.00
Building Construction	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Roads	0.09	0.03	0.09	0.03	0.00	0.00
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
Grading	Fugitive Dust	0.15	0.08	0.15	0.08	0.00	0.00
Grading	Roads	0.02	0.01	0.02	0.01	0.00	0.00
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	0.00	0.00
Site Preparation	Fugitive Dust	0.18	0.10	0.18	0.10	0.00	0.00
Site Preparation	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00	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	0.02	0.02	0.00	0.00	0.02
Hearth	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Landscaping	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	4.11	5.67	8.58	10.93	10.34	10.28	0.00	10.89	10.89	8.51	0.00	10.89
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	20.00	15.98	17.03	19.99	19.81	18.40
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: Suburban Center

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	0.00	0.16		
No	Land Use	Improve Walkability Design	0.00			
No	Land Use	Improve Destination Accessibility	0.00			
Yes	Land Use	Increase Transit Accessibility	0.11	0.40		
No	Land Use	Integrate Below Market Rate Housing	0.00			
	Land Use	Land Use SubTotal	0.10			

Yes	Neighborhood Enhancements	Improve Pedestrian Network	2.00	Project Site and Connecting Off-Site		
No	Neighborhood Enhancements	Provide Traffic Calming Measures				
No	Neighborhood Enhancements	Implement NEV Network	0.00			
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.02			
No	Parking Policy Pricing	Limit Parking Supply	0.00			
No	Parking Policy Pricing	Unbundle Parking Costs	0.00			
No	Parking Policy Pricing	On-street Market Pricing	0.00			
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00			
No	Transit Improvements	Provide BRT System	0.00			
No	Transit Improvements	Expand Transit Network	0.00			
No	Transit Improvements	Increase Transit Frequency	0.00			
	Transit Improvements	Transit Improvements Subtotal	0.00			
		Land Use and Site Enhancement Subtotal	0.12			
No	Commute	Implement Trip Reduction Program				
No	Commute	Transit Subsidy				
No	Commute	Implement Employee Parking "Cash Out"	4.50			
No	Commute	Workplace Parking Charge				
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00			
No	Commute	Market Commute Trip Reduction Option	0.00			
No	Commute	Employee Vanpool/Shuttle	0.00		2.00	
No	Commute	Provide Ride Sharing Program	10.00			
	Commute	Commute Subtotal	0.00			

No	School Trip	Implement School Bus Program	0.00			
		Total VMT Reduction	0.12			

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
No	Only Natural Gas Hearth	
Yes	No Hearth	
No	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	100.00
No	Use Low VOC Paint (Residential Exterior)	150.00
No	Use Low VOC Paint (Non-residential Interior)	100.00
No	Use Low VOC Paint (Non-residential Exterior)	150.00
No	Use Low VOC Paint (Parking)	150.00
No	% Electric Lawnmower	0.00
No	% Electric Leafblower	0.00
No	% Electric Chainsaw	0.00

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Exceed Title 24		
Yes	Install High Efficiency Lighting	0.00	
Yes	On-site Renewable	202.00	0.00

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00
DishWasher		15.00
Fan		50.00
Refrigerator		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
No	Use Reclaimed Water	0.00	0.00
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	
No	Turf Reduction	0.00	
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 Percent Reduction in Waste Disposed	
--	--

Appendix B

Biological Assessment

Preliminary Biological Assessment

18110 Monterey Road

Morgan Hill, CALIFORNIA



December 12, 2019

Prepared by:

Johnson Marigot Consulting, LLC
Ms. Haley Henderson
433 Visitacion Ave.
Brisbane, California

On behalf of:

City Ventures
Mr. Jason Bernstein
444 Spear Street, Suite 200
San Francisco, California



PRELIMINARY BIOLOGICAL ASSESSMENT

18110 MONTEREY ROAD

CONTENTS

Section 1.	Introduction.....	4
Section 2.	Methodology.....	4
Section 3.	Existing Site Conditions	5
3.1	Land Cover Types.....	5
3.1.1	Ruderal grassland.....	5
3.1.2	Developed – Ornamental Woodland.....	6
3.1.3	Developed - Rural Residential.....	6
3.2	Potential Waters of the U.S./State.....	7
3.3	Soils.....	7
3.3.1	Pleasanton loam, 0 to 2 Percent Slopes, MLRA 14.....	7
3.3.2	San Ysidro loam, 0 to 2 Percent Slopes, MLRA 14.....	7
3.4	Hydrology.....	8
Section 4.	Biological Resource Constraints.....	8
4.1	Special Status Species.....	8
4.2	Plants.....	8
4.2.1	Trees.....	9
4.3	Wildlife.....	9
4.3.1	State and Federally Listed Wildlife.....	9
4.3.2	Nesting Birds.....	15
4.3.3	Wildlife Corridors.....	15
4.4	Waters of the U.S./State.....	15
4.5	Other Constraints.....	16
4.5.1	Local, State, and Federal Plans.....	16
Section 5.	Conclusions and Recommendations.....	17
Section 6.	Literature Cited	18

Figures

- Figure 1. 18110 Monterey Rd. Area Site Map
- Figure 2. SCVHP Land Use Categories
- Figure 3. Land Cover Types of the 18110 Monterey Rd. Area
- Figure 4. 18110 Monterey Rd. Area Soil Map
- Figure 5. Special-Status Plant Species Known to Occur in the Vicinity of 18110 Monterey Rd.
- Figure 6. Special-Status Wildlife Species Known to Occur in the Vicinity of 18110 Monterey Rd.
- Figure 7. Critical Habitat in the Vicinity of 18110 Monterey Rd.

Tables

- Table 1. Plants Observed within the Surveyed Portions of 18110 Monterey Rd.
- Table 2. Special-Status Plant Species Known to Occur in the Vicinity of 18110 Monterey Rd.
- Table 3. Special-Status Wildlife Species Known to Occur in the Vicinity of 18110 Monterey Rd.

Attachments

- Attachment 1. Proposed Project Development
- Attachment 2. Site Photos
- Attachment 3. NRCS Soils Report
- Attachment 4. Petition to State of California for Listing of Bumble Bees
- Attachment 5. Conditions of Santa Clara Valley Habitat Plan
- Attachment 6. Historic Aerials
- Attachment 7. Swainson's Hawk Survey Protocol

SECTION 1.INTRODUCTION

Johnson Marigot Consulting, LLC (JMC) has been retained to provide a biological constraints analysis for approximately 5.7-acres within the county of Santa Clara, California (Assessor's Parcel Numbers; 726-25-006). The proposed project site is located in the city of Morgan Hill to the north east of the intersection of Monterey Rd and Old Monterey Rd (Figure 1). It is within the coverage area of the Santa Clara Valley Habitat Plan. The purpose of this report is to qualitatively identify potential occurrences and/or habitat for special-status plant and wildlife species on the site, and to identify local, state, and/or federal biological constraints and ordinances applicable to the development of the site. The site is proposed for residential development within the entirety of the parcel boundary (See Attachment 1), and as such, is presumed to include site grading and compaction with removal of existing vegetation within the entirety of the parcel boundaries. The site is located entirely within the Planning Limit of Urban Growth for the City of Morgan Hill, as defined in the SCVHP (Figure 2).

SECTION 2.METHODOLOGY

A literature review was conducted for special-status species known to occur in the vicinity of 18110 Monterey Rd. In addition to a literature review, the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDDB) and the California Native Plant Society (CNPS) Inventory of Rare, Threatened, and Endangered Plants of California were queried for occurrences of special-status species in the vicinity of the site. A list of these special-status species has been compiled in table 2, which also discusses listing/ranking status, required habitat components, proximity of records to 18110 Monterey Rd, and probability of occurrence within the site.

Additional research was conducted to identify local, state, and federal natural resource ordinances and laws that would be applicable to the development of 18110 Monterey Rd; these ordinance and laws are discussed below. It should be noted however, that although some local entitlement requirements are addressed below (e.g. The Santa Clara Valley Habitat Plan), this report does not provide summary of all local entitlement requirements.

On August 19th, 2019 JMC personnel Mr. Cameron Johnson and Ms. Haley Henderson conducted a site visit to evaluate biological resources present on site. An additional site visit was conducted by Mr. Johnson on November 17, 2019.

Site assessment included a reconnaissance level survey of the accessible portions of 18110 Monterey Rd. to characterize vegetation, topography, and current and historic uses of the site (as well as the surrounding properties), and to investigate potential presence of waters of the U.S./State. Observations made during site visits were used to determine the potential for the site to provide suitable habitat for special-status species (presence of habitat components necessary to support the species) and sensitive habitats.

SECTION 3. EXISTING SITE CONDITIONS

The approximately 5.7-acre property is comprised of a single parcel and is located within the city limits of Morgan Hill, Santa Clara County, California (the approximate center of the site is 37.139256°N, 121.6632727°W) (Figure 1). The roughly triangular site is located northeast of the intersection of Monterey Rd and Old Monterey Rd, and extends south past an unmarked dirt road (Figure 1). The southern property line is not clearly marked at the boundary between 18110 Monterey Rd and 18060 Monterey Rd, with the latter property being bounded by Granada St to the south. Monterey Rd runs north to south along the western edge of the property. A railroad track property intersects with Monterey Rd and runs along the eastern boundary of the site. Overall, the site is relatively flat in the center, but elevated relative to Monterey Rd. At the time of the August 19 site visit, the vast majority of the property had been recently disced for (presumably hay) agricultural production, or for fuels reduction (i.e. removal for fire risk); the follow-on site visit (November 17), the site was in a similar condition – largely disced with no evidence of artificial irrigation, and no noticeable vegetation growth since the August visit. Review of available aerial photography indicates that this has been the land practice since at least 1998 (see Historic Aerial Photographs in Attachment 6). The site was therefore largely devoid of vegetation and appeared to have been levelled (See Attachment 2).

3.1 LAND COVER TYPES

The majority of the site is ruderal, it is a highly disturbed site supporting non-native plant species that thrive with disturbance. Along the east and west edges of the site, a band of well-established trees is present. Numerous ornamental trees are planted surrounding a small homestead near the southern edge of the site (Figure 3).

3.1.1 RUDERAL GRASSLAND

Due to the timing of the site visit, in August, the majority of herbaceous cover was dried and unidentifiable. The primary identifiable vegetation was Bermuda grass (*Cynodon dactylon*). A few other invasive and non-native plants were also present such as Common mustard (*Brassica rapa*) and Field bindweed (*Convolvulus arvensis*). In the very center of the dried field a few small patches of native Milkweed (*Asclepias fascicularis*) indicating that more native plants may exist on the site during the wet months of the year. This habitat occupies the majority of the northern portion of the site, is bisected by the homestead, and covers the southern portion. This area was likely considered to be California annual grassland historically, but currently meets the definition of "Irrigated Agriculture - grain, row-crop, hay and pasture, disked/short-term fallowed" within the context of the Santa Clara Valley Habitat Plan. Note that the SCVHP includes the following within the description;

"Fallow fields include fields that were not in production at the time aerial photos and/or site visits were conducted, but may be utilized for grain, row-crops, and hay and pasture in subsequent years. This land cover type includes ruderal areas that had been left fallow for several growing seasons. Ruderal sites may be dominated by

weeds such as black mustard or thistles."

The SCVHP indicates that this habitat type may constitute habitat components for covered species including tricolored blackbird (*Agelaius tricolor*), western burrowing owl (*Athene cunicularia*), San Joaquin kit fox (*Vulpes macrotis*), California tiger salamander (*Ambystoma californiense*), California red-legged frog (*Rana aurora*), western pond turtle (*Actinemys marmorata*), or Bay checkerspot butterfly (*Euphydryas editha bayensis*). None of these species were observed, however California ground squirrel (*Spermophilus beecheyi*) burrows were found during the November 17 site visit (not present during the previous site visit in August); burrows represent potential nest sites for western burrowing owls.

3.1.2 DEVELOPED – ORNAMENTAL WOODLAND

Large established trees run the length of the site along Monterey Rd. and along the railroad property. The property line runs directly through a number of the trees and a portion are outside of the site boundary. Many of these trees are native oaks (*Quercus agrifolia*, *Q. lobata*) and smaller native shrubs such as coyote brush (*Baccharis pilularis*) can be found underneath. A number of the trees are non-native, such as Black locust (*Robinia pseudoacacia*) and Red oak (*Quercus rubra*). Similar to the Ruderal Grassland described above, these areas were likely historically described as California annual grasslands, but currently meet the definition of "Developed - ornamental woodland" within the context of the SCVHP. The SCVHP identifies this habitat type is suitable for many wildlife species including, American robin (*Turdus migratorius*), mockingbird (*Mimus polyglottos*), American crow (*Corvus brachyrhynchos*), and European house sparrow (*Passer domesticus*). The SCVHP also indicates the potential for lizards and woodrats. Birds identified during the site visits included American Crow, scrub jay (*Aphelocoma californica*) and rock dove (*Columba livia*). Other wildlife noted included racoon (*Procyon lotor*) (dead along railroad track), and ground squirrel (burrows noted during November site visit).

3.1.3 DEVELOPED - RURAL RESIDENTIAL

Close to the homestead on the southern portion of the site, numerous ornamental and cultivated trees are present. English walnut (*Juglans regia*), Olive (*Olea europea*) and Common fig (*Ficus carica*) tree have likely been planted by residents of the property over the years. This area will likely support more cultivated species during the growing season.

THE SCVHP identifies several species that may be found in rural residential areas including;

"Species such as California red-legged frog, western pond turtle, western burrowing owl, tricolored blackbird, or San Joaquin kit fox may move through rural residential land cover if it occurs adjacent to or near open space. Bay checkerspot butterfly will move through rural residential areas to disperse between patches of serpentine grassland."

None of these species were identified during the site visits (see further discussion below regarding potential to occur).

3.2 POTENTIAL WATERS OF THE U.S./STATE

No potential waters of the U.S were identified during the site visit. No trenches or indentations that could hold seasonal waters were identified. As previously noted, the majority of the site had been recently disced and levelled, therefore it is unlikely that typical hydrology indicators of wetlands would form. The disced portion of the site is bounded on the edges by slightly raised topography along the western boundary, and the railroad track property along the eastern boundary. A single drainage culvert was found to exist at the extreme northern end of the property. This culvert is not within the property boundary, and does not appear to be draining the property (it is topographically elevated compared to the site); it drains the immediately adjacent railroad property, and conveys stormwater directly to a City storm drain (see Attachment 2 – Site Photos). Aerial photo survey indicates the presence of a seasonally-inundated retention basin (aka Butterfield Retention Basin) of approximately 6-ac, located on the property located north of the railroad tracks. This feature appears to hold water for some limited duration each winter, and appears to have been constructed sometime between 1998 and 2003. Evaluation of the project site did not indicate any hydrologic connectivity between the site and the Butterfield Retention Basin. The site is separated by the railroad tracks which are elevated on a constructed berm, and there does not appear to be any other connectivity via culvert or other conveyance structure between the two sites.

Given the site topography of the site (levelled flat), and the lack of clay soils (see below), it is unlikely that wetland conditions exist at the site, however, a site visit during the wet (winter) season could definitively demonstrate the lack of hydrology. If the site continues to be maintained with routine disking, the likelihood that it would be able to support jurisdictionally significant waters is negligible.

3.3 SOILS

According to the Natural Resource Conservation Service, two soil units, or types, have been mapped within the 18110 Monterey Rd: Pleasanton loam, 0 to 2 Percent Slopes, Major Land Resource Area (MLRA) 14; San Ysidro loam, 0 to 2 Percent Slopes, Major Land Resource Area (MLRA) 14. All soils information can be found through the U.S. Department of Agriculture Natural Resources Conservation Service (See Attachment 3).

3.3.1 PLEASANTON LOAM, 0 TO 2 PERCENT SLOPES, MLRA 14

Pleasanton Loam is found extensively on alluvial fans and flood plains. They are well drained and often mildly sloped. It is not subject to flooding and the water table has a depth of more than 80 inches. This soil type dominates the site. This soil type is a Nonhydryc classification, meaning that no major or minor components listed for a given map unit are rated as hydryc.

3.3.2 SAN YSIDRO LOAM, 0 TO 2 PERCENT SLOPES, MLRA 14

San Ysidro Loam occurs on gently sloping alluvial fans. They are slow to drain and often crack when dried. It is not subject to flooding and the water table has a depth of more than 80 inches. This soil type is only found at the northern tip of the site. This soil type is a Predominantly

Nonhydric classification, meaning that no major component listed for a given map unit is rated as hydric and at least one contrasting minor component is rated hydric.

3.4 HYDROLOGY

The property at 18110 Monterey Rd. primarily derives its hydrology from direct precipitation. There is no evidence of run off, ponding, or adjacent water features that impact the site. As previously noted, the majority of the site had been recently disced and levelled potentially for agricultural production. No Primary or Secondary hydrology indicators were observed.

SECTION 4. BIOLOGICAL RESOURCE CONSTRAINTS

4.1 SPECIAL STATUS SPECIES

No special-status species were found during the site surveys of August 19, and November 17, 2019. Special-status species include those considered to be rare by state and federal resource agencies (CDFW and the United States Fish and Wildlife Service [USFWS]) and/or the scientific community (CNPS), and are accordingly legally protected via local, state, and/or federal law. For purposes of this assessment, special-status species are defined as plants or animals protected pursuant to:

1. Federal Endangered Species Act (FESA),
2. State Endangered Species Act (CESA),
3. California Fish and Game Codes that protect nesting birds (Section 3503), raptors (Section 3503.5), and "fully protected species" (Sections 3511, 4700, 5050, and 5515)
4. Migratory Bird Treaty Act,
5. CNPS "rare" designation - all of the plants constituting California Rare Plant Rank 1A, 1B, and 2 meet the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 of the CESA of the California Department of Fish and Game Code, and are eligible for state listing (CNPS Inventory, 6th Edition, 2001), and/or
6. CDFW "species of special concern" (SSC) designation.

For a brief description of all special-status wildlife known to occur in the vicinity of 18110 Monterey Rd, see the attached Special-Status Plant/Wildlife Species Known to Occur in the Vicinity of the 18110 Monterey Rd. (Tables 2 and 3).

4.2 PLANTS

According to the CNDDDB and the CNPS Inventory of Rare, Threatened, and Endangered Plants of California, a total of fourteen special-status plant species have been documented within the same U.S. Geological Survey (USGS) 7.5' topographic quadrangle (Morgan Hill), and eleven have been documented within three miles of 18110 Monterey Rd. (Figure 5). Of the fourteen species identified, eleven of these require serpentine soils, which do not exist on the site; these include Big-scale balsamroot (*Balsamorhiza macrolepis*), Tiburon paintbrush (*Castilleja affinis*

var. neglecta), coyote ceanothus (*Ceanothus ferrisiae*), dwarf soaproot (*Chlorogalum pomeridianum var. minus*), Mt. Hamilton fountain thistle (*Cirsium fontinale var. campylon*), Santa Clara Valley dudleya (*Dudleya abramsii ssp. setchellii*), fragrant fritillary (*Fritillaria liliacea*), smooth lessingia (*Lessingia micradenia var. glabrata*), woodland woollythreads (*Monolopia gracilis*), Metcalf Canyon jewelflower (*Streptanthus albidus ssp. albidus*), and Most beautiful jewelflower (*Streptanthus albidus ssp. Peramoenus*). Additionally, San Francisco collinsia (*Collinsia multicolor*), Arcuate bush-mallow (*Malacothamnus arcuatus*), and Hall's Bush Mallow (*Malacothamnus Hallii*) grow in Coastal sage scrub and Foothill Woodland chaparral (Table 2), which is not present on the site.

Given the level of disturbance and historic and on-going land management, none of these species are likely to occur on the site, and rare plant surveys will not be required.

MITIGATION MEASURES (Rare Plants): None

4.2.1 TREES

Pursuant to the Morgan Hill Heritage or Landmark Tree Ordinance, the removal trees that have been designated as "significant" requires a permit. Indigenous trees measuring 18 inches at a height of 4.5ft, and any street tree is defined as a "significant" tree. According to an arborist report of the site (Horticultural Associates, Meserve 2018) multiple surveyed trees meet this definition and would therefore require permitting for removal.

MITIGATION MEASURES (Trees): Project must comply with City Ordinance

4.3 WILDLIFE

4.3.1 STATE AND FEDERALLY LISTED WILDLIFE

No special-status wildlife has been recorded within 18110 Monterey Rd, and the August 2019 survey did not identify any evidence of special-status wildlife species. Records for nine special-status wildlife species (animals, birds and invertebrates) are documented within three miles of the site (Figure 6). These include California tiger salamander (*Ambystoma californiense*), California red-legged frog (*Rana draytonii*), western pond turtle (*Emys marmorata*), coast horned lizard (*Phrynosoma coronatum*), burrowing owl (*Athene cunicularia*), white-tailed kite (*Elanus leucurus*), American badger (*Taxidea taxus*), San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), and Bay checkerspot butterfly (*Euphydryas editha bayensis*).

Three of these species require specialized habitats that do not occur within the site, including presence of ponding water, that is not found on or around the site (California tiger salamander, California red-legged frog, and western pond turtle). Aerial photo survey indicates the presence of a seasonally-inundated retention basin (a.k.a. Butterfield Retention

Basin) of approximately 6-ac, located on the property located north of the railroad tracks. This feature appears to hold water for some limited duration each winter, and appears to have been constructed sometime between 1998 and 2003. The retention basin dries on an annual basis, and is unlikely to represent habitat for red-legged frog, California tiger salamander, or western pond turtles due to the fact that the site was surrounded by urban development at the time of its construction. The Butterfield Retention Basin, similar to the study site, is unlikely to have colonization of by these species because it is effectively isolated from existing known populations of these species (there are no habitat corridors to existing populations). Additionally, small terrestrial animals such as these species would likely find the railroad tracks that separate the site from the retention basin to represent a barrier to emigration (to the subject property). Development of the project site is not expected to result in any effect to California tiger salamander, California red-legged frog, of western pond turtle.

The Bay checkerspot butterfly is found in association with serpentine soils and the host plants *Plantago spp.*, and *Castilleja spp.* The site contains neither the correct soils, nor any evidence of the host plants. Development of the project site is not expected to result in any effect to Bay checkerspot butterfly.

An historic record (1894) for the coast horned lizard (*Phrynosoma coronatum*) (now referred to as Blainville's horned lizard [*P. blainvillii*]) occurs in the "vicinity of Morgan Hill." This is the only record for this species within 7 miles of the project site, with other modern records (1994-2009) occurring in the undeveloped areas surrounding Morgan Hill. Due to the long-term, extensive development surrounding the project site, this species is not expected to occur onsite. Development of the project site is not expected to result in any effect to coast horned lizard.

Two regionally-known special-status species, American badger and San Francisco dusky-footed woodrat are highly unlikely to occur on the site due to a lack of connective corridor to habitat present in the foothills west of Hale Avenue. These two species are not covered under the Santa Clara Valley Habitat Plan, but have a state ranking of vulnerable (American badger) and imperiled (woodrat). During the site survey, there were no noted middens for woodrats; these middens are usually obvious when present and consist of large collections of twigs and wood debris. Middens can range in size from approximately 3 cubic feet to approximately 1 cubic yard (27 cubic feet), and are typically located at the base of trees or shrubs. Similarly, there was no evidence of badgers on the site (no burrows or dens that could be utilized by this species), and documentation of regular site discing that would prevent establishment of den sites, and effectively reduce prey base. Further, neither San Francisco dusky footed woodrat, nor American badger is likely to emigrate to the site due to lack of habitat connectivity and proximity to development (i.e., the site is completely surrounded by urban development and has no natural corridors to existing habitat). Development of the project site is not expected to result in any effect to either American badger or San Francisco dusky-footed woodrat.

The two bird species identified by the CNDDB both have the potential to nest at the site. The

verified presence of small mammal burrows during the November site visit constitutes potential nesting habitat for western burrowing owl, and the onsite trees represent potential nesting structure for white-tail kites. The closest documented occurrence for white-tailed kite is just outside the three-mile special-status species radius; burrowing owls have been documented within 3-miles (See Figure 6).

Onsite trees may represent potential nesting habitat for white-tailed kites, and the majority of the site may represent potential foraging habitat. "Condition 1 – Avoid Direct Impacts on Legally Protected Plant and Wildlife Species" within the SCVHP includes white-tailed kites. The SCVHP does not include specific survey requirements for this species, however the California Department of Fish & Wildlife recommend Preconstruction Surveys for nesting white-tailed kites should be conducted using the following protocol:

"If construction activities occur between February 1 and August 31, the applicant will conduct surveys for Swainson's hawk and white tailed kite in accordance with the Swainson's Hawk Technical Advisory Committee 2000 guidelines (SHTAC 2000), or current guidance. Surveys will cover a minimum of a 0.5-mile radius around the construction area. If nesting Swainson's hawks or white tailed kites are detected, CDFW will establish a 0.5 mile no disturbance buffer. Buffers will be maintained until a qualified CDFW biologist has determined that the young have fledged and are no longer reliant upon the nest or parental care for survival.

If potential nesting trees are to be removed during construction activities, removal will take place outside of Swainson's hawk and white tailed kite nesting season and CDFW will develop a plan to replace known nest trees at a ratio of 3:1. If replacement planting is implemented, monitoring will be conducted annually for 5 years to assess the mitigation's effectiveness. The performance standard for the mitigation will be 65% survival of all replacement plantings."

Potential nest trees will include those trees with current (at the time of the surveys), or documented historic use by white-tailed kites, for nesting. The Swainson's Hawk Technical Advisory Committee additionally defines "survey periods", and recommends that survey efforts occur at least two survey periods prior to the initiation of the proposed project (See Attachment 7).

The site is not identified in the SCVHP as "Occupied Nesting Burrowing Owl Habitat", "Potential Burrowing Owl Nesting/Overwintering Habitat Depending on Site Conditions", or "Overwintering Only Habitat" (See Figure 5-11 in the SCVHP), however it should be considered to represent "Potential Burrowing Owl Nesting/Overwintering Habitat Depending of Site-Specific Conditions," based on the site assessment. As such, protocol-level survey is not required by the SCVHP, and the only requirement is for a Preconstruction Survey (Outlined in Condition 15, in Chapter 6 of the SCVHP). This survey includes the following:

"Prior to any ground disturbance related to covered activities, a qualified biologist will conduct preconstruction surveys in all suitable habitat areas as identified during habitat surveys. The purpose of the preconstruction surveys is to document the presence or absence of burrowing owls on the project site, particularly in areas within

250 feet of construction activity.

To maximize the likelihood of detecting owls, the preconstruction survey will last a minimum of three hours. The survey will begin 1 hour before sunrise and continue until 2 hours after sunrise (3 hours total) or begin 2 hours before sunset and continue until 1 hour after sunset. Additional time may be required for large project sites. A minimum of two surveys will be conducted (if owls are detected on the first survey, a second survey is not needed). All owls observed will be counted and their location will be mapped.

Surveys will conclude no more than 2 calendar days prior to construction. Therefore, the project proponent must begin surveys no more than 4 days prior to construction (2 days of surveying plus up to 2 days between surveys and construction). To avoid last minute changes in schedule or contracting that may occur if burrowing owls are found, the project proponent may also conduct a preliminary survey up to 14 days before construction. This preliminary survey may count as the first of the two required surveys as long as the second survey concludes no more than 2 calendar days in advance of construction."

If preconstruction surveys find that the site is occupied by Western burrowing owls, then Avoidance Measures must be implemented pursuant to the SCVHP. These include the establishment of an avoidance and minimization plan, approval by the implementing Agency and the Wildlife agencies, and onsite biological monitoring. In some cases, the project may be approved for relocation of onsite burrowing owls.

In addition, although not documented by the CNDDDB, there exists the potential for two additional special-status bird species; Swainson's hawk (*Buteo swainsonii*), and tricolored blackbird (*Agelaius tricolor*). Onsite trees represent potential nest sites for Swainson's hawk, while tricolored blackbirds may encounter nesting habitat at the property located northward of the railroad tracks (Butterfield retention basin), and may forage at the project site. As such, in the absence of preconstruction nesting-bird surveys, the presence of nesting special-status birds including burrowing owls, white-tailed kite, Swainson's hawk, and foraging tricolored blackbirds cannot be ruled out.

The initial survey of the site has found that portions of the northern end of the site are within 250-feet of the Butterfield retention basin, which represents potential nesting substrate, and therefore there is the potential for the project to effect tri-colored blackbirds. The SCVHP requires a Preconstruction Survey for any project that cannot avoid work within the 250-ft buffer zone (Outlined in Condition 17, in Chapter 6 of the SCVHP) and included the following:

"If the project proponent chooses not to avoid the potential nesting habitat and the 250-foot buffer, additional nesting surveys are required. Prior to any ground disturbance related to covered activities, a qualified biologist will: 1. Make his/her best effort to determine if there has been nesting at the site in the past 5 years. This includes

checking the CNDDDB, contacting local experts, and looking for evidence of historical nesting (i.e., old nests). 2. If no nesting in the past 5 years is evident, conduct a preconstruction survey in areas identified in the habitat survey as supporting potential tricolored blackbird nesting habitat. Surveys will be made at the appropriate times of year when nesting use is expected to occur. The surveys will document the presence or absence of nesting colonies of tricolored blackbird. Surveys will conclude no more than two calendar days prior to construction.

To avoid last minute changes in schedule or contracting that may occur if an active nest is found, the project proponent may also conduct a preliminary survey up to 14 days before construction. If a tricolored blackbird nesting colony is present (through step 1 or 2 above), a 250-foot buffer will be applied from the outer edge of all hydric vegetation associated with the site and the site plus buffer will be avoided (see below for additional avoidance and minimization details). The Wildlife Agencies will be notified immediately of nest locations. "

If preconstruction surveys find that the site is within 250-ft of a nesting tri-colored blackbird colony, then Avoidance and Minimization Measures must be implemented pursuant to the SCVHP. These include (in most cases) a prohibition of activities within the 250-ft of the outer edge of all hydric vegetation associated with the colony, and implementation of biological monitoring. In some cases, the buffer zone may be adjusted by the Wildlife Agencies or the Implementing Entity.

Onsite trees may represent potential nesting habitat for Swainson's hawk, and the majority of the site may represent potential foraging habitat. The SCVHP does not include specific survey requirements for this species, however the California Department of Fish & Wildlife recommend Preconstruction Surveys for nesting Swainson's Hawk should be conducted using the following protocol:

"If construction activities occur between February 1 and August 31, the applicant will conduct surveys for Swainson's hawk and white tailed kite in accordance with the Swainson's Hawk Technical Advisory Committee 2000 guidelines (SHTAC 2000), or current guidance. Surveys will cover a minimum of a 0.5-mile radius around the construction area. If nesting Swainson's hawks or white tailed kites are detected, CDFW will establish a 0.5 mile no disturbance buffer. Buffers will be maintained until a qualified CDFW biologist has determined that the young have fledged and are no longer reliant upon the nest or parental care for survival.

If potential nesting trees are to be removed during construction activities, removal will take place outside of Swainson's hawk and white tailed kite nesting season and CDFW will develop a plan to replace known nest trees at a ratio of 3:1. If replacement planting is implemented, monitoring will be conducted annually for 5 years to assess the mitigation's effectiveness. The performance standard for the mitigation will be 65% survival of all replacement plantings."

Potential nest trees will include those trees with current (at the time of the surveys), or documented historic use by Swainson's hawks, for nesting. The Swainson's Hawk Technical

Advisory Committee additionally defines “survey periods”, and recommends that survey efforts occur at least two survey periods prior to the initiation of the proposed project (See Attachment 7).

Two species of bumble bees that may occur regionally have been petitioned to be added to the California Endangered Species Act and are currently under consideration by the California Department of Fish & Wildlife (Attachment 4); these are the crotch bumble bee (*Bombus crotchii*), and the Western bumble bee (*Bombus occidentalis*). Neither species currently has State listing status, but are included in this analysis in the event that the listing request is granted. Both species have colonial nests in underground cavities, and are unlikely to occur on the site due to current management practices (routine and regular discing). Discing has the effect of removing potential flowering plants required as a food source to these species, as well as regularly disturbing upper horizons of soils (i.e., not conducive to supporting underground cavities). Neither species has been recorded on the California Natural Diversity Database within 3-miles, however either may occur regionally. The site does not represent habitat for either species due to lack of underground nesting opportunities and lack of flowering plants; development of the site is not expected to result in any effect to these species and further survey is not necessary.

The site is not within Critical Habitat for any listed wildlife species (Figure 7).

MITIGATION MEASURES (California tiger salamander): None

MITIGATION MEASURES (California red-legged frog): None

MITIGATION MEASURES (Western pond turtle): None

MITIGATION MEASURES (Bay checkerspot butterfly): None

MITIGATION MEASURES (coast horned lizard): None

MITIGATION MEASURES (American badger): None

MITIGATION MEASURES (San Francisco dusky-footed woodrat): None

MITIGATION MEASURES (white-tailed kite): Preconstruction survey per Swainson’s Hawk Technical Advisory Committee 2000 guidelines

MITIGATION MEASURES (Western burrowing owl): Preconstruction survey per SCVHP

MITIGATION MEASURES (red-winged blackbird): Preconstruction survey per SCVHP

MITIGATION MEASURES (Swainson’s hawk): Preconstruction survey per Swainson’s Hawk Technical Advisory Committee 2000 guidelines

MITIGATION MEASURES (crotch bumble bee): none

MITIGATION MEASURES (Western bumble bee): none

MITIGATION MEASURES (critical habitat): none

4.3.2 NESTING BIRDS

The trees and grassland/herbaceous habitats that occur within and adjacent to 18110 Monterey Rd. provide suitable nesting habitat for many species of passerine (perching) birds and raptors (birds of prey). No nests were observed in the trees, however owing to the mobile nature of birds and the seasonality of their nesting cycle, and in light of the presence of abundant suitable nesting habitat onsite, it is likely that birds will nest within the site during future nesting seasons. In the absence of preconstruction surveys for nesting birds, development-related impacts to nesting birds cannot be ruled out. If project-related activities associated with the development of the site were to commence during the bird nesting season (generally taken to mean February 1 through August 31), preconstruction nesting bird surveys would be required. These surveys are to include both tree-, and ground nesting species. Active nests found during surveys will either be avoided completely (to the conclusion of nesting), or will trigger appropriate avoidance strategy development with the City of Morgan Hill, California Department of Fish & Wildlife, or the SCVHP managers. Strategies typically include establishment of appropriate buffer zones (vary by species) and biological monitoring by a qualified biologist. Preconstruction survey for nesting raptors should be conducted as outlined for Western Burrowing owl, white-tailed kite, and Swainson's hawk (above). In addition, preconstruction survey for nesting passerines should occur within two-weeks (14 days) of initiation of project-related activities (rough grading).

MITIGATION MEASURES (Nesting Birds): Preconstruction survey 14 days prior to initiation of project activities

4.3.3 WILDLIFE CORRIDORS

The project site is located in the city of Morgan Hill to the north east of the intersection of Monterey Rd and Old Monterey Rd (Figure 1). It is roughly triangular in shape and is bounded on the west by Monterey Road, to the south by existing residential development, and to the east by a railroad corridor. West of Monterey road is residential development, and eastward of the railroad is the greater developed city of Morgan Hill. The site is 100% surrounded by developed properties and is not crossed by any waterways or greenways, nor does it abut any open space or reserve. As such, the development of the site is not expected to result in any effect to existing wildlife corridors (as none exist).

MITIGATION MEASURES (Wildlife Corridors): none

4.4 WATERS OF THE U.S./STATE

No waters of the U.S. have been identified as defined by the U.S. Army Corps of Engineers, pursuant to the Clean Water Act, the California Department of Fish and Wildlife, or the Regional Water Quality Control Board.

Condition 3 of the SCVHP (outlined in Chapter 6) of the SCVHP requires that projects “Maintain Hydrologic Conditions and Protect Water Quality.” This condition requires projects to comply with NPDES permit requirements and to provide stormwater quality control, and to avoid and minimize effects to local waterways. This includes measures, performance standards, and control measures to minimize increases of peak discharge of stormwater and pollutant discharge to protect water quality, including during project construction. As there are not any on-site waters of the U.S. or State, these measures are intended to protect water quality of stormwater discharged from the site to receiving waters.

MITIGATION MEASURES (Waters of the U.S. / State): The proposed project will comply with NPDES, and SWPPP requirements. There are no jurisdictional waters of the United States or State of California within the project boundaries.

4.5 OTHER CONSTRAINTS

4.5.1 LOCAL, STATE, AND FEDERAL PLANS

4.5.1.1 Santa Clara Valley Habitat Plan

In 2012 the Santa Clara Valley Habitat Plan was adopted. It was developed with the California Department of Fish and Game (CDFG) and U.S. Fish and Wildlife Service (USFWS) to guide permitting decisions in relation to the protection of natural resources. The property at 18110 Monterey Rd. falls within the study area for the Habitat Plan and identified as “Potential Burrowing Owl Nesting/Overwintering Habitat Depending of Site-Specific Conditions.” And requires that avoidance of breeding habitat is required as well as pre-construction surveys. Additionally, the project site is within 250-ft of potential nesting habitat for tri-colored blackbird and must therefore meet the survey and avoidance requirements of the Habitat Plan.

Special status plants surveys are not required because habitat components, including serpentine soils, are absent for species of concern, and the site is routinely disced (there is not any suitable habitat).

Because the project is within the SCVHP area, it will be subject to conditions of the Plan. These conditions are outlined in Chapter 6 of the SCVHP, and are included in Attachment 5 to this report.

4.5.1.3 City of Morgan Hill General Land Use Plan

The property 18110 Monterey Rd. is designated for mixed use/flex by the cities general land use plan. Primary uses of Mixed Use Flex land includes attached homes mixed with retail, office and services, with 7 to 24 units per acre. This plan was adopted in 2016 and a 2017 update maintained the land designation for the parcel in question. Also in 2017, a study of the Monterey corridor was commissioned, the results of which are not yet available and may influence land use in that area.

SECTION 5.CONCLUSIONS AND RECOMMENDATIONS

The majority of 18110 Monterey Rd. is developed or regularly disturbed, but portions of the site retain some potential to provide habitat for special-status wildlife species. Additional site survey is unnecessary for special status plants, as presence of these species are not expected given the lack of habitat, and the routine and regular discing of the site. Rare plant surveys are not required under the existing conditions.

As 18110 Monterey Rd. provides suitable nesting habitat for white-tailed kite (California fully protected species), burrowing owl, and Swainson's hawk, and is within 250-f of potential nesting habitat for tri-colored blackbird. Preconstruction surveys for these species are required. In addition, if work is scheduled to commence during the nesting season (February 1 through August 31), a preconstruction nesting bird survey should be conducted of all suitable nesting habitat prior to the commencement of vegetation removal/ground disturbance. Additionally, burrowing owls may occupy burrows outside of the nesting season and as such, a bird survey should be conducted within 14 days prior to earthwork, even if commencement is outside of the nesting season.

According to the USFWS Environmental Conservation Online System (ECOS) 18110 Monterey Rd. is not within critical habitat for the California Tiger Salamander, California red-legged frog, or Bay checkerspot butterfly (the only designated critical habitat local to Morgan Hill). The proposed project is not expected to affect Critical Habitat.

No jurisdictional waters or wetlands were found on the site.

SECTION 6.LITERATURE CITED

- Alvarez, J.A. 2004. Overwintering California tiger salamander (*Ambystoma californiense*) larvae. *Herpetological Review* 35:344.
- Behler, J.L. and F.W. King. 1979. *The Audubon Society Field Guide to North American Reptiles and Amphibians*. New York: Knopf. 719 pp.
- Black, S. H. and D. M. Vaughan. 2005. Species Profile: *Euphydryas editha bayensis*. In Shepherd, M. D., D. M. Vaughan, and S. H. Black (Eds). *Red List of Pollinator Insects of North America*. CD-ROM Version 1 (May 2005). Portland, OR: The Xerces Society for Invertebrate Conservation.
- Calflora: Information on California plants for education, research and conservation, with data contributed by public and private institutions and individuals, including the Consortium of California Herbaria. [web application]. 2019. Berkeley, California: The Calflora Database [a non-profit organization]. Available: <https://www.calflora.org/> (Accessed: Aug. 20 and Nov. 20, 2019).
- CDFG. 2000. Guidelines for assessing the effects of proposed developments on rare and endangered plants and plant communities. December 9, 1983, revised May 8, 2000.
- _____. 2009. Protocols for surveying and evaluating impacts to special status native plant populations and natural communities. November 2009. 7 pps.
- CDFW. 2018. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities. March 20, 2018.
- California Department of Fish and Wildlife, Natural Diversity Database. (CNDDDB) August 2019.
- CNPS. 2001. Inventory of rare and endangered plants of California (sixth edition). Rare plant scientific advisory committee, David P. Tibor, convening editor. California Native Plant Society. Sacramento, CA. x+338 pps.
- _____. 2018. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society, Sacramento, CA. Available: <http://www.rareplants.cnps.org> [accessed March 2, 2017 and March 20, 2018].

- Greenhouse, Jeffrey, et al. *The Digital Jepson Manual: Vascular Plants of California, Second Edition, Thoroughly Revised and Expanded*. Edited by Bruce G. Baldwin et al., 2nd ed., University of California Press, 2012. *JSTOR*, www.jstor.org/stable/10.1525/j.ctt1pn9sv.
- Jennings, M.R., Hayes, M.P. and D.C. Holland. 1992. A petition to the U.S. Fish and Wildlife Service to place the California Red-legged Frog (*Rana aurora draytonii*) and the Western Pond Turtle (*Clemmys marmorata*) on the list of endangered and threatened wildlife and plants.
- Jepson Flora Project (eds.) 2019. Jepson eFlora, <http://ucjeps.berkeley.edu/eflora/> [accessed August, 2019]
- Loredo, I., D. Van Vuren, and M. Morrison. 1996. Habitat use and migration behavior of the California tiger salamander. *Journal of Herpetology*, 30(2): 282-285.
- Swainson's Hawk Technical Advisory Committee. 2000. Recommended timing and methodology for Swainson's hawk nesting surveys in California's Central Valley.
- USFWS. 1987. Determination of Threatened Status for Bay Checkerspot Butterfly (*Euphydryas editha bayensis*). *Federal Register* 52:35366-35378.
- _____. 1996. Sacramento Fish & Wildlife Office Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants. Prepared September 23, 1996. Endangered Species Information. (http://www.fws.gov/sacramento/es/Survey-Protocols-Guidelines/es_survey.htm)
- _____. 2001. Endangered and Threatened Wildlife and Plants; Final Determinations of Critical Habitat for the California Red-legged Frog; Final Rule. *Federal Register* 66:14626-14674.
- _____. 2005. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the California Tiger Salamander, Central Population: Final rule. *Federal Register* 70:49380-49458.
- _____. 2008. Designation of Critical Habitat for the Bay Checkerspot Butterfly (*Euphydryas editha bayensis*); Final Rule. *Federal Register* 73:50406-50452.

Figures

Figure 1. 18110 Monterey Rd. Area Site Map

Figure 2. SCVHP Land Use Categories

Figure 3. Land Cover Types of the 18110 Monterey Rd Area

Figure 4. 18110 Monterey Rd Soil Map

Figure 5. Special-Status Plant Species Known to Occur in the Vicinity of 18110 Monterey Rd

Figure 6. Special-Status Animal Species Known to Occur in the Vicinity of 18110 Monterey Rd

Figure 7. Critical Habitat in the Vicinity of 18110 Monterey Rd.



JOHNSON MARIGOT CONSULTING, LLC
18110 MONTEREY ROAD

FIGURE #1 - Site and Vicinity

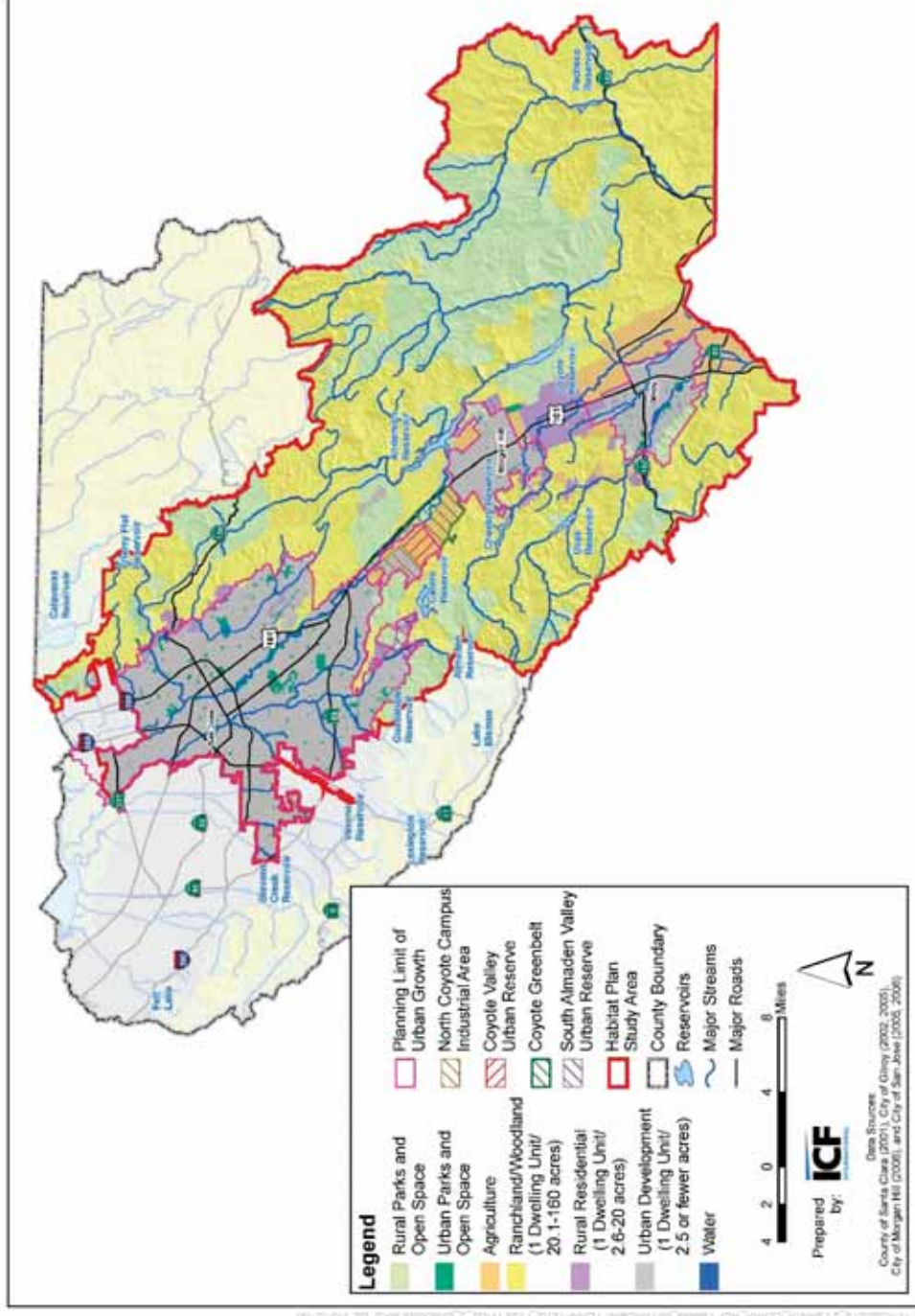


Figure 2-2
Santa Clara Valley Habitat Plan Land Use Categories



JOHNSON MARIGOT CONSULTING, LLC
 18110 MONTEREY ROAD

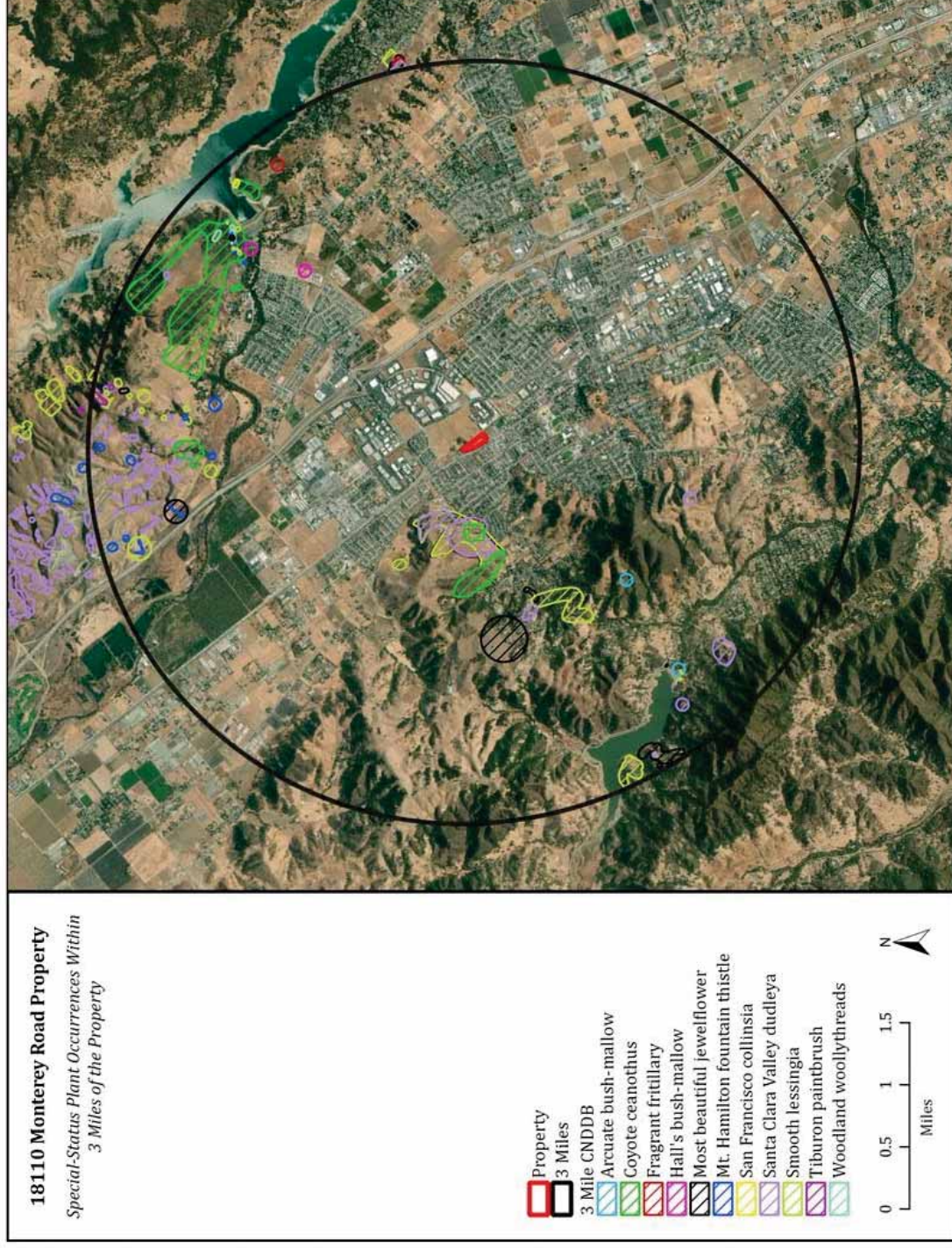
FIGURE #2 - SCVHP Land Use Categories



JOHNSON MARIGOT CONSULTING, LLC
18110 MONTEREY ROAD

FIGURE #3 - Land Cover by Type

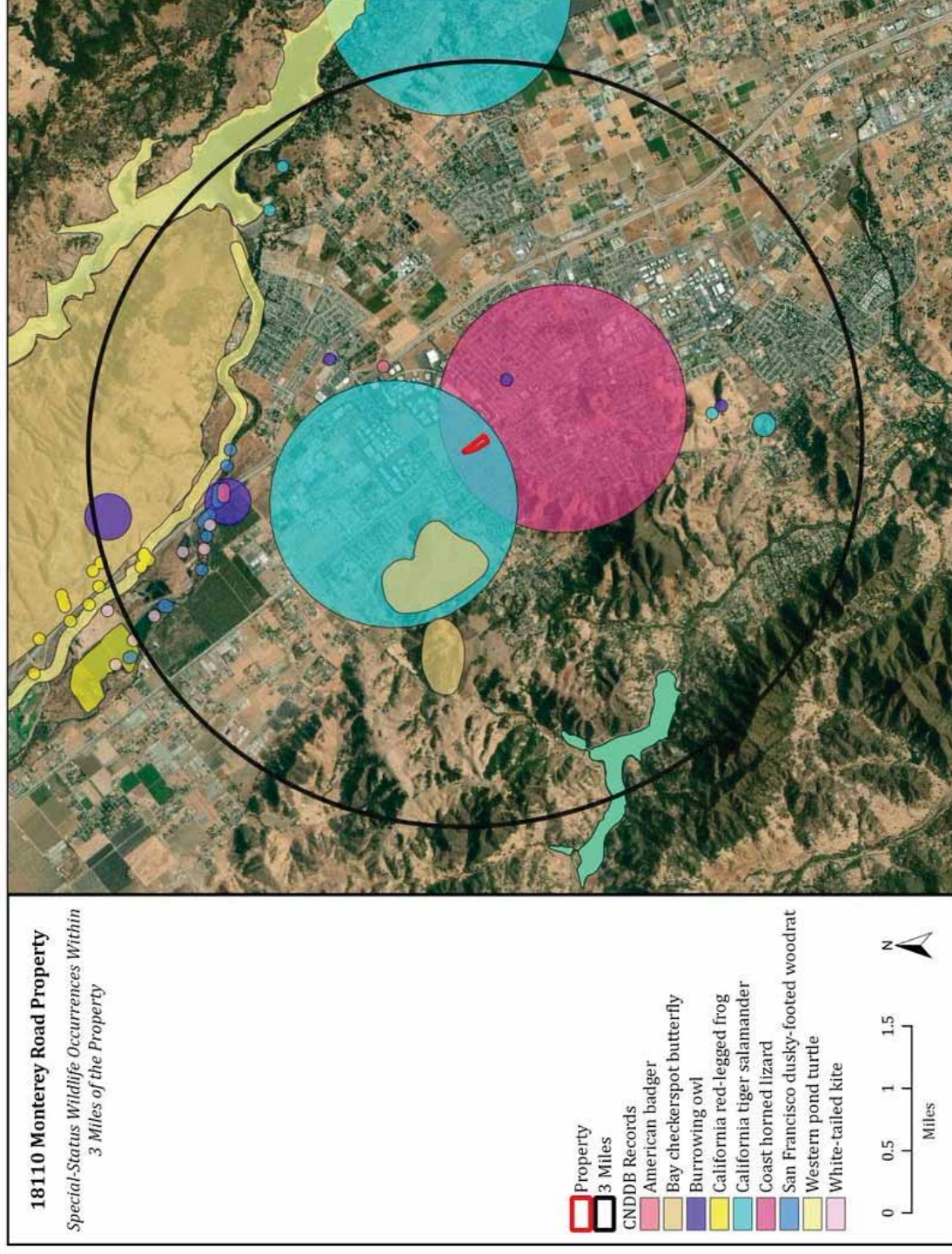




JOHNSON MARIGOT CONSULTING, LLC

18110 MONTEREY ROAD

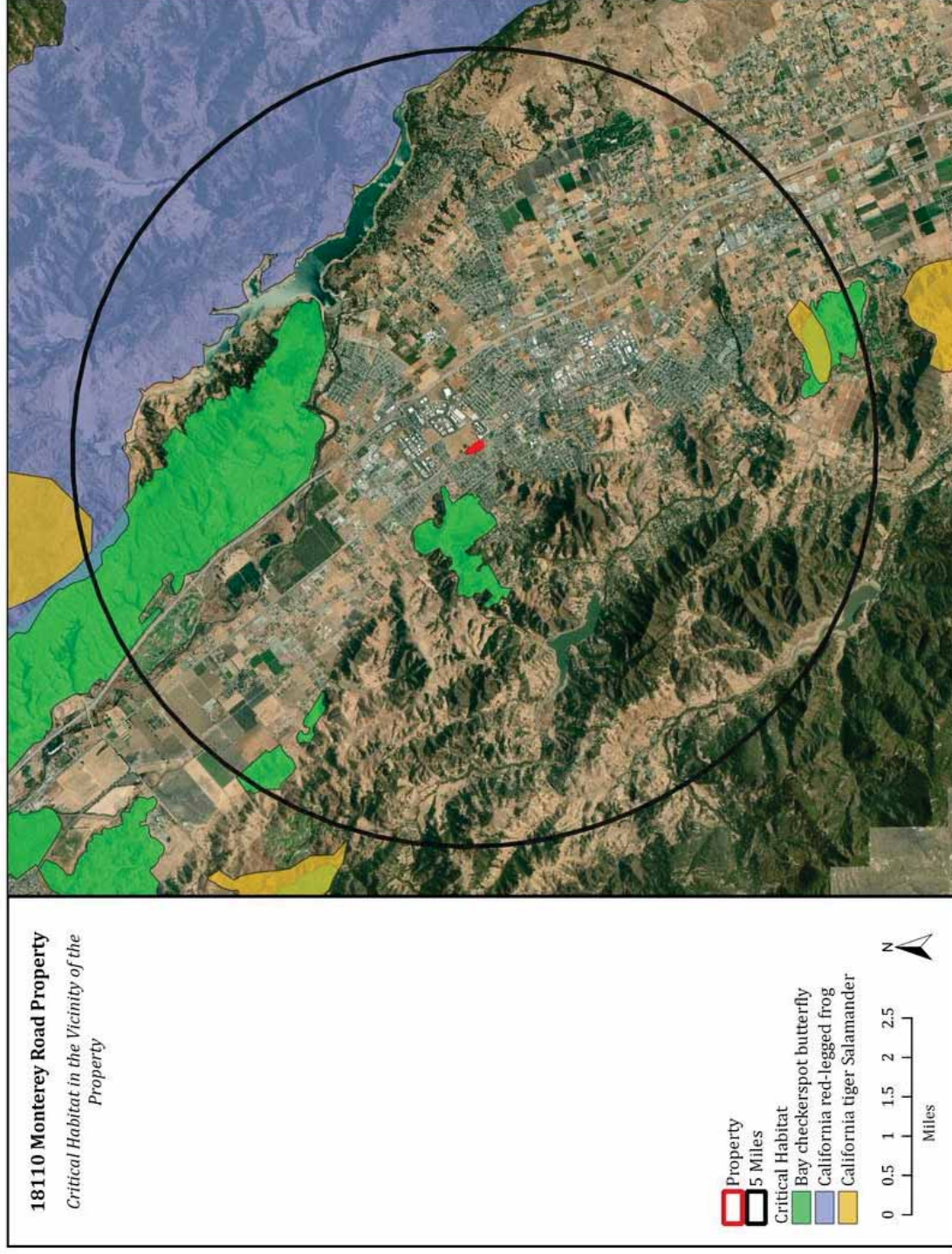
FIGURE #5- California Natural Diversity Database (2019)



JOHNSON MARIGOT CONSULTING, LLC

18110 MONTEREY ROAD

FIGURE #6 - California Natural Diversity Database (2019)



JOHNSON MARIGOT CONSULTING, LLC

18110 MONTEREY ROAD

FIGURE #7 - Critical Habitat Maps (USFWS 2019)

Tables

Table 1. Plants Observed within the Surveyed Portions of 18110 Monterey Rd

Table 2. Special-Status Plant Species Known to Occur in the Vicinity of 18110 Monterey Rd

Table 3. Special-Status Wildlife Species Known to Occur in the Vicinity of the 18110 Monterey Rd

Table 1. Plants Observed within the Surveyed Portions of 18110 Monterey Rd

Scientific Name	Common Name
<i>Alibizia julibrissin</i>	Silktree
<i>Asclepias fascicularis</i>	Milkweed
<i>Avena sativa</i>	Wild oat
<i>Baccharis pilularis</i>	Coyote brush
<i>Brassica rapa</i>	Common mustard
<i>Convolvulus arvensis</i>	Field bindweed
<i>Cynodon dactylon</i>	Bermuda grass
<i>Erodium cicutarium</i>	Red stemmed filaree
<i>Festuca myuris</i>	Rattail sixweeks grass
<i>Ficus carica</i>	Common fig
<i>Fraxinus sp.</i>	Ash
<i>Juglans regia</i>	English walnut
<i>Lactuca serriola</i>	Prickly lettuce
<i>Malva parviflora</i>	Cheeseweed
<i>Nerium oleander</i>	Oleander
<i>Olea europea</i>	Olive
<i>Prunus sp.</i>	Cultivated fruit tree
<i>Quercus agrifolia</i>	Coast live oak
<i>Quercus lobata</i>	Valley oak
<i>Quercus rubra</i>	Red oak
<i>Raphanus sativus</i>	Jointed charlock
<i>Robinia pseudoacacia</i>	Black locust
<i>Rubus armeniacus</i>	Himalayan blackberry
<i>Sambucus nigra</i>	Black elderberry

Table 2. Special-Status Plant Species Known to Occur in the Vicinity of 18110 Monterey Rd

Common Name	Scientific Name	Status	Habitat type	Occurrence information	Probability of occurring on site
Big-scale balsamroot	<i>Balsamorhiza macrolepis</i>	State ranked - S2, CNPS 1B.2	Sometimes serpentine soils in chaparral, cismontane woodland, and valley and foothill grassland.	Three populations in the Coyote lake area.	None. No suitable habitat occurs on or around the site.
Tiburon paintbrush	<i>Castilleja affinis</i> var. <i>neglecta</i>	Federally Endangered, State Threatened, CNPS 1B.2	Serpentine chaparral, valley, and foothill grasslands.	Mapped within Morgan Hill Quad.	None. No suitable habitat occurs on or around the site.
Coyote ceanothus	<i>Ceanothus ferrisiae</i>	Federally endangered, CNPS 1B.1	Serpentine chaparral, valley, and foothill grasslands.	Three populations, the closest less than a mile away on serpentine.	None. No suitable habitat occurs on or around the site.
Dwarf soaproot	<i>Chlorogalum pomeridianum</i> var. <i>minus</i>	CNPS 1B.2	Serpentine chaparral, valley, and foothill grasslands.	Mapped within Morgan Hill Quad.	None. No suitable habitat occurs on or around the site.
Mt. Hamilton fountain thistle	<i>Cirsium fontinale</i> var. <i>campylon</i>	State ranked - S2, CNPS 1B.2	Serpentine seeps. Chaparral, cismontane woodland, and valley and foothill grassland.	Five populations approximately 2.5 miles from the site.	None. No suitable habitat occurs on or around the site.
San Francisco collinsia	<i>Collinsia multicolor</i>	State ranked - S2, CNPS 1B.2	Northern Coastal Scrub, Closed-cone Pine Forest	One population on the shore of Anderson Reservoir.	None. No suitable habitat occurs on or around the site.
Santa Clara Valley dudleya	<i>Dudleya abramsii</i> ssp. <i>setchellii</i>	State ranked - S2, CNPS 1B.1	Valley Grassland, Foothill Woodland	Multiple populations in the area, the closest less than a half mile from the site.	None. No suitable habitat occurs on or around the site. Requires serpentine soils.
Fragrant fritillary	<i>Fritillaria liliacea</i>	CNPS 1B.2	Serpentine chaparral, valley, and foothill grasslands.	Mapped in Quad.	None. No suitable habitat occurs on or around the site.
Smooth lessingia	<i>Lessingia micradenia</i> var. <i>glabrata</i>	State ranked - S2, CNPS 1B.2	Serpentine, often roadsides. Chaparral, Cismontane woodland, and Valley and foothill grassland.	Multiple populations in the area, the closest about a half mile from the site.	None. No suitable habitat occurs on or around the site. Requires serpentine soils.
Arcuate bush-mallow	<i>Malacothamnus arcuatus</i>	State ranked S2, CNPS 1B.2	Coastal Sage Scrub, Foothill Woodland, Chaparral	Three occurrences. Two outside of the city, close to the Chesbro Reservoir. One about two miles away from the site.	None. No suitable habitat occurs on or around the site.
Hall's Bush Mallow	<i>Malacothamnus hallii</i>	CNPS 1B.2	Coastal Sage Scrub, Foothill Woodland, Chaparral	Mapped in Quad.	None. No suitable habitat occurs on or around the site.
Woodland woollythreads	<i>Monolopia gracilens</i>	State ranked - S3, CNPS 1B.2	Sometimes serpentine soils in Mixed Evergreen Forest, Redwood Forest, Chaparral.	One occurrence at Pigeon Point, multiple occurrences just outside of the three mile radius.	None. No suitable habitat occurs on or around the site.
Metcalf Canyon jewelflower	<i>Streptanthus albidus</i> ssp. <i>albidus</i>	State Endangered, CNPS 1B.1	Serpentine chaparral, valley, and foothill grasslands.	Mapped in Quad.	None. No suitable habitat occurs on or around the site.
Most beautiful jewelflower	<i>Streptanthus albidus</i> ssp. <i>peramoenus</i>	State ranked - S2, CNPS 1B.2	Serpentine chaparral, valley, and foothill grasslands.	Less than half mile from site.	None. No suitable habitat occurs on or around the site.

Table 3. Special-Status Wildlife Species Known to Occur in the Vicinity of 18110 Monterey Rd

Common Name	Scientific Name	Status	Habitat type	Occurrence information	Probability of occurring on site
California tiger salamander	<i>Ambystoma californiense</i>	Federally Threatened State Threatened	Grasslands adjacent to seasonal wetlands and ponds	Many occurrences in the greater area. Four within the 3-mile radius. 2.5-miles, 2.8-miles, and 1.8-miles away.	None. There is no known population with the capacity to colonize the site, and no known CTS on or adjacent to the site.
California red-legged frog	<i>Rana draytonii</i>	Federally threatened, State ranked S2S3	Wet areas. Permanent or seasonal, such as ponds, streams, and marshes.	Multiple populations in the area within ponds or creeks.	None. No suitable habitat occurs on or around the site.
Western pond turtle	<i>Emys marmorata</i>	California Species of Concern	A variety of habitats adjacent to permanent or nearly permanent water.	One occurrence near Chesbro Reservoir.	None. There is no known population with the capacity to colonize the site, and no known WPT on or adjacent to the site.
Coast horned lizard	<i>Phrynosoma blainvillii</i>	California Species of Concern	Grasslands, scrublands, oak woodlands. Often found in dry riverbeds	Unclear – “Vicinity of Morgan Hill”	None. There is a single local record that dates to 1894.
White tailed kite	<i>Elanus leucurus</i>	California Protected	Open grasslands and agricultural areas throughout California	Several occurrences recorded within 3-mile radius.	Likely. This species is known to occur throughout the region and onsite trees may represent nesting sites. A preconstruction bird survey should be conducted.
Burrowing owl	<i>Athene cuniculari</i>	State ranked - S3	Grasslands, rangelands and other open dry areas.	Multiple nests in area with the closest being <1 mile from site.	Low. A preconstruction bird survey should be conducted.
Swainson's Hawk	<i>Buteo swainsoni</i>	California Threatened	Found in open (primarily agricultural areas) with low crops, and grasslands. Nests in trees.	None recorded within 3-mile radius. Nesting pair has been reported in Coyote valley.	Low. A preconstruction bird survey should be conducted.
Tricolored blackbird	<i>Agelaius tricolor</i>	California Species of Concern	Colonial nesting species associated with fresh-water emergent marsh.	None recorded within 3-mile radius	Low. Potential for nesting at Butterfield Retention Basin on adjacent property. A preconstruction bird survey should be conducted.
American badger	<i>Taxidea taxus</i>	State ranked - S3	Open grasslands, fields and pastures.	Three occurrences recorded. The closest occurrence is about one mile away.	None. No connectivity to existing habitat. Site is not suitable for burrows.
San Francisco dusky-footed woodrat	<i>Neotoma fuscipes annectens</i>	State ranked - S2S3	Oak woodlands and chaparral.	Two occurrences at coyote creek about 3-miles from the site.	None. No suitable habitat occurs on or around the site.
Bay checkerspot butterfly	<i>Euphydryas editha bayensis</i>	State ranked - S1	Serpentine soils. Host plants are Plantago erecta and Castilleja densiflora or C. exserta	Four populations all north of the city in the vicinity of Coyote Ridge.	None. No suitable habitat occurs on or around the site.
Crotch bumble bee	<i>Bombus crotchii</i>	none	Inhabits open grassland and scrub habitats. This species occurs primarily in California, including the Mediterranean region, Pacific Coast, Western Desert, Great Valley, and adjacent foothills through most of southwestern California. Colonial nests in underground cavities	No known records within 3-miles	None. Site conditions are not suitable for nest colonies.
Western bumble bee	<i>Bombus occidentalis</i>	none	Found throughout in the eastern part of the state in the Sierra-Cascade Range from near Yosemite to Oregon and west along the northern tier of counties into Humboldt County. Colonial nests in underground cavities. Colonial nests in underground cavities	No known records within 3-miles	None. Site conditions are not suitable for nest colonies.

Attachments

Attachment 1. Proposed Project Development - 18110 Monterey Rd

Attachment 2. Site Photos - 18110 Monterey Rd

Attachment 3. NRCS Soils Report - 18110 Monterey Rd

Attachment 4. Petition to State of California for Listing of Bumble Bees

Attachment 5. Conditions of Santa Clara Valley Habitat Plan

Attachment 6. Historic Aerials

Attachment 7. Swainson's Hawk Survey Protocol

Attachment 1. Proposed Project Development - 18110 Monterey Rd



City Ventures

MONTEREY GATEWAY
MORGAN HILL, CA

CITY VENTURES, INC



Architecture | Planning | Interiors

444 Spear Street, Suite 105
San Francisco, CA 94105
www.hunt-hale-jones.com

t. 415-512-1300
f. 415-288-0288

COLOR SITE PLAN

CSP

SCALE: 1" = 40' - 0"

DATE: 10.22.2019

PROJECT: 317053

PROJECT DATA

PROJECT NAME: MONTEREY GATEWAY	
PROJECT ADDRESS: 18110 MONTEREY ROAD MORGAN HILL, CALIFORNIA	
CURRENT ZONING	MIXED USE FLEX (7-24 DU/ACRE)
PROPOSED ZONING	MIXED USE FLEX (7-24 DU/ACRE)
SITE AREA	5.665 AC/246,772 SF
TOTAL DWELLING UNITS	101 UNITS
DENSITY	17.82 DU/A
OCCUPANCY	
RESIDENTIAL	R2/U
COMMERCIAL/LIVE WORK	B/U
CONSTRUCTION TYPE	
RESIDENTIAL	V-B
COMMERCIAL	V-B
ADA*	
SETBACKS	9 ACCESSIBLE UNITS
	ALLOWED PROPOSED
FRONT	MIN: 15 FT MIN: 15 FT
REAR	MIN: 20 FT MIN: 20 FT
INTERIOR SIDE	MIN: 5 FT MIN: 5 FT
STREET SIDE	MIN: 10 FT MIN: 10 FT

PARKING SUMMARY			
RESIDENTIAL			
UNIT TYPE	REQUIREMENT	PROVIDED PER UNIT	NO. OF UNITS
PLAN 1 (2 BED)	2 SPACES PER UNIT	2	10
PLAN 2 (3 BED)	2.5 SPACES PER UNIT	2.5	10
PLAN 3 (3 BED)	2.5 SPACES PER UNIT	2.5	40
PLAN 4 (4 BED)	2.5 SPACES PER UNIT	2.5	100
PLAN 5 (4 BED)	2.5 SPACES PER UNIT	2.5	1
GUEST	1 PER 3 UNITS		101
TOTAL REQUIRED			34
10% REDUCTION PER RDCS DEVIATION STD			282
			254
GARAGE SPACES ON PLAN			
GUEST SPACES ON PLAN			
ADA PARKING FOR GUEST (5% x 34 = 1.7 ~ 2 SPACES)			
TOTAL ON PLAN			254

COMMERCIAL			
TYPE	REQUIRED	REQUIRED	PROVIDED
GENERAL RETAIL - 2423 SQ. FT.	1/250 SQ. FT.		10
OUTDOOR - .49% SQ. FT.	0		0
LIVEWORK - 1044 SQ. FT.	0		0
TOTAL		10	10*

NOTES: * PER TDM BEST PRACTICES, COMMERCIAL PARKING TO BE SHARED WITH RESIDENTIAL GUEST PARKING

PRIVATE OPEN SPACE CALCULATIONS				
UNIT TYPE	DECK	PORCH	MIN. PATIO PER LANDSCAPE	TOTAL PRIVATE OPEN SPACE
PLAN 1	63 SQ. FT.	31 SQ. FT.	64 SQ. FT.	158 SQ. FT.
PLAN 2	80 SQ. FT.	0 SQ. FT.	58 SQ. FT.	138 SQ. FT.
PLAN 2 - END	80 SQ. FT.	0 SQ. FT.	96 SQ. FT.	176 SQ. FT.
PLAN 3	80 SQ. FT.	0 SQ. FT.	54 SQ. FT.	134 SQ. FT.
PLAN 4	80 SQ. FT.	80 SQ. FT.	80 SQ. FT.	240 SQ. FT.
PLAN 4 - END	80 SQ. FT.	80 SQ. FT.	80 SQ. FT.	240 SQ. FT.
PLAN 4 - END PORCH	171 SQ. FT.	170 SQ. FT.	69 SQ. FT.	410 SQ. FT.
PLAN 4 LIVE WORK	181 SQ. FT.	80 SQ. FT.	160 SQ. FT.	320 SQ. FT.
PLAN 5	181 SQ. FT.	0 SQ. FT.	0 SQ. FT.	181 SQ. FT.

BUILDING HEIGHT CHART

MAXIMUM HEIGHT
35' - 0"
45' - 0" WITH A MINIMUM OF 10'-0" DEVOTED TO A ROOF ELEMENT

UNIT SUMMARY & TYPICAL SQ. FT.				
UNIT TYPE	TOTAL UNITS	% UNITS	TOTAL LIVING	DECKS
PLAN 1 - END (2 BD - 2.5 BTH)	10	10%	1190 SF	63 SF
PLAN 2 - INT/END (3 BD - 3 BTH)	10	10%	1489 SF	80 SF
PLAN 3 - INT (3 BD - 3 BTH)	40	40%	1421 SF	80 SF
PLAN 4 - INT (3 BD - 3.5 BTH - 4 BD/OPT)	13	13%	1671 SF	80 SF
PLAN 4 - END (3 BD - 3.5 BTH - 4 BD/OPT)	14	13%	1746 SF	80 SF
PLAN 4 - END PORCH (3 BD - 3.5 BTH - 4 BD/OPT)	9	9%	1746 SF	171 SF
PLAN 4 - LIVE WORK (3 BD - 3.5 BTH - LIVE WORK/OPT BD 4 - 4 BTH)	4	4%	1671 SF	80 SF
PLAN 5 (3 BD - 2.5 BTH - DEN/OPT BD 4 - 4 BTH)	1	1%	2310 SF	181 SF
TOTAL UNIT	101 DU			

BUILDING TYPE SUMMARY		
BUILDING TYPE	NUMBER OF BLDG	UNIT
A (9 UNITS)	1 (BLDG. 1)	9
B (7 UNITS)	2 (BLDG. 2 & 11)	14
C (10 UNITS)	1 (BLDG. 3)	10
D (2 UNITS)	1 (BLDG. 4)	2
E (3 UNITS)	1 (BLDG. 5)	3
F (5 UNITS)	1 (BLDG. 6)	5
G1 (5 UNITS)	1 (BLDG. 8)	5
G2 (5 UNITS)	2 (BLDG. 7 & 15)	10
H (6 UNITS)	1 (BLDG. 9)	6
J (7 UNITS)	1 (BLDG. 10)	7
K (9 UNITS)	2 (BLDG. 12 & 14)	18
L (8 UNITS)	1 (BLDG. 13)	8
M (4 UNITS)	1 (BLDG. 16)	4
TOTAL	16	101

*ADA UNIT ANALYSIS	
PER SECTION 1102A.3.1 OF 2016 CBC, CARRIAGE UNITS ARE EXEMPT FROM BEING CONSIDERED AN ADAPTABLE UNIT.	
CARRIAGE UNITS	10 UNITS
PLAN 1 LOTS 33, 34, 44, 45, 77, 78, 92, 93, 94, 95	10 UNITS
PLAN 2 LOTS 5, 12, 39, 46, 55, 66, 71, 76, 81, 96	20 UNITS
UNIT EXEMPT	
QUALIFYING UNITS 101 - 20 = 81 UNITS	
10% ADA = 8.1 UNITS ~ 9 UNITS	
(SEE SITE PLAN FOR ADA UNIT LOCATION)	

NOTE:
• THIS PROJECT WILL COMPLY WITH ALL APPLICABLE CODES AT THE TIME OF THE BUILDING PERMIT SUBMISSION.



City Ventures

MONTEREY GATEWAY
MORGAN HILL, CA

CITY VENTURES, INC



Architecture | Planning | Interiors

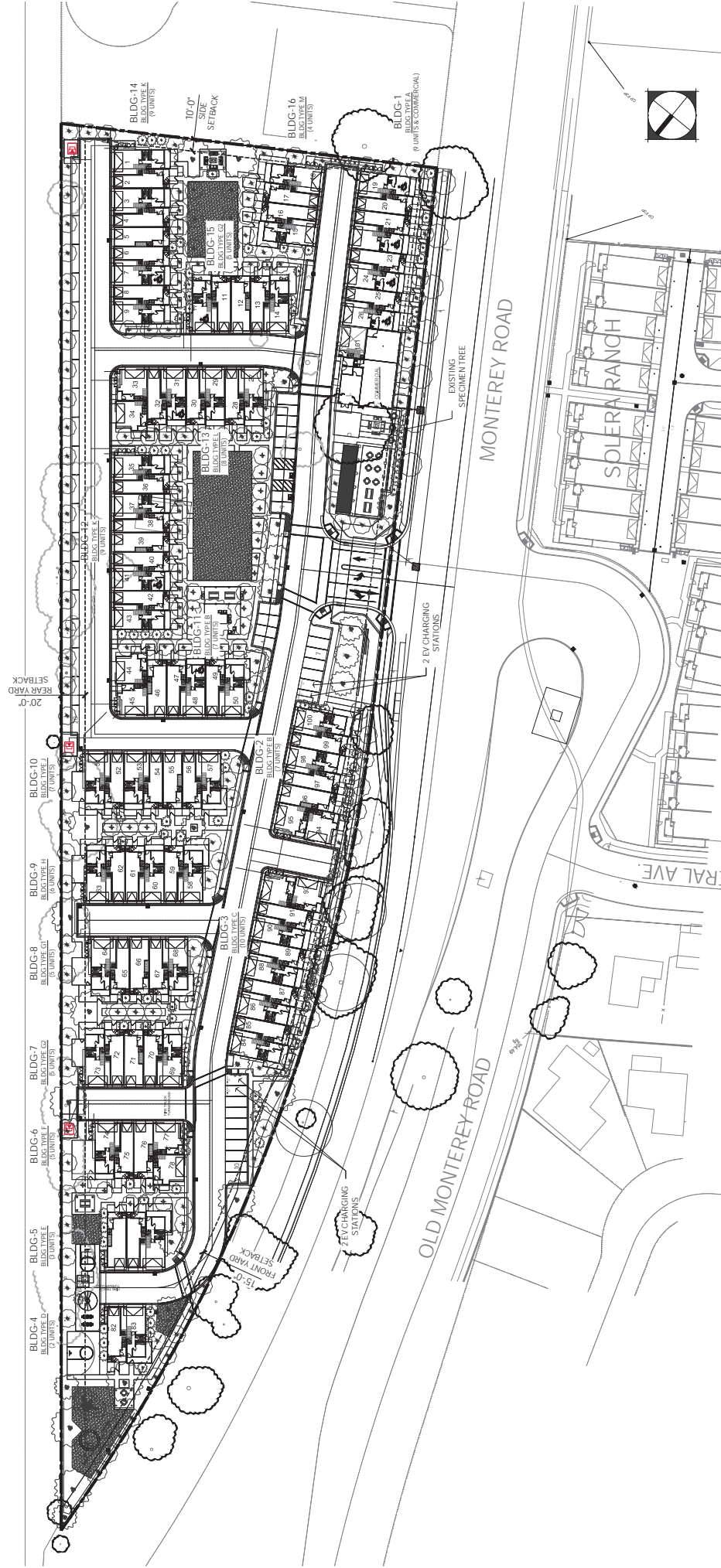
444 Spear Street, Suite 105
San Francisco, CA 94105
www.hunt hale.com

t. 415-512-1300
f. 415-288-0288

PROJECT INFORMATION

PI

SCALE: N.T.S.
DATE: 10.22.2019
PROJECT: 317053



TECHNICAL SITE PLAN
 SP
 SCALE: 1" = 40' - 0"
 DATE: 10.22.2019
 PROJECT: 317053

Architecture | Planning | Interiors
 444 Spear Street, Suite 105
 San Francisco, CA 94105
 www.huntmalejones.com
 t. 415-512-1300
 f. 415-288-0288



MONTEREY GATEWAY
 MORGAN HILL, CA
 CITY VENTURES, INC



Attachment 2. Site Photos - 18110 Monterey Rd

Facing North –
along Monterey
Road



Facing North –
along Monterey
Road



Facing North –
disced field



Facing North –
disced field



Culvert – located north of property.
Not on subject property – drains railroad property



Crosses under railroad track where it discharges to a concrete drop structure



Connects to City Storm Drain



Attachment 3. NRCS Soils Report - 18110 Monterey Rd



United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for Eastern Santa Clara Area, California

18110 Monterrey, Morgan Hill



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

Preface	2
Soil Map	5
Soil Map.....	6
Legend.....	7
Map Unit Legend.....	8
Map Unit Descriptions.....	8
Eastern Santa Clara Area, California.....	10
PoA—Pleasanton loam, 0 to 2 percent slopes, MLRA 14.....	10
SdA—San Ysidro loam, 0 to 2 percent slopes, MLRA 14.....	11
References	14

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Soil Map may not be valid at this scale.

Map Scale: 1:2,720 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
PoA	Pleasanton loam, 0 to 2 percent slopes, MLRA 14	12.8	88.0%
SdA	San Ysidro loam, 0 to 2 percent slopes, MLRA 14	1.7	12.0%
Totals for Area of Interest		14.5	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Eastern Santa Clara Area, California

PoA—Pleasanton loam, 0 to 2 percent slopes, MLRA 14

Map Unit Setting

National map unit symbol: 2x52s

Elevation: 60 to 2,070 feet

Mean annual precipitation: 19 to 44 inches

Mean annual air temperature: 58 to 60 degrees F

Frost-free period: 240 to 320 days

Farmland classification: Prime farmland if irrigated

Map Unit Composition

Pleasanton and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pleasanton

Setting

Landform: Alluvial fans

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium derived from sedimentary rock

Typical profile

Ap - 0 to 5 inches: loam

A - 5 to 18 inches: loam

Bt1 - 18 to 23 inches: clay loam

Bt2 - 23 to 44 inches: fine gravelly clay loam

Bt3 - 44 to 66 inches: fine gravelly sandy clay loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: High (about 9.1 inches)

Interpretive groups

Land capability classification (irrigated): 1

Land capability classification (nonirrigated): 3c

Hydrologic Soil Group: C

Hydric soil rating: No

Minor Components

Hillgate

Percent of map unit: 3 percent

Landform: Terraces

Landform position (three-dimensional): Tread

Custom Soil Resource Report

Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

San ysidro

Percent of map unit: 3 percent
Landform: Terraces, alluvial fans, valley floors
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Arbuckle

Percent of map unit: 3 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Cortina

Percent of map unit: 3 percent
Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Yolo

Percent of map unit: 3 percent
Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

SdA—San Ysidro loam, 0 to 2 percent slopes, MLRA 14

Map Unit Setting

National map unit symbol: 2tyys
Elevation: 70 to 1,990 feet
Mean annual precipitation: 13 to 22 inches
Mean annual air temperature: 59 to 61 degrees F
Frost-free period: 300 to 360 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

San ysidro and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of San Ysidro

Setting

Landform: Terraces, alluvial fans, valley floors
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sedimentary rock

Typical profile

A - 0 to 23 inches: loam
B1 - 23 to 38 inches: clay loam
Bt2 - 38 to 64 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 16 to 24 inches to abrupt textural change
Natural drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: LOAMY CLAYPAN (R014XE029CA)
Hydric soil rating: No

Minor Components

Arbuckle

Percent of map unit: 6 percent
Hydric soil rating: No

Rincon

Percent of map unit: 2 percent
Hydric soil rating: No

Solano

Percent of map unit: 2 percent
Hydric soil rating: No

Pleasanton, loam

Percent of map unit: 2 percent
Hydric soil rating: No

Pescadero

Percent of map unit: 1 percent
Landform: Basin floors
Landform position (two-dimensional): Toeslope

Custom Soil Resource Report

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: Yes

Cropley, clay

Percent of map unit: 1 percent

Hydric soil rating: No

Palexera1fs

Percent of map unit: 1 percent

Landform: Depressions

Hydric soil rating: Yes

References

- American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.
- American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.
- Federal Register. July 13, 1994. Changes in hydric soils of the United States.
- Federal Register. September 18, 2002. Hydric soils of the United States.
- Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.
- National Research Council. 1995. Wetlands: Characteristics and boundaries.
- Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262
- Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577
- Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580
- Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.
- United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.
- United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374
- United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084>

Custom Soil Resource Report

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Attachment 4. Petition to State of California to List Bumble Bees

**A PETITION TO THE STATE OF CALIFORNIA
FISH AND GAME COMMISSION**

For action pursuant to Section 670.1, Title 14, California Code of Regulations (CCR) and Sections 2072 and 2073 of the Fish and Game Code relating to listing and delisting endangered and threatened species of plants and animals.

I. SPECIES BEING PETITIONED:

1. Common Name: Crotch bumble bee
Scientific Name: *Bombus crotchii*
2. Common Name: Franklin's bumble bee
Scientific Name: *Bombus franklini*
3. Common Name: Suckley cuckoo bumble bee
Scientific Name: *Bombus suckleyi*
4. Common Name: Western bumble bee
Scientific Name: *Bombus occidentalis occidentalis*

II. RECOMMENDED ACTION:

1. Common Name: Crotch bumble bee As Endangered X
Scientific Name: *Bombus crotchii*
2. Common Name: Franklin's bumble bee As Endangered X
Scientific Name: *Bombus franklini*
3. Common Name: Suckley cuckoo bumble bee As Endangered X
Scientific Name: *Bombus suckleyi*
4. Common Name: Western bumble bee As Endangered X
Scientific Name: *Bombus occidentalis occidentalis*

III. AUTHOR OF PETITION:

Name: The Xerces Society, including: Rich Hatfield, Sarina Jepsen, Sarah Foltz
Jordan, Michele Blackburn, Aimée Code

Address: 628 NE Broadway, Portland, OR 97232

Phone Number: 503-232-6639

I hereby certify that, to the best of my knowledge, all statements made in this petition are true and complete.

Signature:  *Sarina Jepsen*

Sarah foltz jordan 



Date: 16 October 2018

FGC - 670.1 (3/94)

**A PETITION TO THE STATE OF CALIFORNIA
FISH AND GAME COMMISSION TO LIST**

**The Crotch bumble bee (*Bombus crotchii*), Franklin's bumble bee (*Bombus franklini*),
Suckley cuckoo bumble bee (*Bombus suckleyi*), and western bumble bee (*Bombus
occidentalis occidentalis*) as Endangered under the California Endangered Species Act**



Bombus crotchii, by Stephanie McKnight, the Xerces Society (top left); *Bombus franklini*, by Pete Schroeder (top right); *Bombus occidentalis occidentalis*, by Rich Hatfield, the Xerces Society (bottom left); *Bombus suckleyi*, by Hadel Go/www.discoverlife.org (bottom right).

**Submitted by
The Xerces Society for Invertebrate Conservation, Defenders of Wildlife,
Center for Food Safety**

October 2018

TABLE OF CONTENTS

I. EXECUTIVE SUMMARY	5
II. POPULATION TRENDS, ABUNDANCE, RANGE, AND DISTRIBUTION.....	6
Current Conservation Status	6
Changes in Range, Distribution, and Relative Abundance.....	8
Methods Used	21
Analyses.....	21
III. LIFE HISTORY (SPECIES DESCRIPTION, BIOLOGY, AND ECOLOGY).....	23
Bumble Bee Biology.....	23
Bumble Bee Pollination Ecology.....	23
Crotch bumble bee (<i>Bombus crotchii</i>) Cresson 1878	24
Franklin's bumble bee (<i>Bombus franklini</i>) (Frison, 1921)	25
Western bumble bee (<i>Bombus occidentalis occidentalis</i>) Greene, 1858.....	27
Suckley Cuckoo Bumble Bee (<i>Bombus suckleyi</i>) Greene, 1860	28
IV. KIND OF HABITAT NECESSARY FOR SURVIVAL	30
Habitat Requirements.....	30
Crotch Bumble Bee (<i>Bombus crotchii</i>) Habitat Requirements.....	32
Franklin's Bumble Bee (<i>Bombus franklini</i>) Habitat Requirements.....	33
Western Bumble Bee (<i>Bombus occidentalis occidentalis</i>) Habitat Requirements	33
Suckley Cuckoo Bumble Bee (<i>Bombus suckleyi</i>) Habitat Requirements.....	35
V. FACTORS AFFECTING ABILITY TO SURVIVE AND REPRODUCE.....	37
A. Present or Threatened Modification or Destruction of Habitat.....	37
B. Overexploitation.....	44
C. Competition with Managed Honey Bees	46
D. Disease	47
E. Other Natural Events or Human-related Activities	56
VI. DEGREE AND IMMEDIACY OF THREAT	62
VII. IMPACT OF EXISTING MANAGEMENT EFFORTS	63
Crotch Bumble Bee (<i>Bombus crotchii</i>).....	63
Franklin's bumble bee (<i>Bombus franklini</i>)	63
Western bumble bee (<i>Bombus occidentalis occidentalis</i>)	64
Suckley bumble bee (<i>Bombus suckleyi</i>).....	64
VIII. SUGGESTIONS FOR FUTURE MANAGEMENT	65
General Guidelines for Bumble Bees	65
Creating High-Quality Habitat.....	65

Using Pesticides	68
Commercial Use of Bumble Bees	69
Honey Bees	69
Inventory, Research & Management Needs	71
IX. INADEQUACY OF EXISTING REGULATORY MECHANISMS	73
Disease	73
Pesticide Regulations	76
X. AVAILABILITY AND SOURCES OF INFORMATION	79
Literature Cited	79
Personal Communications	113
XI. DETAILED DISTRIBUTION MAPS.....	114
Crotch bumble bee (<i>Bombus crotchii</i>) Global Distribution.....	114
Franklin’s bumble bee (<i>Bombus franklini</i>) Global Distribution.....	115
Western bumble bee (<i>Bombus occidentalis occidentalis</i>) California Distribution.....	116
Western bumble bee (<i>Bombus occidentalis occidentalis</i>) Global Distribution	117
Suckley Cuckoo Bumble Bee (<i>Bombus suckleyi</i>) California Distribution	118
Suckley Cuckoo Bumble Bee (<i>Bombus suckleyi</i>) Global Distribution.....	119

I. EXECUTIVE SUMMARY

The Crotch bumble bee (*Bombus crotchii*), Franklin’s bumble bee (*Bombus franklini*), Suckley cuckoo bumble bee (*Bombus suckleyi*), and western bumble bee (*Bombus occidentalis occidentalis*) are endangered with extinction throughout their ranges, including in California. Recent research has shown a significant reduction in both the range and relative abundance of these species, and where they still persist, they are far less common than they were historically. **The Crotch bumble bee (*Bombus crotchii*)** was historically common in the southern two-thirds of California, but now appears to be absent from most of it, especially in the center of its historic range (Hatfield et al. 2014; Richardson et al. 2014); analyses suggests sharp declines in both relative abundance (98% decline) and persistence (80% decline) over the last ten years. **Franklin’s bumble bee (*Bombus franklini*)** is in imminent danger of extinction and notably has the most limited geographic distribution of any bumble bee in North America and possibly the world (Williams 1998). Extensive surveys since 1998 have demonstrated that there has been a precipitous decline in the number of individuals and localities in the past several decades; this species has not been seen in California since 1998, and has not been seen anywhere since 2006. The **western bumble bee (*Bombus occidentalis occidentalis*)** has recently undergone a dramatic decline in abundance and distribution, and is no longer present across much of its historic range. Declines suggest it has been lost from 53% of its historic range and has experienced an 84% decline in relative abundance (Hatfield et al., unpublished data); in

California, *B. o. occidentalis* populations are currently largely restricted to high elevation sites in the Sierra Nevada (Xerces Society 2012). The **Suckley cuckoo bumble bee** (*Bombus suckleyi*), relies upon western bumble bees to complete its life cycle, and thus is uniquely susceptible to extinction (Suhonen et al. 2015).

Bumble bees are among the most iconic and well understood group of native pollinators in North America. They are generalist pollinators that play a valuable role in the reproduction of a wide variety of plants, including California specialty crops such as tomato, squash, melon, and pepper, and numerous wildflowers. Pollinators are critical components of our environment and essential to our food security. Insects – and primarily bees – provide the indispensable service of pollination to more than 85% of flowering plants (Ollerton et al. 2011), contributing to 35% of global food production (Klein et al. 2007). Many vitamins and other nutrients essential to human nutrition are found primarily in plants that require insect pollination (Eilers et al. 2011); as such, the loss of pollinators may pose challenges to human nutrition.

Each of the following factors pose a substantial threat to the survival of the four species of bumble bees included in this petition: present or threatened modification or destruction of its habitat; overexploitation; competition; disease; and other natural events and human-related activities, including pesticide use, population dynamics and structure, global climate change, and for the Suckley cuckoo bumble bee, loss of its host species.

While each of these four bumble bee species have been placed on California Department of Fish and Wildlife’s Special Animal List, and their extinction risk has been recognized by the International Union for the Conservation of Nature (IUCN) and the global network of bumble bee researchers engaged in IUCN’s Bumblebee Specialist Group, these species receive no formal protection. This petition presents information that each of these four bumble bee species is experiencing dramatic declines and protections under the California Endangered Species Act are necessary to conserve their populations and protect and restore their habitat throughout their ranges in California.

II. POPULATION TRENDS, ABUNDANCE, RANGE, AND DISTRIBUTION

Current Conservation Status

The conservation status and extinction risk of the petitioned species has been evaluated by the International Union for the Conservation of Nature (IUCN) Bumblebee Specialist Group, a global network of bumble bee researchers dedicated to the conservation of bumble bees, and published on the IUCN’s Red List of Threatened Species (Hatfield et al. 2015a, 2015b, 2015c; Kevan 2008). The IUCN Bumblebee Specialist Group utilized methods published in the 2001 IUCN Red List Categories and Criteria version 3.1, a standard, global method to evaluate the conservation status of plant and animal species worldwide. Each species was assessed according

to the IUCN Red List criteria by multiple bumble bee experts, and the methods used in the assessments were peer-reviewed by additional bumble bee experts (see reviewers and assessors listed in Hatfield et al. 2015a, 2015b, 2015c), with the exception of the Red List profile for *B. franklini*, which was added to the Red List in 2008, before the IUCN Bumblebee Specialist Group existed.

The IUCN Bumble Bee Specialist Group (BBSG) measured changes in each species' range and relative abundance between historic (1805-2001) and recent (2002-2012) time periods for *B. crotchii*, *B. occidentalis*, and *B. suckleyi* (Hatfield et al. 2015a; 2015b; 2015c). *Bombus franklini* was listed on the IUCN Red List previously (Kevan 2008).

A database of more than 200,000 electronic specimen records of North American bumble bee species was assembled from academic, research and private collections (Richardson 2014) and analyzed to evaluate the change in each species' range between the recent and historic time periods. Once these analyses were completed, quantitative thresholds for extinction risk were used (IUCN 2012) to determine the extinction risk of each bumble bee species (IUCN Red List 2016).

The petitioned species are listed on the IUCN Red List as: Critically Endangered (*Bombus franklini* and *Bombus suckleyi*) and Endangered (*Bombus crotchii*) (Table 1) (Kevan 2008; Hatfield et al. 2015a; 2015c). An IUCN Red List category has not yet been formally assigned for the southern subspecies of the western bumble bee (*B. occidentalis occidentalis*), but the full species (*B. occidentalis*) is listed as Vulnerable to extinction on the IUCN Red List (Hatfield et al. 2015b), and a more recent analysis of changes in range and relative abundance of *B. o. occidentalis* suggests that this subspecies would meet the criteria of Endangered on the IUCN Red List (Hatfield et al. 2018a, unpublished data).

Table 1: Conservation status of each of the four petitioned bumble bee species. *The subspecies *Bombus occidentalis occidentalis* has not been evaluated by CNDDDB; the S1 rank is for the entire species *Bombus occidentalis*. **The subspecies *Bombus occidentalis occidentalis* is not on the IUCN Red List (since the taxonomic change came after the assessments were done), but the IUCN's Bumblebee Specialist Group range and relative abundance decline estimates indicate that it would meet the IUCN Red List's Endangered criteria. The species *Bombus occidentalis* has been listed as Vulnerable on the IUCN Red List.

Species	CNDDDB State Rank	NatureServe global (G) and national (T) ranks	ESA Status	IUCN Red List Status
Crotch bumble bee (<i>Bombus crotchii</i>)	S1S2	G3G4	None	Endangered
Franklin's bumble bee (<i>Bombus franklini</i>)	S1	G1	None (SSA phase)	Critically Endangered
Western bumble bee, southern subspecies (<i>Bombus occidentalis occidentalis</i>)	S1*	G4T1T3	None (parent species SSA phase)	Subspecies not evaluated, but meets the criteria of Endangered**
Suckley cuckoo bumble bee (<i>Bombus suckleyi</i>)	S1	G1G3	None	Critically Endangered

Changes in Range, Distribution, and Relative Abundance

In Table 2, we summarize the changes in range (extent of occurrence, or EOO, and persistence) and relative abundance for each of the petitioned species (Kevan 2008; Hatfield et al. 2015a; 2015c; IUCN Red List 2016; Hatfield 2018a and 2018b, unpublished data).

Table 2: Summary of changes in species' ranges, persistence, and relative abundance between recent (2002-2012) and historic (pre-2002) time periods.

Species	Historic Distribution	Range Decline: Extent of Occurrence	Range Decline: Persistence	Relative Abundance Decline	Average Decline	Reference
Crotch bumble bee (<i>Bombus crotchii</i>)	United States (CA) Mexico (B.C.)	25%	79%	98%	67%	Hatfield et al. 2015a
Franklin's bumble bee (<i>Bombus franklini</i>)	United States (CA, OR)	44%	67%	85%	65%	Hatfield 2018b, unpublished data
Western bumble bee, southern subspecies (<i>Bombus occidentalis occidentalis</i>)	United States (AZ, CA, CO, ID, MT, NE, NV, NM, OR, SD, UT, WA, WY) Canada (AB, BC, SK)	53%	33%	84%	57%	Hatfield 2018a, unpublished data
Suckley cuckoo bumble bee (<i>Bombus suckleyi</i>)	United States (AK, CA, CO, ID, MT, NY, ND, OR, SD, UT, WA, WY) Canada (AB, BC, MB, NL, NT, NS, ON, QC, SK, YT)	57%	84%	90%	77%	Hatfield et al. 2015c

Each of the species included in this petition have experienced dramatic declines in their ranges, relative abundance, and persistence, and these sharp decreases have likely been driven by population declines. The life history of *Bombus suckleyi*, a cuckoo bumble bee, makes it uniquely susceptible to extinction (Suhonen et al. 2015). Below we provide more information on the distribution and population status of each species in this petition.

The Crotch bumble bee (*Bombus crotchii*)

Distribution

Bombus crotchii has a limited distribution in southwestern North America. This species occurs primarily in California, including the Mediterranean region, Pacific Coast, Western Desert, Great Valley, and adjacent foothills through most of southwestern California (Williams et al. 2014). It also occurs in Mexico (Baja California and Baja California Sur) (Williams et al. 2014) and has been documented in southwest Nevada, near the California border.

Population Status

This species was historically common throughout much of the southern two-thirds of California, but now appears to be absent from most of it, especially in the center of its historic range (Hatfield et al. 2014, Richardson et al. 2014). In the Central Valley there has been extensive agricultural intensification and the southern part of its range is experiencing rapid urbanization.

Average decline for this species was calculated by averaging the changes in relative abundance and two measures of range: persistence and Extent of Occurrence (EOO) between a recent time period (2002-2012) and a historic (1805-2001) time period (for an explanation of methods, see below). This analysis yielded the following results:

- Current range size relative to historic range (EOO): 74.67% (25.33% decline)
- Persistence in current range relative to historic occupancy: 20.48% (79.52% decline)
- Current relative abundance compared to historic relative abundance: 2.32% (97.68% decline)
- **Average decline: 67.51%**

This analysis suggests sharp declines in both relative abundance and persistence over the last ten years.

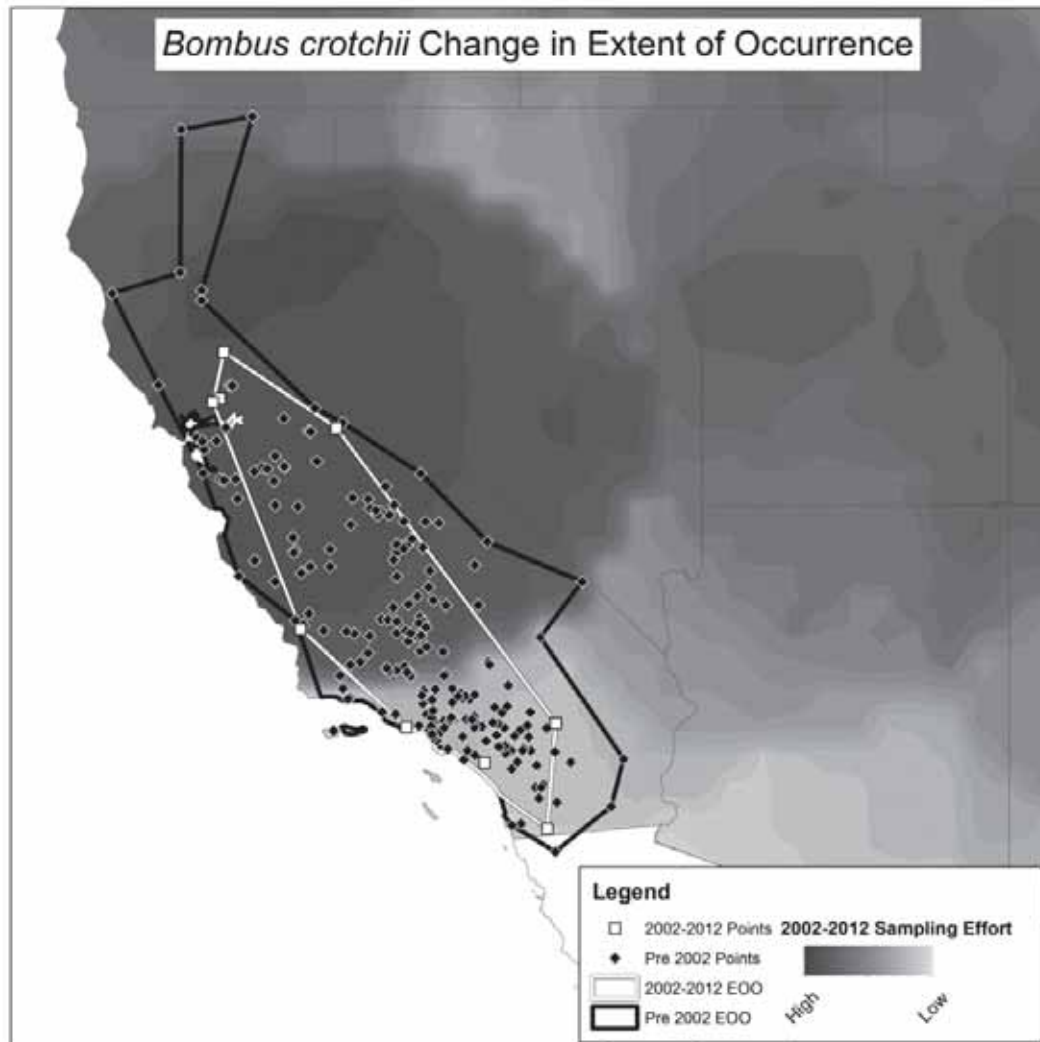


Figure 1: Recent and historical range map for *Bombus crotchii* displayed with a map of sampling effort across its range.

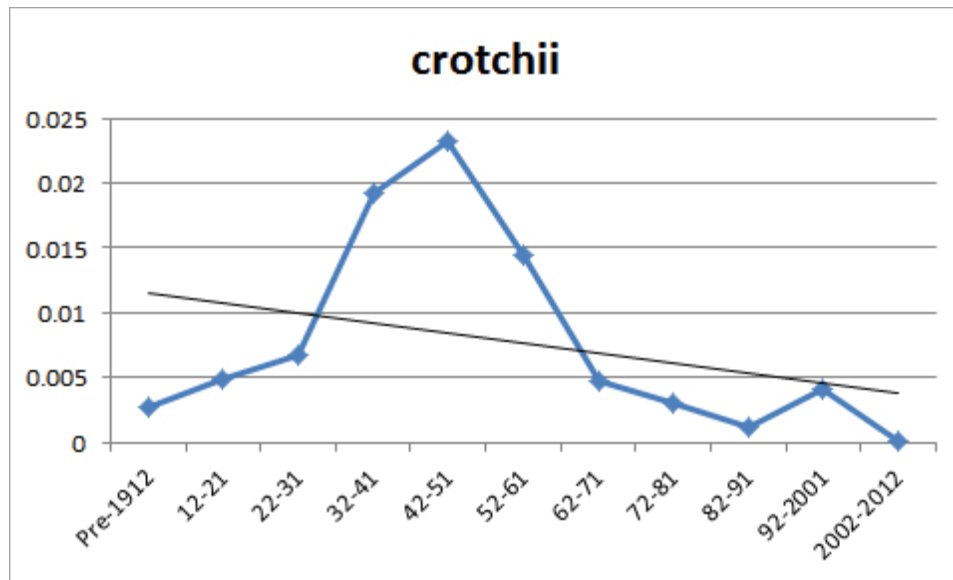


Figure 2: Relative abundance of *Bombus crotchii* by 10-year periods.

Franklin's bumble bee (Bombus franklini)

Distribution

Bombus franklini has the most limited geographic distribution of any bumble bee in North America and possibly the world (Williams 1998). *B. franklini* is known only from southern Oregon and northern California between the Coast and Sierra-Cascade Ranges. Stephen (1957) recorded it from the Umpqua and Rogue River Valleys of Oregon. Thorp et al. (1983) also recorded it from northern California and suggested its restriction to the Klamath Mountain region of southern Oregon and northern California. Its entire distribution, including recent range extensions (Thorp 1999; 2001; 2004) can be covered by an oval of about 190 miles north to south and 70 miles east to west between 122° to 124° west longitude and 40° 58' to 43° 30' north latitude. It is known from Siskiyou and Trinity counties in California. Elevations of localities where it has been found range from 540 feet (162 m) in the north to above 7,800 feet (2,340 m) in the south of its historic range. Although the number of populations that existed prior to 1998 is unknown, there are several historic records for this species, both published and in museums, including two in 1925 (Gold Hill and Roseburg, OR), one in 1930 (Roseburg, OR), two in 1950 (Gold Hill and Medford, OR), two in 1958 (Ashland, OR), two in 1968 (Mt. Ashland and near Copper, OR), one in 1980 (Ashland, OR), two in 1988 (Ashland and Merlin, OR), two in 1989 (Hilt and Yreka, CA), four in 1990 (Ashland, Ruch, Central Point, and Gold Hill, OR), one in 1992 (Ashland, OR), two in 1997 (Roxy Ann Peak near Medford and Ashland Pond in Ashland, OR), and four in 1998 (Roca Canyon in Ashland, Lost Creek Reservoir, and Grizzly Peak near Shale City, OR). Additional records with unknown dates and or localities are also available, including the 1917 type specimen whose locality (Nogales, AZ) has been determined to be erroneous.

Population Status

Evidence for the decline in this species is based on intensive and extensive surveys, primarily by R.W. Thorp (Thorp 1999, 2001, 2004, 2005a, b, 2008) from 1998 through 2017. Surveys for the Bureau of Land Management were also conducted in 2005 (Code and Haney 2006). R.W. Thorp surveyed from nine to seventeen historic sites (average 13.8 sites) per year from 1998 to 2009; reports of surveys completed since 2009 are not available, although it has been confirmed that no *B. franklini* have been found in surveys that have occurred since 2009 (Thorp 2010-2017, pers. comm. with S. Jepsen). Dr. Thorp also surveyed from six to nineteen additional sites (average 12.8 sites) each year, some of which were visited more than once per year and some of which were visited in multiple years (Table 3).

Bombus franklini has not been seen in California since surveys by R.W. Thorp for the species at Hilt in Siskiyou County in 1998 documented two individuals (Table 3). Between 1998 and 2005, the number of sightings of *B. franklini* throughout its range declined precipitously from ninety-four individuals in 1998 to twenty in 1999, nine in 2000 and one in 2001. In Oregon, twenty were found in 2002, although only three were sighted in 2003, all at a single locality at Mt. Ashland in southern Oregon. None were found in 2004 and 2005 in Oregon or California. A single worker of *B. franklini* was sighted in 2006 at Mt. Ashland in Oregon, which is the same locality where *B. franklini* were found in 2003 (Table 3). None have been found from 2007-2017. R.W. Thorp's unpublished surveys have revealed that, since 1998, the populations have decreased to the point of being not seen at all in 2004 or 2005, with only one individual found in 2006. Because extensive surveys of the area within which *B. franklini* exists have, as of 2006, uncovered only one individual, but similar surveys in the first three years (1998-2000) uncovered individuals at many historic and seven new sites, it can be concluded that the extent of population is decreasing severely. Though further investigation would be required to determine the exact number of extant *B. franklini*, based on their limited range, it can be assumed that their populations have decreased to dangerously low levels.

Table 3: Historic and new* localities surveyed for *Bombus franklini* and numbers of *B. franklini* observed from 1998 through 2007 (Thorp 2008). Bolded entries denote that *B. franklini* was observed. Surveys were conducted by Dr. Thorp during 2008 and 2009, but no *B. franklini* were encountered.

Site	ST		# times visited / # <i>Bombus franklini</i> found									
		Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
		CO										
Sutherlin, W of	OR	<u>Douglas</u>	1/1*	1/0	1/0	2/0	1/0		2/0	3/0		1/0
Ashland	OR	<u>Jackson</u>			1/0	2/0	3/1		4/0	7/0	5/0	2/0
Ashland, ENE (3)	OR	<u>Jackson</u>	1/0	1/0	1/0	2/0	5/0	1/0			1/0	1/0
Buncom, E of	OR	<u>Jackson</u>		1/1*	3/0	1/0	1/0					
Gold Hill, E of	OR	<u>Jackson</u>	4/44*	2/0	7/5	7/0	3/0	4/0	2/0	4/0	2/0	2/0
Grizzly Peak	OR	<u>Jackson</u>	2/0	2/0	1/0	2/0	2/0	2/0	2/0	3/0	1/0	2/0
Jackson Campground	OR	<u>Jackson</u>	2/2*	2/0	1/0		1/0			1/0		
Kenney Meadows	OR	<u>Jackson</u>	2/3*	2/0	2/0	2/0	1/0	1/0		1/0		
Lost Creek Reservoir	OR	<u>Jackson</u>		1/0		1/0			1/0	1/0		
Medford	OR	<u>Jackson</u>			3/0	3/0		1/0	1/0			
Mt. Ashland (2)	OR	<u>Jackson</u>	3/37	6/19	7/2	5/1	10/19	9/3	13/0	11/0	8/1	7/0
Phoenix, E of	OR	<u>Jackson</u>			1/0	2/0						
Ruch	OR	<u>Jackson</u>	3/3	2/0	2/1	1/0	2/0		2/0			
Ruch, S of (2)	OR	<u>Jackson</u>	1/0	2/0			1/0	2/0	2/0	1/0		
Ruch, SSE of	OR	<u>Jackson</u>		2/0	3/1*	2/0	1/0	2/0		1/0		
Union Creek	OR	<u>Jackson</u>		1/0								
Selma, S of	OR	<u>Josephine</u>	1/2*	1/0	1/0							
Wonder, W of	OR	<u>Josephine</u>			1/0							
Mt. Shasta	CA	<u>Siskiyou</u>	1/0	1/0	1/0		1/0			1/0	2/0	1/0
Hilt	CA	<u>Siskiyou</u>	2/2	3/0	3/0	1/0	2/0	1/0	1/0	2/0	2/0	1/0
Montague	CA	<u>Siskiyou</u>		1/0					1/0		1/0	
Total <i>B. franklini</i> seen			94	20	9	1	20	3	0	0	1	0
New sites for <i>franklini</i>			5	1	1	0	0	0	0	0	0	0
<i>B. franklini</i> site visits			22	32	41	33	36	20	31	36	22	17
Other sites visited			19	23	14	7	6	8	9	19	14	2

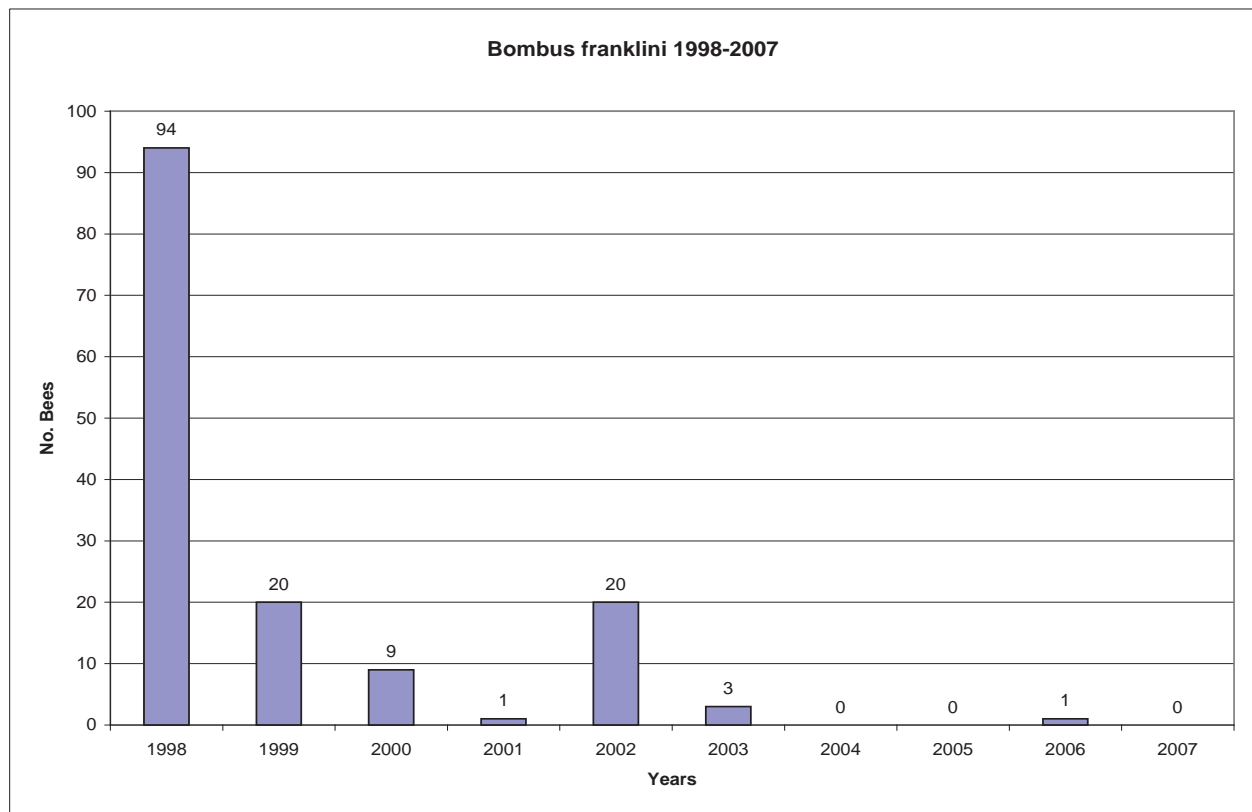


Figure 3: Number of *Bombus franklini* observed in surveys from 1998-2007 (Thorp 2008). Surveys were also conducted by Dr. Thorp from 2008-2017, but no *B. franklini* were found.

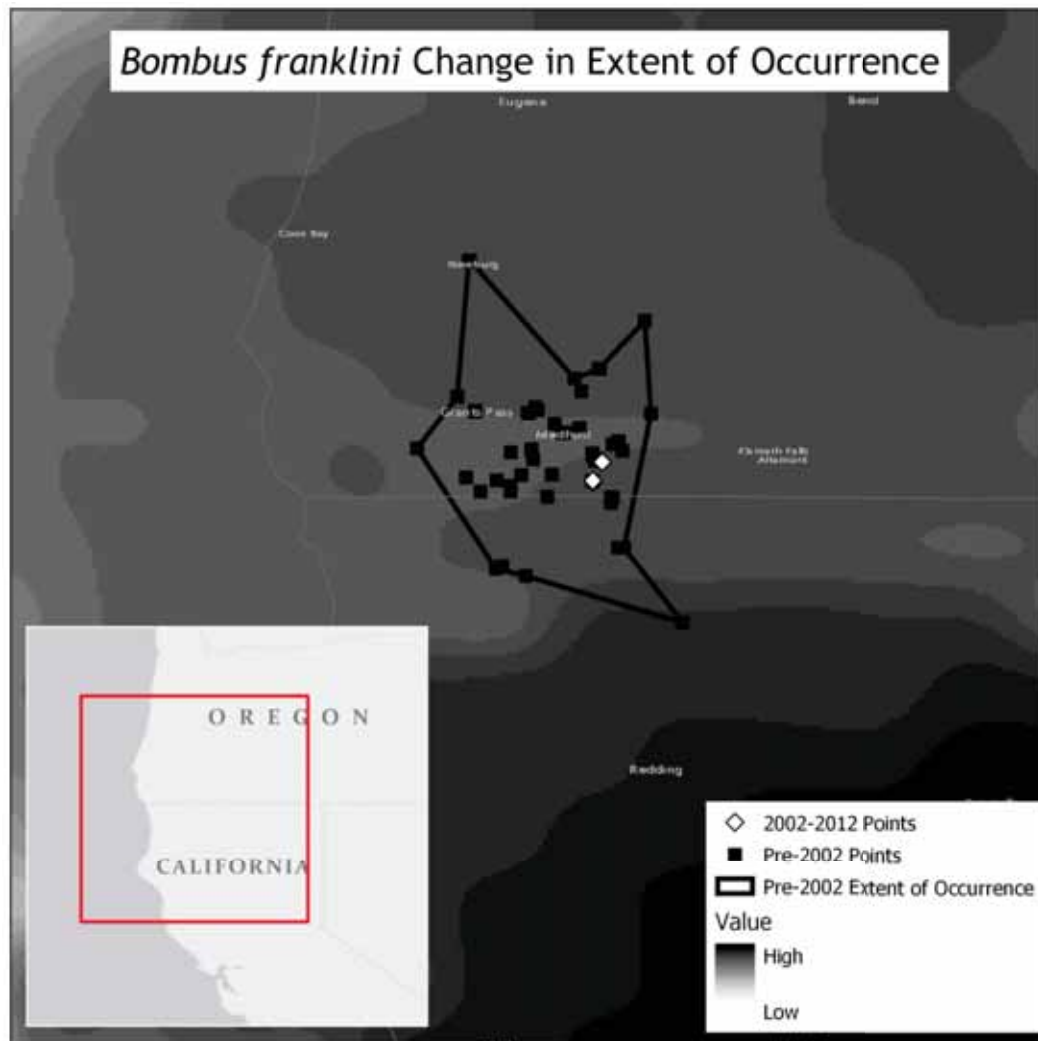


Figure 4: Current and historical range map for *Bombus franklini*.

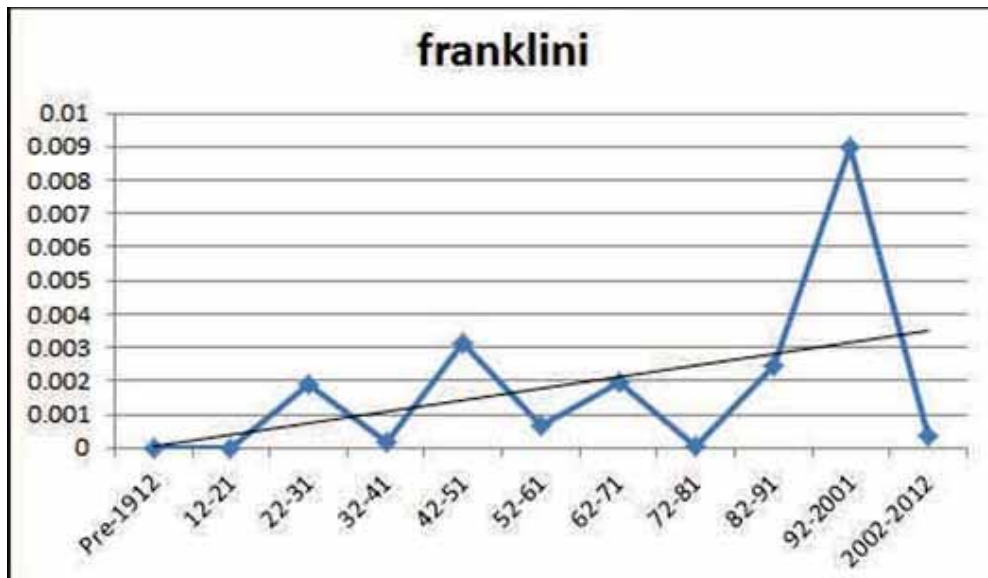


Figure 5: Relative abundance of *Bombus franklini* by 10-year periods. Note that a targeted survey effort for *B. franklini* began in 1998, probably explaining the spike in this species' relative abundance in the *Bombus* specimen database during the decade from 1992-2001.

The Western bumble bee (Bombus occidentalis occidentalis)

Bombus occidentalis consists of two subspecies: *B. occidentalis mckayi*, which occurs in Alaska, Yukon Territory, Northwest Territories, northern British Columbia, and northern Alberta, and *B. occidentalis occidentalis*, which occurs from southern British Columbia, southern Alberta, and southwestern Saskatchewan south to multiple western U.S. states (Sheffield et al. 2016). Existing evidence suggests that it is the southern subspecies, *B. occidentalis occidentalis*, which has undergone a dramatic range contraction and population decline, especially in the western part of its range. The authors of this petition are not aware of any evidence suggesting that *B. occidentalis mckayi* has undergone any range reduction or population decline. The IUCN Bumblebee Specialist Group recently completed analyses of changes in range, persistence, and relative abundance of both *B. occidentalis* (Hatfield et al. 2015b) and *B. occidentalis occidentalis* (Hatfield 2018 unpublished data) between recent and historic time periods.

Distribution

Bombus occidentalis occidentalis was historically broadly distributed across the west coast of North America from southern British Columbia to central California, east through Alberta and western South Dakota, and south to Arizona and New Mexico (Williams et al. 2014; Sheffield et al. 2016). In California, it has been documented in Alameda, Alpine, Butte, Calaveras, Contra Costa, Del Norte, El Dorado, Fresno, Humboldt, Lake, Lassen, Madera, Marin, Mariposa, Mendocino, Modoc, Monterey, Napa, Nevada, Placer, Plumas, San Benito, San Francisco, San Joaquin, San Luis Obispo, San Mateo, Santa Clara, Santa Cruz, Shasta, Sierra, Siskiyou, Solano, Sonoma, Tehama, Trinity, Tulare, Yolo, and Yuba counties (Bumble Bee Watch 2017; Richardson 2017; Rickman 2017).

Population Status

Bombus occidentalis occidentalis was once very common in the western United States but has recently undergone a dramatic decline in abundance and distribution, and is no longer present across much of its historic range. A rangewide analysis including more than 73,000 records of eight bumble bee species suggests that the parent species, *B. occidentalis* has undergone a 28% range decline between recent (2007-2009) and historic (1900-1999) time periods (Cameron et al. 2011a). A separate analysis comparing the current (2002-2012) and historic (1805-2001) ranges of *B. occidentalis occidentalis* (using a database of more than 200,000 records of 43 species of North American bumble bees developed by Williams et al. 2014) suggests that the southern subspecies has been lost from 53% of its historic range, or EOO (Hatfield et al., unpublished data). The relative abundance of *B. o. occidentalis* has declined by 84% (Hatfield et al., unpublished data). Declines were found to be most significant at the edges of this species' range (Hatfield et al., unpublished data). In California, *B. o. occidentalis* populations are currently largely restricted to high elevation sites in the Sierra Nevada (Xerces Society 2012), though there have been a couple of observations of this species on the northern California coast (Xerces Society et al. 2017).

Average decline for this species was calculated by averaging the change in abundance, persistence, and EOO. This analysis yielded the following results (see also the graph of relative abundance and map of change in EOO over time below):

- Current EOO (range) relative to historic EOO: 47% (53% decline)
- Persistence in current range relative to historic occupancy: 57% (33% decline)
- Current relative abundance relative to historic values: 16% (84% decline)
- Average decline: 57%

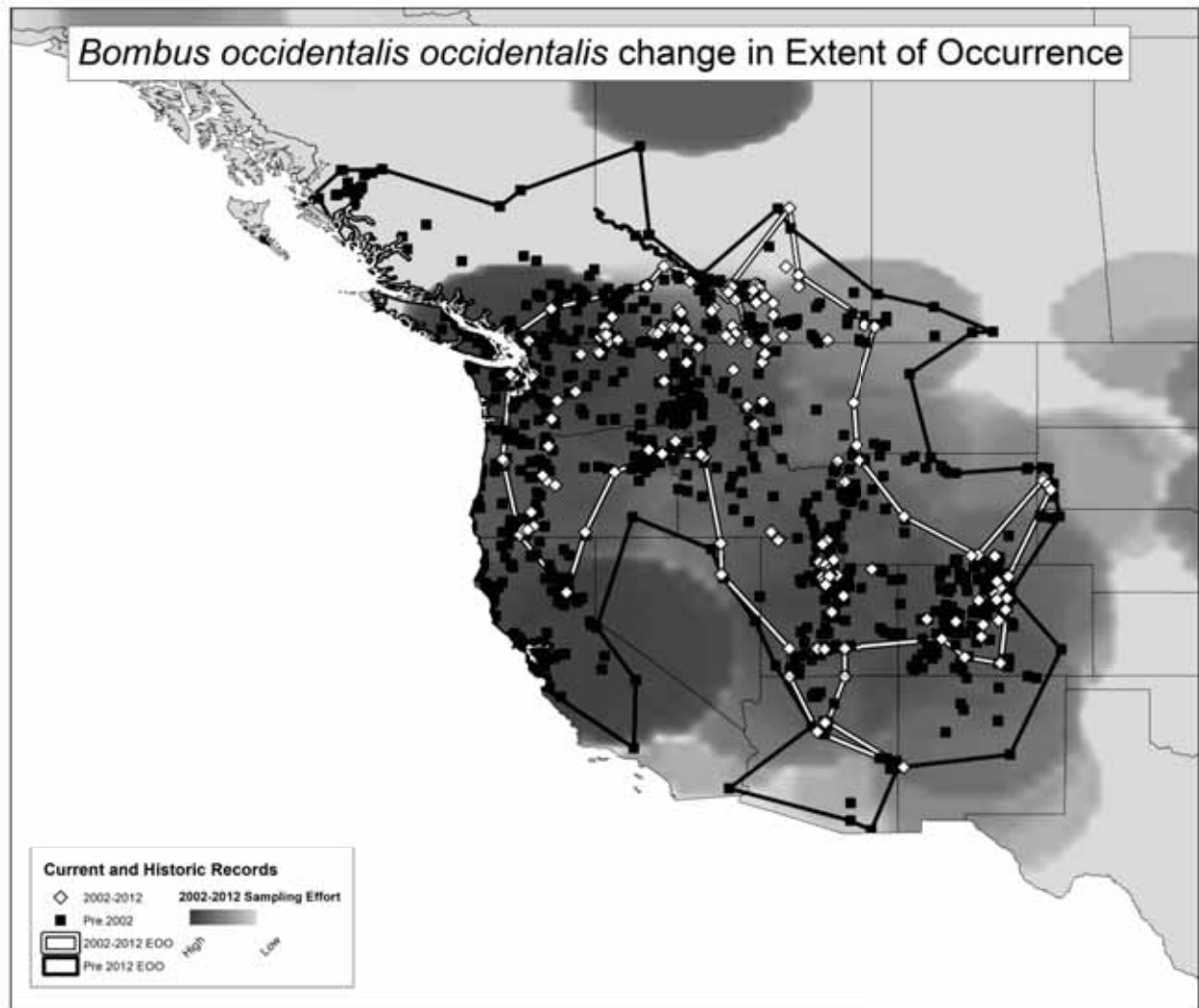


Figure 6: Current and historical range map for *Bombus occidentalis occidentalis*.

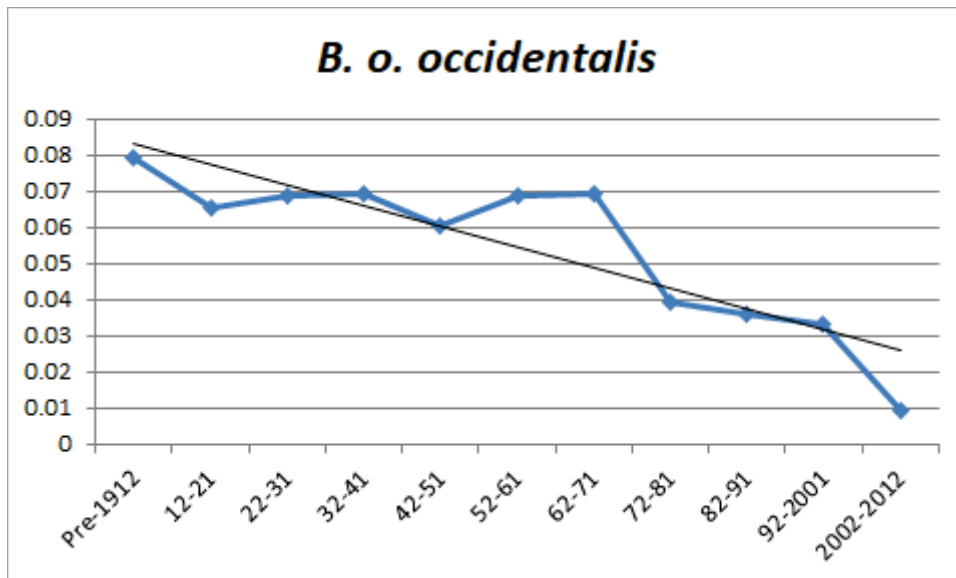


Figure 7: Relative abundance of *Bombus occidentalis occidentalis* by 10-year periods.

*The Suckley cuckoo bumble bee (*Bombus suckleyi*)*

Distribution

This species has a broad distribution centered in western North America and also including several scattered localities in the northeast. It occurs in the Mountain West from California and Colorado to Alaska, east to the Canadian Great Plains, with a disjunct subpopulation in Newfoundland (Williams et al. 2014). In California *Bombus suckleyi* has a very limited distribution, occurring only in the Klamath Mountain region in the northern part of the state.

Population Status

Bombus suckleyi has experienced dramatic population declines throughout its range and has declined by over 80%, according to criteria established by the IUCN (Hatfield et al. 2015c). The decade by decade relative abundance regression shows a gradual decline since the 1940s, and the relative abundance regression over just the past 50 years is highly significant (R-squared value of nearly 1; showing a continued steep decline). If we project the 50 year relative abundance regression into the future, it falls below the x-axis in the next 10 years. Notably, this species' declines are likely due – at least in part – to the rapid disappearance of its host, the **western bumble bee (*Bombus occidentalis occidentalis*)**, which has declined by 84% (Hatfield et al., unpublished data). Both the past decline in relative abundance (90.11% over the past 10 years) and predicted future decline in relative abundance (based on 50-year regression) indicate dramatic, rapid declines. Note that the range and persistence of this species have also declined, however, since some historic sites have not been re-sampled and since we only have records of this species in approximately six general localities for the current time period, we were not comfortable using those measures of decline.

Average decline for this species was calculated by averaging the change in abundance, persistence, and EOO. This analysis yielded the following results (see also the graph of relative abundance and map of change in EOO over time below):

- Current range size relative to historic range: 42.61% (57.39% decline)
- Persistence in current range relative to historic occupancy: 15.95% (84.05% decline)
- Current relative abundance relative to historic values: 9.89% (90.11% decline)
- Average decline: 77.18%

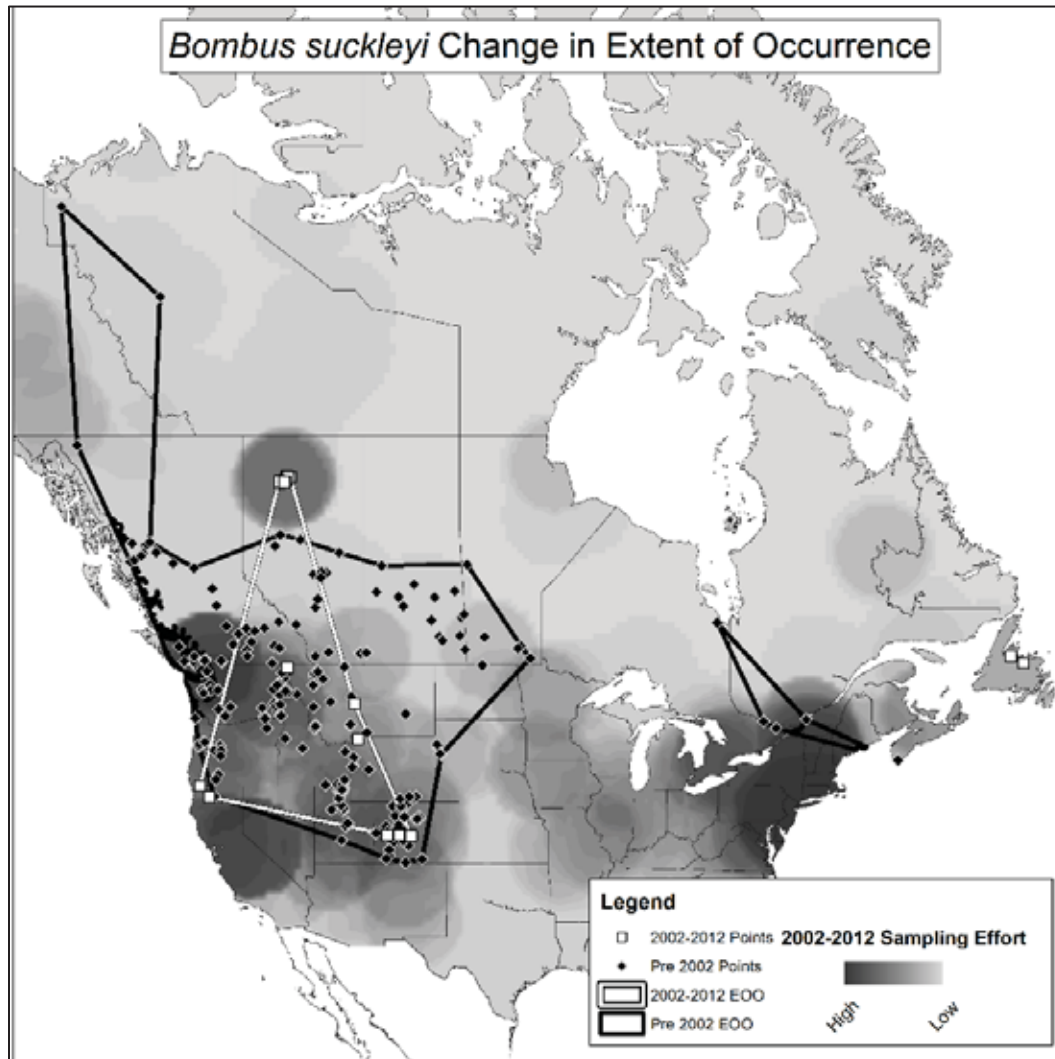


Figure 8: Current and historical range map for the Suckley cuckoo bumble bee (*Bombus suckleyi*).

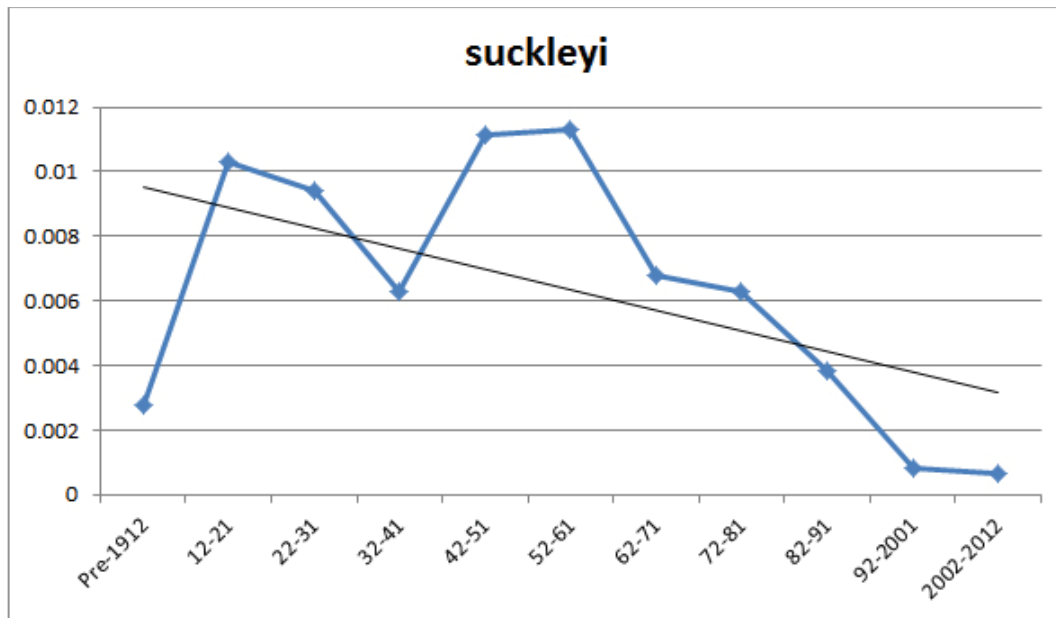


Figure 9: Relative abundance of the Suckley cuckoo bumble bee (*Bombus suckleyi*) by 10-year periods.

METHODS USED

Analyses

Hatfield et al. (2014) evaluated changes between recent and historic time periods in each species': overall Extent of Occurrence (EOO), persistence within 50km grid cells, and relative abundance. For both the EOO and persistence calculations, a database of >200,000 specimen records (Richardson et al. 2014) was divided into historical (1805 – 2001, N=128,572) and current (2002-2012, N=73,626) records (Hatfield et al. 2014, Hatfield et al 2018c).

Extent of Occurrence (EOO)

Since the historical database had significantly more records, and therefore could lead to an over estimate of range loss due to an increased chance of including more records near the edge of each species' range, Hatfield et al. (2014) rarefied the historic data set by randomly selecting 73,626 records from the historical time period to use in the EOO measurement. Using z-tests for differences in proportion, it was ensured that the relative abundance of each species in the subsampled historical data was not significantly different from the relative abundance of that species in the original database. To measure changes in each species' EOO, Hatfield et al. (2014) first used a k-nearest neighbors approach to create local convex hulls for each species in each time period (Getz et al. 2007). Generally, the "minimum spurious hole covering" rule proposed in Getz et al. (2007) was used. However, since the ranges of most North America bumble bees are large, "spurious holes" frequently included large expanses of inhospitable habitat for bumble bees (e.g., The Gulf of Alaska) (Hatfield et al. 2014). After the local convex hull polygons were created, the polygons were clipped to the North American continent to remove large patches of

unoccupied habitat (e.g., Great Lakes) (Hatfield et al. 2014). Using the areas calculated from these polygons, Hatfield et al. (2014) compared the current area to the historical area to determine change in home range size (see Figures 1, 4, 6, and 8).

Persistence

To determine species' persistence within their home range, Hatfield et al. (2014) divided the continent into 50 km x 50 km grid cells. Hatfield et al. (2014) used 50 km grid cells to be consistent with previous European and North American *Bombus* spp. analyses (Williams et al. 2007; Colla et al. 2012) and because the data in the historical database were georeferenced from specimen label locality descriptions, which are sometimes inaccurate at smaller spatial scales (Wieczorek et al. 2004). For each time period the number of grid cells occupied by each species was divided by the total number of grid cells occupied by all species (Hatfield et al. 2014). Then, the value from the current time period was divided by the value from the historic time period to detect changes in persistence over time. While the metric that Hatfield et al. (2014) report is not truly a measure of range size, it does provide a measure of each species' persistence within its home range.

Relative Abundance

To evaluate changes in the relative abundance (RA) of each species, Hatfield et al. (2014) divided the full database into historical (1805-2001) and current (2002-2012) time periods and calculated the RA of each species in each time period. Then, to estimate changes in RA, they divided the current RA by the historical RA. In addition to comparing the historical time period to the most recent decade, Hatfield et al. (2014) also broke the database up into ten ten-year periods, plus one time period covering all records prior to 1913 and calculated the RA of each species in each time period (e.g., pre-1913 = period 1, 1913-1922 = period 2). Then, using time as the explanatory variable and RA as the independent variable, a linear regression was conducted to assess longer-term trends in each species' RA (see Figures 2, 5, 7, and 9) (Hatfield et al. 2014). To evaluate extinction risk for several species Hatfield et al. (2014) used a linear trendline to project future declines and used the x-intercept as the theoretical point of extinction.

Sampling Effort

Specimen records were used for the analysis of change in range size, sampling effort likely played a significant role in determining species presence or absence (Hatfield et al. 2014). To account for varying sampling effort and avoid overestimating range loss, Hatfield et al. (2014) created sampling density rasters from the presence points, in both the current time period, and the random sample of the historical time period (using ArcGIS 10.2). For each species Hatfield et al. (2014) calculated the relative difference in sampling density in areas where the historical EOO did not overlap with the current period EOO. Using the area of this non-overlapping polygon, the average sampling density for both time periods was calculated (Hatfield et al. 2014). Species that experienced range loss in the current time period that had a lower sampling

density than historically had their range loss estimates adjusted by the relative difference in average sampling density to account for the change in effort. Hatfield et al. (2014) did not adjust the change in range estimates for species that had a higher sampling density in the current time period.

Since most records available for the bumble bee species included in this petition are from incidental observations or museum specimen records rather than from quantitative studies, population estimates at specific sites are unavailable. Furthermore, using field estimates of abundance to understand bumble bee population stability can be problematic because observations of multiple individuals may represent a single reproductive unit (because of the colonial life history of bumble bees).

III. LIFE HISTORY (SPECIES DESCRIPTION, BIOLOGY, AND ECOLOGY)

Bumble Bee Biology

Most bumble bees are primitively eusocial insects that live in colonies composed of a queen, workers, and, near the end of the season, reproductive members of the colony (new queens, or gynes, and males). There is a division of labor among these three types of bees. Queens are responsible for initiating colonies and laying eggs. Workers are responsible for most food collection, colony defense, and feeding of the young. Males' sole function is to mate with queens. Colonies are annual, starting from colony initiation by solitary queens in the spring, to production of workers, and finally to production of queens and males. Queens produced at the end of the colony cycle mate before entering diapause, which is a form of hibernation.

Bumble Bee Pollination Ecology

Bumble bee colonies depend on floral resources for their nutritional needs. Bumble bees collect both nectar and pollen of the plants that they pollinate. Nectar provides them with carbohydrates and pollen provides them with protein. Bumble bees are generalist foragers, meaning that they gather pollen and nectar from a wide variety of flowering plants; although individual species can vary greatly in their plant preferences, largely due to differences in tongue length.

During collection of pollen and nectar from flowers, bumble bees also transport pollen between flowers, facilitating seed and fruit production. Bumble bees have many qualities that contribute to their suitability as agricultural pollinators. They are able to fly in cooler temperatures and lower light levels than many other bees, which extends their work day and improves the pollination of crops during inclement weather (Corbet et al. 1993). Bumble bees are well-known to engage in "buzz pollination," a very effective foraging technique in which they sonicate the flowers to vibrate the pollen loose from the anthers. This activity causes the flower to vibrate, which in turn dislodges pollen that would have otherwise remained trapped in the flower's anthers (Buchmann 1983). Tomatoes (Solanaceae), blueberries (Ericaceae), and many other

important food plants are pollinated by bumble bees in this way. In addition to commercially important crops, bumble bees also play a vital role as generalist pollinators of native flowering plants, and their loss may have far ranging ecological impacts. Below we provide life history accounts, species identification, taxonomy, phenology, reproductive biology, habitat relationships, and vulnerability of populations to certain natural or human-caused adverse impacts for each of the petitioned species.

Crotch bumble bee (*Bombus crotchii*) Cresson 1878

Taxonomy

This species was described by Cresson (1878) and upheld as a distinct species in the subgenus *Cullamonobombus* by more recent analyses (Cameron et al. 2007; Williams et al. 2008a).

Identification

Bombus crotchii is most easily distinguished from other *Bombus* species based on hair coloration. Technical descriptions below are adapted from Williams et al. (2014):

Queens: The queen is 22 to 25 mm in length. Their hair of the face is black with a yellow vertex (top of the head). Their hair is yellow on the front part of the thorax (scutum), usually with black hairs between and below the wings as well as at the back of the thorax (scutellum). On the abdomen, the first tergal (T-dorsal plate) segment is black, at least medially. T2 is yellow, sometimes with black medially and anteriorly. T3 has black anteriorly, sometimes with red posteriorly. T4 and T5 are either entirely red or black.

Workers: The worker is 12 to 20 mm in length. Their color patterns are identical to the queens.

Males: The male is 14 to 19 mm in length. The hair of the head and face are yellow with a yellow scutum and scutellum and a black band between the wings. T1 and T2 are yellow sometimes with yellow laterally and posteriorly on T3. T4-T7 are either entirely black or entirely red. Males of this species are greatly enlarged and bulbous.

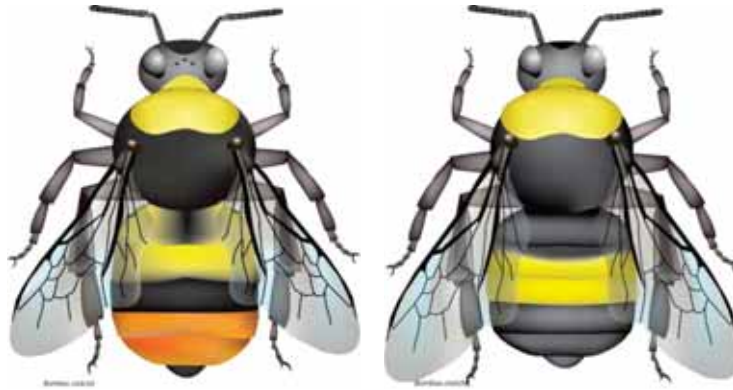


Figure 10: *Bombus crotchii* (female) queen/worker color forms. Although several color forms for females of this species have been described (Williams et al. 2014), the two color forms illustrated above are representative of female *B. crotchii* that occur in California. Illustrations by Elaine Evans and Rich Hatfield, the Xerces Society.

Franklin's bumble bee (*Bombus franklini*) (Frison, 1921)

Taxonomy

Bombus franklini is a valid species and its taxonomic status is uncontested. In 1971, Milliron questioned the taxonomic status of *Bombus franklini* as a valid species. Without presenting any evidence for his taxonomic decision, Milliron (1971) placed *B. franklini* in synonymy under *B. occidentalis* (Greene 1858) and then placed *B. occidentalis* in synonymy with *B. terricola*, which occurs in the eastern U.S. (Kirby 1837) on the basis of presumed overlapping color variation. This question has been addressed through studies of morphometrics by Plowright and Stephen (1980), the lack of intergradation (color/morphological) in areas of sympatry with *B. occidentalis* by Thorp et al. (1983), structure of the male genitalia by Williams (1991), and genetics (allozymes) by Scholl et al. (1992) and Cameron et al. (2007). All five studies between 1980 and 2007 concluded that *B. franklini* was indeed a valid species and distinct from *B. occidentalis*. *B. franklini* is currently recognized as a valid species by Williams et al (2014).

The original description by Frison (1921) was based on two queens sent to him by a commercial collector, E. J. Oslar and labeled by Oslar as having been collected at Nogales, Arizona in July 1917. Subsequently, Frison (1923) found additional specimens in the collections of the U.S. National Museum from "Oregon" (without more specific locality data) collected by C. F. Baker which he designated as a worker "Morphotype" and a male "Allotype." In 1926, Frison published additional records of one worker each from Roseburg and Gold Hill, Oregon, collected by H. A. Scullen. The same two records were published by Scullen (1927). Subsequently, evidence was marshaled by Thorp (1970) to dispute the putative Arizona records of *B. franklini* and to propose Gold Hill, Jackson County, Oregon the realistic type locality. Evidence included finding specimens of many other west coast bumble bee species labeled by Oslar as having been collected in southern Arizona about the same time, but representing a great disjunction for each of the species. Field studies by R. W. Thorp also failed to turn up *B. franklini* or any of the other

dozen species of bumble bees also labeled by Osler as having been collected in southern Arizona. This is supported by evidence presented on species of *Andrena* by LaBerge (1980; 1986) and the lack of specimens from the area in major bee collections (in Thorp et al. 2010).

Identification

Bombus franklini is readily distinguished from other bumble bees in its range by the extended yellow on the anterior thorax which extends well beyond the wing bases and forms an inverted U-shape around the central patch of black, lack of yellow on the abdomen, predominantly black face with yellow on top of the head, and white at the tip of the abdomen. Other bumble bees with similar color patterns in the range of *B. franklini* have the yellow extending back to the wing bases or only slightly beyond and usually have one or more bands of yellow on the middle or slightly behind the middle of the abdomen (most on T-4). Females of most species have yellow hair on the face, in contrast to black on *B. franklini*. Females of *B. occidentalis* and *B. fervidus* that have black hair on the face also have black hair on the vertex in contrast to the yellow hair on the vertex in *B. franklini*. Females of *B. fervidus* have a long face in contrast to the round face of *B. franklini* and *B. occidentalis*.

Queens & Workers

Face round with area between bottom of compound eye and base of mandible (= malar space) shorter than wide; hair predominantly black with some shorter light hairs intermixed above and below antennal bases. Hair on top of head (= vertex) yellow. Hair of thorax (= mesosoma) on anterior two-thirds above (= scutum) yellow extending rearward laterally inside and beyond the wing bases (= tegulae) to rear third (= scutellum), but interrupted medioposteriorly by inverted U-shaped patch of black; hair on posterior third above (= scutellum) black; hair of thorax laterally (= mesopleura) black, except for small patch of yellow in upper anterior corner in area of pronotal lobes. Hair of abdomen (= metasoma) black except for whitish or silvery hair at sides and apex of 5th plate above (= tergum 5, = T-5).

Males

As for female, except malar space as long as wide, face below antennae with predominantly yellow hair, and T-6 with some pale hair laterally.



Figure 11: Female *Bombus franklini*. Illustration by Elaine Evans, The Xerces Society.

Western bumble bee (*Bombus occidentalis occidentalis*) Greene, 1858

Taxonomy

Bombus occidentalis is considered a valid species (Franklin 1913; Thorp 2005c; Cameron et al. 2007; Bertsch et al. 2010; Williams et al. 2012). *Bombus occidentalis* consists of two valid subspecies: *Bombus occidentalis occidentalis* and *Bombus occidentalis mckayi* (Williams et al. 2012; Sheffield et al. 2016).

Identification

B. occidentalis occidentalis is most easily distinguished from other *Bombus* species based on hair coloration. Note, however, that coloration in this species can be highly variable, and eight female and seven male color forms have been described (Sheffield et al. 2016). There are two prominent color forms of *B. o. occidentalis* most likely to be encountered in California. Those found in the mountains (“*occidentalis*” form) are likely to have bright white coloration on the posterior end of the abdomen (Thorp 2013, pers. comm.); this character is unusual and obvious. The “*occidentalis*” form (without any yellow on T1-4) is found throughout in the eastern part of the state in the Sierra-Cascade Range from near Yosemite to Oregon and west along the northern tier of counties into Humboldt County (Thorp 2017, pers. comm.). Specimens found closer to the coast (“*nigroscutatus*” form) replace the bright white hairs with yellowish orange hairs (Williams et al. 2014). The “*nigroscutatus*” form includes all populations on the coast and Coast Ranges from Monterey County north into Humboldt County where the yellow banding becomes narrower (Thorp 2017, pers. comm.). However, some of these yellow-banded individuals have recently been located on the Eagle Lake Ranger District of the Lassen National Forest (Rickman 2017, pers. comm.). Technical descriptions below are adapted from Williams et al. (2014):

Queens: The queen is 20 to 21 mm in length. Their hair is entirely black on the head sometimes with a minority of yellow or gray hairs mixed in above the antennae. Their hair is yellow on the front part of the thorax (scutum), usually with black, or a minority of yellow hairs at the back of the thorax (scutellum). The majority of the hairs between and

below the wings are black. On the abdomen, the first two tergal (dorsal plate) segments (T1-T2) are black. If T3 is entirely yellow, then T4 is black, T5 white. If T3 is black, or with a minority of yellow, T4 and T5 are white.

Workers: The worker is 9 to 15 mm in length. Their hair is entirely black on the head sometimes with a minority of yellow or grayish hairs mixed in above the antennae. Their hair is yellow on the front part of the thorax (scutum), usually with black, or a minority of yellow hairs at the back of the thorax (scutellum). The majority of the hairs between and below the wings are black. On the abdomen, the first tergal (T1-dorsal plate) segment is black. T2 has at least some black on it centrally and anteriorly. If T3 is entirely yellow, the white hairs on T4 (if applicable) and T5 seen in queens will be replaced with yellowish orange hairs. If T3 with at most a minority of yellow hairs, T4 and T5 are white.

Males: The male is 13 to 17 mm in length. The hair on the head is pale yellowish on the front of the face. The top of the head has pale yellowish hairs medially, with some black hairs, especially laterally. The hair on the front of the thorax is pale yellowish. The hair on T1 is black with at least some black centrally and anteriorly on T2. If T3 is black the basal part of the fourth abdominal segment is black, with the remainder, as well as segments five to seven, whitish – although sometimes a yellowish orange. If T3 is entirely yellow, T5 is black basally, and the remainder, as well as T6-T7 are yellowish orange.



Figure 12: *Bombus. o. occidentalis* (female) worker, nominate color form ("*occidentalis*" - left), coastal color form ("*nigroscutatus*" - right). Although eight color forms for females of this species have been described (Sheffield et al. 2016), the two color forms illustrated above are representative of the two color forms of female *B. o. occidentalis* that occur in California. Illustrations by Elaine Evans and Rich Hatfield, the Xerces Society.

Suckley Cuckoo Bumble Bee (*Bombus suckleyi*) Greene, 1860

Taxonomy

This species was described by Greene (1860) and recent analyses have confirmed that it is a

valid species in the subgenus *Psithyrus* (Cameron et al. 2007; Williams et al. 2008a).

Identification

As a social parasite of other *Bombus* species, the females of this species do not collect pollen and do not have a corbicula (pollen carrying basket) on their hind leg tibia. There is also no worker caste in this species; all individuals are either male or reproductive females. *Bombus suckleyi* is most easily distinguished in the field from other *Bombus* species based on hair coloration and physical characteristics. The species that look similar to *B. suckleyi* with overlapping ranges in California are *B. insularis* and *B. flavidus*. The differences between these species and *B. suckleyi* are noted in the detailed description below (descriptions compiled in part from Williams *et al.* 2014).

Females: *Bombus suckleyi* females are 18 to 23 mm in length. Cuckoo bumble bees, members of the subgenus *Psithyrus* (including *B. suckleyi*), do not have a corbicula (pollen carrying basket on their hind leg), unlike the true bumble bees (pollen collecting, social species). Instead, their hind leg tibia is convex and densely covered in hairs. *B. suckleyi*'s hair is short and even. The hair of the head (including the vertex – top of the head) is black (contrast *B. insularis* – yellow face and vertex, and *B. flavidus* – yellow vertex). The hair of the thorax (including below the wings) is mostly yellow, with a black spot or band between the wings, sometimes with a black triangular notch behind, and between the wings. The first two tergal (T-dorsal plate) segments on the abdomen are black (contrast most *B. flavidus*), usually with at least some yellow (laterally and posteriorly) on T3 – no yellow centrally. T4 has predominantly yellow hairs, with a patch of black centrally and anteriorly (contrast *B. flavidus*). T5 is usually black, but can have yellow laterally; T6 is black.

Males: The male is 13 to 16 mm in length. The color patterns for males of this species are extremely variable. The only consistent features are yellow on all of T1 and T4 (contrast *B. insularis*), with some (or all) yellow on T2, T3, T5 and T6. T7 is black (contrast *B. flavidus*).

The illustration below represents the color patterns exhibited by females. Males tend to have more yellow on the abdomen, especially on the first (anterior) abdominal segment. The hair of the face on both males and females of this species is black (contrasted with *B. insularis* – a sympatric and common member of the *Psithyrus* subgenus and look-alike species).



Figure 13: Female *Bombus suckleyi*. Illustration © Paul Williams (identification and color patterns), Elaine Evans (bee body design), and Rich Hatfield.

IV. KIND OF HABITAT NECESSARY FOR SURVIVAL

Habitat Requirements

All bumble bees have three basic habitat requirements: suitable nesting sites for the colonies, availability of nectar and pollen from floral resources throughout the duration of the colony period (spring, summer, and fall), and suitable overwintering sites for the queens. In addition, their populations can be negatively affected by both pathogens and pesticides; thus, they may require habitat that is free from exposure to high levels of both native and exotic pathogens, and pesticides that cause harm to colonies. Bumble bees are found in a wide variety of natural, agricultural, urban, and rural habitats, although species richness tends to peak in flower-rich meadows of forests and subalpine zones (Goulson 2010).

Nest and Overwintering Sites

Bumble bee colony success is often limited by the availability of suitable nesting and overwintering sites. Diverse habitat features will increase the likelihood of nesting and overwintering success. Bumble bee queens emerge from hibernation in the early spring and immediately start foraging for pollen and nectar and begin to search for a nest site. Nesting preferences vary by species and local habitat conditions. Nests are often located underground in abandoned holes made by ground squirrels, mice, and rats, or occasionally abandoned bird nests (Osborne et al. 2008). Some species nest on the surface of the ground (in tufts of grass) or in empty cavities. Bumble bees that nest aboveground may require undisturbed areas with nesting resources such as grass and hay to protect nests (Williams et al. 2014). Furthermore, areas with woody cover, or other sheltered areas provide bumble bees sites to build their nest (e.g., downed wood, rock walls, brush piles, etc.).

Although little is known about the overwintering habits of most bumble bee species, some species are known to dig a few centimeters into soft, disturbed soil and form an oval shaped chamber in which the queen will spend the duration of the winter. Other species may overwinter

in small cavities just below or on the ground surface. Compost in gardens, leaf litter, or mole hills may provide suitable protection for queens to overwinter (Goulson 2010) before they emerge to begin a new colony (Williams et al. 2014). While there is still much to be learned about the nesting and overwintering biology of bumble bees, any near-surface or subsurface disturbance of the ground can be disastrous for bumble bee colonies or overwintering queens. This includes mowing, fire, tilling, grazing, and planting. Having large areas of land free from such practices is essential for sustaining bumble bee populations. Since bumble bees usually nest in abandoned rodent nests, nesting sites may be limited by the abundance of rodents; thus it is also important to retain landscape features that will support rodent populations. Furthermore, reducing ground disturbance can promote overwintering habitat for bumble bees (McFrederick and LeBuhn 2006).

Floral Resources

Bumble bees depend on the availability of habitats with a rich supply of floral resources that bloom continuously during the entirety of the colony's life. The queen collects nectar and pollen from flowers to support the production of her eggs, which are fertilized by sperm she has stored since mating the previous fall. In the early stages of colony development, the queen is responsible for all food collection and care of the young. As the colony grows, workers take over the duties of food collection, colony defense, and care of the young. The queen then remains within the nest and spends most of her time laying eggs. Colonies typically consist of between 50 and 500 workers at their peak (Plath 1927; Thorp et al. 1983; Macfarlane et al. 1994) along with the queen. Queen production is dependent on access to sufficient quantities of pollen. Thus, the amount of pollen available to bumble bee colonies directly affects the number of queens that can be produced (Burns 2004). Furthermore, since queens are the only bumble bees capable of forming new colonies, pollen availability directly impacts future bumble bee population levels. In fact, landscape level habitat quality has been shown to influence bumble bee species richness and abundance, indicating that isolated patches of habitat are not sufficient to fully support bumble bee populations (Hatfield and LeBuhn 2007; Öckinger and Smith 2007).

Bumble bees play the vital role of pollinators as they transfer pollen between native flowering plants when they are foraging. As generalist foragers, bumble bees do not depend on any one flower type. However, some plants do rely on bumble bees to achieve pollination. The loss of bumble bees can have far ranging ecological impacts due to their role as pollinators. An examination of the theoretical effect of removal of specialist and generalist pollinators on the extinction of plant species concluded that the loss of generalist pollinators poses the greatest threat to pollinator networks (Memmott et al. 2004). In Britain and the Netherlands, where multiple bumble bee species, as well as other bees, have gone extinct, there is evidence of decline in the abundance of insect pollinated plants (Biesmeijer et al. 2006).

Since bumble bee colonies obtain all of their nutrition from pollen and nectar, they need a

constant supply of flowers in bloom. Not all flowers are of equal value to bumble bees. Many varietal hybrids do not produce as much pollen and/or nectar as their wild counterparts (Frankie et al. 2005). Bumble bees do have preferences for certain species of plants. Generally, they prefer flowers that are purple, blue, or yellow; they are essentially blind to the color red and will not forage on red flowers (unless there are UV cues on the petals). Having plants with a diversity of corolla tube lengths will support bumble bees with varying tongue lengths. Bumble bees also show a strong preference to perennial plants as opposed to annuals; perennials tend to have higher quantities of nectar (Fussel and Corbet 1992). In addition to flowers, many bumble bee species may benefit from the presence of native bunch grasses. Bunch grasses will add multiple textures and heights to a garden or landscape and provide places for bumble bees to nest and overwinter.

Crotch Bumble Bee (*Bombus crotchii*) Habitat Requirements

In California, *B. crotchii* inhabits open grassland and scrub habitats. This species occurs primarily in California, including the Mediterranean region, Pacific Coast, Western Desert, Great Valley, and adjacent foothills through most of southwestern California (Williams et al. 2014). This species was historically common in the Central Valley of California, but now appears to be absent from most of it, especially in the center of its historic range (Hatfield et al. 2014; Richardson et al. 2014).

Nest Sites

The size of *Bombus crotchii* colonies has not been well documented. *B. crotchii*, like most other species of bumble bees, primarily nests underground (Williams et al. 2014).

Floral Resources

Bumble bees, including *Bombus crotchii*, are generalist foragers and have been reported visiting a wide variety of flowering plants. *B. crotchii* has a very short tongue, and thus is best suited to forage at open flowers with short corollas. The plant families most commonly associated with *B. crotchii* observations or collections from California include Fabaceae (66 observations), Apocynaceae (47), Asteraceae (28), Lamiaceae (27), Boraginaceae (12) (Richardson 2017). Similarly, in an analysis largely based on records from California, Thorp et al. (1983) reports that *B. crotchii* records are primarily associated with plants in the Leguminosae (=Fabaceae), Labiatae (=Lamiaceae), Hydrophyllaceae (=Hydrophylloideae), Asclepiadaceae (=Asclepiadoideae), and Compositae (=Asteraceae). Williams et al. (2014) report plants in the genera *Asclepias*, *Chaenactis*, *Lupinus*, *Medicago*, *Phacelia*, and *Salvia* as example food plants. Note that these floral associations do not necessarily represent *B. crotchii*'s preference for these plants over other flowering plants, but rather may represent the prevalence of these flowers in the landscape where this species occurs.

Overwintering Sites

Very little is known about the hibernacula, or overwintering sites utilized by *Bombus crotchii*. Generally, bumble bees overwinter in soft, disturbed soil (Goulson 2010), or under leaf litter or other debris (Williams et al. 2014).

Phenology

According to Thorp et al. (1983), the flight period for *Bombus crotchii* queens in California is from late February to late October, peaking in early April, with a second pulse in July. The flight period for workers and males in California is from late March through September; worker and male abundance peak in early July (Thorp et al. 1983).

Franklin's Bumble Bee (*Bombus franklini*) Habitat Requirements

Bombus franklini has the most limited geographic distribution of any bumble bee in North America and possibly the world (Williams 1998). It is known from Siskiyou and Trinity counties in California. *Bombus franklini* inhabits open grassy coastal prairies and Coast Range meadows from southern Oregon to northern California. Elevations of localities where it has been found range from 540 feet (162 m) in the north to above 7800 feet (2340 m) in the south of its historic range.

Nest Sites

The nesting biology of *B. franklini* is unknown, but it probably nests in abandoned rodent burrows as is typical for other members of the subgenus *Bombus sensu stricto* (Hobbs 1968).

Floral Resources

Like other bumble bees, *Bombus franklini* is a generalist forager and has been reported visiting a wide variety of flowering plants. *B. franklini* has been observed collecting pollen from lupine (*Lupinus* spp.) and California poppy (*Eschscholzia californica*), and collecting nectar from horsemint or nettle-leaf giant hyssop (*Agastache urticifolia*) and mountain monardella (*Monardella odoratissima*) (Thorp et al. 2010). This species may collect both pollen and nectar from vetch (*Vicia* spp.) as well as rob nectar from it (Thorp et al. 2010).

Overwintering Sites

Very little is known about the hibernacula, or overwintering sites, utilized by *B. franklini*, although generally bumble bee females are known to overwinter in soft, disturbed soil (Goulson 2010), or under leaf litter or other debris (Williams et al. 2014).

Phenology

The flight season of *B. franklini* is from mid-May to the end of September (Thorp et al. 1983).

Western Bumble Bee (*Bombus occidentalis occidentalis*) Habitat Requirements

Meadows and grasslands with abundant floral resources are the appropriate habitat for this

subspecies. While *Bombus occidentalis occidentalis* was historically known throughout the mountains and northern coast of California, it is now largely confined to high elevation sites and a small handful of records on the northern California coast (Cameron et al. 2011a; Xerces Society 2012; Williams et al. 2014; Xerces Society et al. 2017).

Nest Sites

Reports of *Bombus occidentalis occidentalis* nests are primarily in underground cavities such as old squirrel or other animal nests and in open west-southwest slopes bordered by trees, although a few nests have been reported from above-ground locations such as in logs among railroad ties (Plath 1922; Hobbs 1968; Thorp et al. 1983; Macfarlane et al. 1994). Thus, *B. o. occidentalis* nesting sites may be limited by rodent abundance (Evans et al. 2008). Nest tunnels have been reported to be up to 2.1 m long for this species and the nests may be lined with grass or bird feathers (MacFarlane et al. 1994). *Bombus o. occidentalis* colonies can contain as many as 1,685 workers and produce up to 360 new queens; this colony size is considered large relative to many other species of bumble bees (MacFarlane et al. 1994).

Floral Resources

Bumble bees, including *Bombus occidentalis occidentalis*, are generalist foragers and have been reported visiting a wide variety of flowering plants. *B. o. occidentalis* has a very short tongue, and thus is best suited to forage at open flowers with short corollas and has also been documented ‘nectar robbing’ – biting through the corolla tube and drinking nectar through the hole without contacting the anthers, or stigma of the plant – several species of flowers with longer corolla tubes. Bumble bees require plants that bloom and provide adequate nectar and pollen throughout the colony’s life cycle, which is from early February to late November for *B. o. occidentalis* (although the actual dates likely vary by elevation and local climatic conditions, including interannual variation). The plant genera most commonly associated with *B. o. occidentalis* observations or collections from California include *Cirsium* (36 observations), *Erigeron* (18), *Solidago* (16), “Aster” (14), *Ceanothus* (13), *Centaurea* (13), and *Penstemon* (13) (Richardson 2017). Similarly, in an analysis largely based on records from California, Thorp et al. (1983) reports that *B. o. occidentalis* records are primarily associated with plants in the Leguminosae (=Fabaceae), Compositae (=Asteraceae), Rhamnaceae, and Rosaceae families. Note that these floral associations do not necessarily represent *B. o. occidentalis*’ preference for these plants over other flowering plants, but rather may represent the abundance of these flowers in the landscape.

Overwintering Sites

Very little is known about the hibernacula, or overwintering sites utilized by most bumble bees, although Hobbs (1968) reported *B. occidentalis* hibernacula that were two inches deep in a “steep west slope of the mound of earth.” The closely related *B. terrestris* reportedly hibernates beneath trees (Sladen 1912; In Hobbs 1968).

Phenology

According to Thorp et al. (1983), the flight period for *Bombus occidentalis occidentalis* queens in California is from early February to late November, peaking in late June and late September. The flight period for workers and males in California is from early April to early November; worker abundance peaks in early August, and male abundance peaks in early September (Thorp et al. 1983). Rangewide, including the entire species complex (including *B. o. mckayi*), queens peak in late June, workers peak in early August, and males peak in late August (Williams et al. 2014).

Suckley Cuckoo Bumble Bee (*Bombus suckleyi*) Habitat Requirements

Bombus suckleyi habitat includes western meadows largely confined to mountainous regions. *B. suckleyi*, and other species of bumble bee in the subgenus *Psithyrus*, are unique in that they have an obligate dependency on social bumble bees (Goulson 2010) to collect pollen on which to rear their young. As such, *B. suckleyi* are a cuckoo species that are nest parasites of other species of bumble bees and are not primitively eusocial themselves – there is no division of labor within the species; all members of the species have equal status, and are reproductive. Cuckoo bumble bees typically emerge from their hibernacula later in the spring than other bumble bee species. Once the female cuckoo bumble bee does emerge, she forages for herself and begins searching for occupied nests. When she finds a suitable host (*B. suckleyi* utilizes *B. occidentalis* hosts [Thorp et al. 1983]) she enters the nest, kills or subdues the queen of that colony, and forcibly (using pheromones and/or physical attacks) "enslaves" the workers of that colony. Then she lays her own eggs and forces the workers of the native colony to feed her and her developing young. Since all of the resulting cuckoo bee offspring are reproductive (not workers), they leave the colony to mate, and the mated females seek out a place to overwinter, then repeat the cycle the following spring/early summer (Goulson 2010).

Cuckoo bumble bees often attack a broad range of host species, but some species specialize in attacking the members of just one species or subgenus. *B. suckleyi* has been recorded in nests of bumble bees in six different subgenera, but the most common association is with the subgenera *Pyrobombus* and *Bombus*, and the only nests in which *B. suckleyi* adults have been produced are those of *B. occidentalis* (reviewed in Thorp et al. 1983). As such, *B. suckleyi* has been documented breeding as a parasite of colonies of *Bombus occidentalis*, and has been recorded as present in the colonies of *B. terricola*, *B. rufocinctus*, *B. fervidus*, *B. nevadensis*, and *B. appositus* (Williams et al. 2014). Males of this species patrol circuits in search of mates (Thorp et al. 1983).

Nest Sites

Bombus suckleyi has been detected in the nests of several species of bumble bees, but it has only ever been observed reproducing in nests of *B. occidentalis* (Thorp et al. 1983). *B. occidentalis* nests are primarily in underground cavities such as old squirrel or other animal nests and in open

west-southwest slopes bordered by trees, although a few nests have been reported from above-ground locations such as in logs among railroad ties (Plath 1922; Hobbs 1968; Macfarlane et al. 1994; Thorp et al. 1983). Availability of nest sites for *B. occidentalis* may depend on rodent abundance (Evans et al. 2008). *B. occidentalis* nest tunnels have been reported to be up to 2.1 m long and the nests may be lined with grass or bird feathers (Macfarlane et al. 1994). *Bombus suckleyi* depends upon not only the presence of suitable nesting sites for *B. occidentalis*, but also upon extant populations of that species.

Floral Resources

Bumble bees require plants that bloom and provide adequate nectar and pollen throughout the colony's life cycle. In order for *B. suckleyi* to survive, there must also be early season resources for its host, *B. occidentalis*. There are records of *B. occidentalis* from early February to late November. The amount of pollen available in the landscape directly affects the number of new queens that a bumble bee colony can produce, and since queens are the reproductive members of the colony, pollen availability is directly related to future bumble bee population size (Burns 2004). Early spring and late fall are often periods with lower floral resources; the presence of flowering plants at these critical times is essential.

Bombus suckleyi is a generalist forager and has been reported to visit a wide variety of flowering plants. The known plant associations for this species in California are scarce, but generally this species is associated with plants in the following genera: "Aster", *Chrysothamnus*, *Cirsium*, *Solidago*, and *Centaurea* (Williams et al. 2014; Richardson 2017). Plant genera that are associated with *B. occidentalis occidentalis* – its known host, and a prerequisite for the survival of *B. suckleyi* include: *Cirsium* (36 observations), *Erigonum* (18), *Solidago* (16), "Aster" (14), *Ceanothus* (13), *Centaurea* (13), and *Penstemon* (13) (Richardson 2017). Note that these floral associations do not necessarily represent *B. occidentalis*' or *B. suckleyi*'s preference for these plants over other flowering plants, but rather may represent the abundance of these flowers in the landscape.

Overwintering Sites

Very little is known about the hibernacula, or overwintering sites, utilized by *Bombus suckleyi*, although generally bumble bee females are known to overwinter in soft, disturbed soil (Goulson 2010), or under leaf litter or other debris (Williams et al. 2014).

Phenology

According to Thorp et al. (1983), the flight period for *B. suckleyi* females in California is from late May to late October, peaking in June. The flight period for males in California is from early July to late September; peaking late July, with a second pulse late August and early September (Thorp et al. 1983).

V. FACTORS AFFECTING ABILITY TO SURVIVE AND REPRODUCE

Each of the following factors pose a substantial threat to the survival of the four species of bumble bees included in this petition: present or threatened modification or destruction of its habitat; overexploitation; competition; disease; and other natural events and human-related activities, including pesticide use, genetic factors, and climate change (reviewed in Williams and Osborne 2009; Williams et al. 2009; Goulson 2010; Cameron et al. 2011b; Hatfield et al. 2012; Fürst et al. 2014). In addition, the cuckoo bumble bee species (*Bombus suckleyi*) is threatened by loss of its primary host species, *B. occidentalis occidentalis*. Below we summarize the rationale and available evidence that each factor poses a threat to these four bumble bee species.

A. Present or Threatened Modification or Destruction of Habitat

1. The Loss of Habitat Due to Human Induced Landscape Scale Modifications

Many North American bumble bees face threats from habitat alterations that can interfere with primary habitat requirements, including access to: sufficient food (nectar and pollen from flowers), nesting sites (such as underground abandoned rodent cavities or above ground in clumps of grasses), and overwintering sites for hibernating queens (undisturbed soil and leaf litter).

Many bumble bees historically occupied the grasslands and prairies of the continent, including California, which have largely been lost or fragmented by agricultural conversion and urban development or transformed by fire suppression, invasive species, and livestock grazing. Noss et al. (1995) considers all native grasslands in California to be a critically endangered ecosystem, having declined by more than 98%. *Bombus crotchii* was historically known from throughout California's Central Valley, which once contained vast prairies rich with wildflowers. Indeed, historic accounts of the San Joaquin Valley describe abundant and widespread wildflowers; in 1868 John Muir wrote: "the valley of the San Joaquin is the floweriest piece of world I ever walked, one vast level, even flower-bed, a sheet of flowers...". The U.S. Geological Survey reports that more than 260,000 acres of grassland and shrubland habitat within California's Central Valley ecoregion were either developed for housing or converted to agriculture between 1980 and 2000 (Sleeter 2016) – accounting for nearly 4% of the 7 million acres that make up the Central Valley. A more recent study (Lark et al. 2015) highlights the rate of grassland conversion to agriculture across the U.S. from 2008-2012, and the rate of loss is more severe in California's Central Valley than any other ecoregion in the western US.

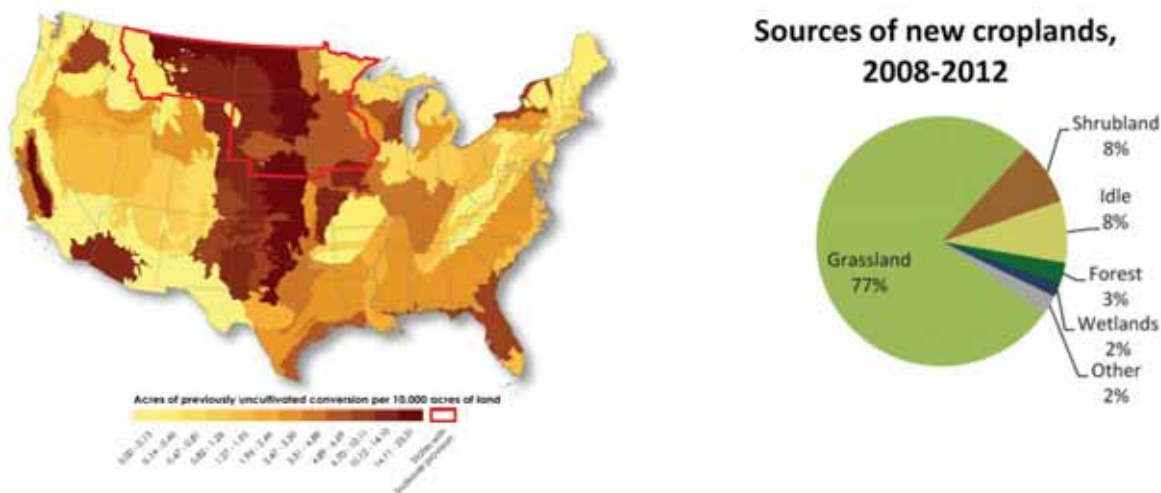


Figure 14: Left: 2008–2012 conversion of previously uncultivated land. The map identifies the amount of conversion to cropland from land that had not previously been used for agriculture (cropland or pasture), confirmed back to the early 1970s. Display units represent average number of previously uncultivated acres converted per 10 000 acres of total land within each EPA Level III Ecoregion. Red outline is of the six states covered under the 2014 US Farm Bill ‘Sodsaver’ provision, which aims to reduce conversion of previously uncultivated land. The observed patterns of elevated nationwide conversion suggest that the new policy’s limited geographic coverage will likely be insufficient to prevent the majority of new breakings. Right: Types of land converted to crop production. Grasslands were the most common land cover to be converted to cropland, followed by shrubland and long term (10+ year) idle land. Figures from Lark et al. (2015).

In addition to the endangerment of critical prairie ecosystems, mountain meadows throughout the western United States are also a highly imperiled ecosystem, and are experiencing continued threats from climate change (Field et al. 2007; Parry et al. 2007; Saunders et al. 2008), livestock grazing (Belsky et al. 1999; Hayes & Holl 2003; Stoner & Joern 2004; Hatfield & LeBuhn 2007), and forest encroachment (Skinner 1995; Coop & Givnish 2007; Zald et al. 2012; Highland & Jones 2014). Recent analyses of western meadows in Oregon and Washington, which provide important habitat for bumble bees (Goulson 2010; Williams et al. 2014), indicate that they have lost between 18% and 40% of their area due to encroaching conifers (Skinner 1995; Coop & Givnish 2007). Several of the bees in this petition are known from montane meadows (including: *Bombus occidentalis occidentalis*, *B. franklini*, and *B. suckleyi*). Montane meadows may become particularly important habitats for declining bumble bee species as the climate warms and habitat loss in valleys and low elevation prairies increases.

Bumble bee species richness, abundance, and genetic diversity are influenced by the quality of habitat on a landscape level. While bumble bees can forage and disperse over relatively long distances, isolated patches of habitat may not be sufficient to support bumble bee populations (Hatfield & LeBuhn 2007; Öckinger & Smith 2007). Because of their unique method of sex determination and their colonial life cycle, bumble bees are particularly sensitive to habitat fragmentation and populations of bumble bees existing in fragmented habitats can also face

problems with inbreeding depression (Darvill et al. 2006; 2012; Ellis et al. 2006). Specifically, Darvill et al. (2012) found that bumble bee populations limited to less than 15 km² of habitat were more likely to show signs of inbreeding. Goulson (2010) suggests that a viable population of bumble bees probably requires approximately 3.3-10 km² of suitable habitat. Habitat fragmentation has been shown to reduce bumble bee foraging rates and alter their foraging patterns (Rusterholz and Baur 2010). Fragmented habitats may not support healthy metapopulation structures and may eliminate or decrease source populations of bumble bees for recolonization (National Research Council 2007). A study in California found that inbreeding in one common species of bumble bee (*B. vosnesenskii*) was lower in landscapes with increasing natural woodland cover relative to other landscape types (Jha 2015). Thus, agricultural intensification, livestock grazing, urban development, as well as other habitat modifications, can jeopardize the habitat needs of bumble bees and lead to the fragmentation of habitat into pieces that are too small or too distant to support diverse bumble bee communities (Goulson et al. 2008). The major landscape-scale modifications and their threats to bumble bees are outlined below.

i. Agricultural Intensification

The biggest changes within the range of the species in this petition have come from modern farming techniques that have enabled more intensive use of agricultural lands, widespread grazing of grasslands and meadows, and increased use of insecticides (reviewed in Hatfield et al. 2012). Agricultural intensification has been shown to have a negative impact on species richness, abundance and diversity of wild bees (Le Féon et al. 2010). Agricultural intensification is primarily blamed for the decline of bumble bees in Europe (Williams 1986; Carvell et al. 2006; Diekötter et al. 2006; Fitzpatrick et al. 2007; Kosior et al. 2007; Goulson et al. 2008), and may also pose a significant threat to bumble bees in the US (Hines & Hendrix 2005; Grixti et al. 2009). In fact, agricultural intensification and rapid urbanization in California's Central Valley may have reduced populations of *B. crotchii*, since this species was historically common in the Central Valley but now appears to be absent from much of its historic range, especially in the central part (Thorp 2014, pers. comm.; Hatfield et al. 2015a). Furthermore, increases in farm size and changes in technology and operating efficiency have led to many practices that can be detrimental to bumble bees. This has led to the loss of pollinator friendly hedgerows, weed cover, and legume pastures through more modern practices including more effective land leveling, irrigation, tilling, and pesticide and fertilizer usage. Tilling may directly destroy bumble bee overwintering sites and bumble bee nests may be at risk of being destroyed by farm machinery (Goulson 2003). One site within *Bombus franklini*'s historic range near Gold Hill in Jackson County, OR had significant excavation and deposited soil that altered approximately 50% of the bumble bee foraging habitat. The widespread application of the herbicide glyphosate in conjunction with increased planting of genetically modified crops that are tolerant to glyphosate has reduced the availability of milkweeds in agricultural field margins (Pleasants & Oberhauser 2013), and has probably had a similar effect on other wildflower species, which

would have also provided important nectar resources for bumble bees. In northern Alberta, one study found that genetically modified herbicide tolerant canola fields had a lower abundance of wild bees than conventional or organic canola fields (Morandin and Winston 2005). The broad scale use of pesticides, including a novel class of systemic insecticides (neonicotinoids), poses a unique threat to bumble bees; this topic is discussed in detail below under Factor E *Other Natural Events or Human-related Activities*.

Both floral abundance and grasslands are frequently reduced in agriculturally intensive landscapes. Hines and Hendrix (2005) found that bumble bee diversity in Iowa prairies was linked to floral abundance and the presence of grasslands in the surrounding landscape, both of which have been reduced in modern agricultural landscapes. Although some flowering crops provide nectar and pollen resources for bumble bees, which can lead to increased densities of bumble bees and colony growth (Westphal et al. 2003; 2009), large monocultures do not necessarily improve the reproductive success of bumble bees (Westphal et al. 2009); likely because the resources they provide are typically only available for a short period of time. Monocultures may in fact serve as population sinks since bumble bee colonies need floral resources throughout their colony cycle from early spring to fall (Goulson et al. 2008).

ii. Livestock Grazing

Ungulate grazing can significantly alter the landscape. Studies have shown that grazing can have both indirect and direct effects on bumble bee populations. Indirect effects include removing floral resources (Morris 1967; Sugden 1985; Kruess and Tscharntke 2002a; 2002b; Vazquez and Simberloff 2003; Hatfield and LeBuhn 2007; Xie et al. 2008; Kimoto 2010; Scohier et al. 2012) and potentially reducing populations of nesting rodents (e.g., Bueno et al. 2011), which in turn may reduce the number of nest sites available to bumble bees (Johnson & Horn 2008; Schmidt et al. 2009). Ungulates can directly affect above ground bumble bee nests by trampling (Sugden 1985). The habitat, type of grazer, as well as the timing, intensity, and length of livestock grazing are all factors that can influence how the practice affects flora and fauna (Gibson et al. 1992; Carvell 2002; Sjodin 2007). Numerous studies have found intensive sheep grazing to be particularly detrimental to bumble bee populations (Carvell 2002; Hatfield and LeBuhn 2007; Scohier et al. 2012), an effect that is likely due to the selective removal of flowers by sheep. In California, BLM and Forest Service lands historically occupied by *Bombus franklini* are periodically subject to substantial livestock impact. Although livestock grazing has differing impacts on flora and fauna based on the type, habitat, intensity, timing and length of livestock grazing (Gibson et al. 1992), several studies of livestock grazing on bees suggest increased intensity of livestock grazing negatively affects the species richness of bees (Morris 1967; Sugden 1985; Carvell 2002; Vazquez & Simberloff 2003; Hatfield & LeBuhn 2007).

iii. Urban Development

The conversion of the landscape to urban and suburban uses continues to transform and fragment

habitat, which has likely had a negative effect on populations of many bumble bee species, including the species listed in this petition. Roads and railroads fragment plant populations and thus restrict the movement of bumble bees (Bhattacharya et al. 2003). Recent research in northern California found that the overall area of the landscape covered by pavement had a negative effect on the density of bumble bee nests. In addition, bumble bee colony density was greater in natural oak chaparral than other landscape types, including urban areas (Jha & Kremen 2012). The western bumble bee has been found in some natural areas within urban environments, such as parks, restored prairies, and other natural areas near urban centers (Williams et al. 2014). Some residential gardens and urban parks can provide valuable floral, and in some cases, nesting and overwintering resources, and may serve as important habitat refuges for bumble bees (Frankie et al. 2005; McFrederick & LeBuhn 2006; Goulson 2010), even though they may not support the species richness that was found historically (McFrederick & LeBuhn 2006).

iv. Fire and Fire Suppression

Fire is an important natural and managed disturbance throughout natural areas in the United States. Historically, fires maintained forbs and grasses within meadows and prairies, and prevented shrubs and trees from encroaching. Due to decades of fire suppression and the growing proximity of housing developments to wildlands, suppression of wildfire is seen as necessary to protect natural resources, homes, and businesses (Radeloff et al. 2018). Fire suppression can lead to extensive changes in vegetation structure, including degradation and loss of grasslands and herbaceous species as the shrub community matures (Schultz & Crone 1998; Panzer 2002). The practice of fire suppression has compromised grassland habitats that formerly supported diverse communities of bumble bees. In forests, these changes include an increase in combustible fuel loads, increase in tree density, increase in fire intolerant species, and loss of the herbaceous layer as the shrub community matures (Huntzinger 2003). In forested meadows fire suppression can lead to invasion and maturation of shrubs and trees and an increase in invasive plants species. Eventually continued succession results in the degradation and loss of the grasslands (Schultz & Crone 1998; Panzer 2002). Forest encroachment not only reduces available bumble bee habitat, but also closes off corridors between meadows, which reduces dispersal and foraging opportunities (Roland & Matter 2007). Continued fire suppression not only results in habitat alteration, but also renders the habitat susceptible to catastrophic, large scale, and high temperature fires due to increases in combustible fuel loads, tree density, and fire intolerant species (Huntzinger 2003). Catastrophic, large scale, and high intensity fires may be particularly harmful to already vulnerable populations of bumble bees listed in this petition. The threat is particularly acute for *B. franklini*, as a single fire event in an area where *B. franklini* are concentrated could extirpate an entire population. Prescribed fire can be a valuable tool in restoring native prairie and meadow plant fauna, which in turn has the potential to benefit bumble bees. However, natural or introduced fire can be detrimental to bumble bee populations if not planned and executed carefully with the life history needs of bumble bees considered.

2. The Loss of Habitat Due to Increased Use of Herbicides

Herbicides are often used within invasive weed management, and can be more cost effective than other management methods. However, the use of herbicides to control weeds can indirectly harm pollinators through removal of flowers that once provided them with pollen and nectar resources (Williams 1986; Shepherd et al. 2003, Pleasants & Oberhauser 2013). In addition to indirect effects, some herbicides can directly harm pollinators.

Just as pollinators can influence the plant community, changes in vegetation can have an impact on pollinators (Kearns & Inouye 1997). The broadcast application of a non-selective herbicide can indiscriminately reduce floral resources for all bumble bees and nesting habitat for species that nest above ground, such as the American bumble bee (Smallidge & Leopold 1997). Bumble bees require consistent sources of nectar, pollen, and nesting material during times adults are active, typically from mid-February to late September in temperate areas. The reduction in resources caused by non-selective herbicide use could cause a decline in bumble bee reproductive success and/or survival rates. Kevan (1999) found that herbicides reduced Asteraceae and Lamiaceae flowers in France, contributing to a decline in bumble bee populations. Kevan (1999) also found that herbicide applications have reduced the reproductive success of blueberry pollinators by limiting alternative food sources that can sustain the insects when the blueberries are not in bloom. Kearns et al. (1998) state “herbicide use affects pollinators by reducing the availability of nectar plants. In some circumstances, herbicides appear to have a greater effect than insecticides on wild bee populations... Some of these bee populations show massive declines due to the lack of suitable nesting sites and alternative food plants.”

The use of the herbicide glyphosate has dramatically increased with the widespread planting of genetically modified glyphosate-tolerant corn, soybean, and cotton, which were introduced in the late 1990s (Pleasants & Oberhauser 2013). With the introduction of genetically modified glyphosate tolerant (Roundup ReadyTM) soybeans in 1996 and corn in 1998, a 20-fold increase in the use of the herbicide glyphosate has occurred on these two crops from 1995-2013 (Center for Biological Diversity et al. 2014). Increased use of glyphosate in agricultural areas has likely led to the reduced availability of wildflowers in field margins – which otherwise would have been an important resource for bumble bees. Moreover, recent research showed that genetically modified glyphosate-tolerant soybean fields with standard and recommended application rates of glyphosate had lower diversity of flowering weeds than control fields (Scursoni et al. 2006). The loss of flowering weeds from agricultural areas that have become genetically modified during the period from 1996-present has likely deprived many of these species of bumble bees of significant amounts of nectar and pollen, and the continued loss of these critical resources presents a threat to the future survival of these species. Moreover, recent research within the Midwest has shown that simplification of landscapes through intensive agriculture leads to more pest pressure, and

thus increased application of insecticides (Meehan et al. 2011). Thus, the conversion of habitat to intensive agriculture throughout much of the United States, the increased use of glyphosate resistant crops, and the subsequent increase in insecticide use has likely had a compounding negative effect on bumble bees. Research has shown that genetically modified glyphosate-tolerant soybean fields with standard and recommended application rates of glyphosate had lower diversity of flowering weeds than control fields (Scursoni et al. 2006). Other studies have shown that agricultural lands without native habitat host a less diverse pollinator community (Kremen et al. 2002; Winfree et al. 2008; Morandin & Kremen 2013).

Recent studies (Dai et al. 2018; Motta et al. 2018) also raise the novel concern that glyphosate can negatively affect the beneficial bacterial colonies found in the honey bee gut thus indirectly affecting the health of bees. Motta et al. 2018 found that young worker bees exposed to field realistic levels of glyphosate experienced increase mortality with subsequent exposure to pathogens. The researchers' results indicate that the increased mortality was due to glyphosate reducing the protective effect of the gut microbiota.

Bumble bees could also be further threatened by the introduction of new herbicide-resistant crops that are genetically engineered to be resistant to multiple herbicides including 2,4-D and dicamba; many growers are switching to dicamba as weeds develop resistance to the herbicide glyphosate. The U.S. Department of Agriculture has recently approved a suite of 'next generation' genetically engineered (GE) herbicide resistant corn and soybeans developed by Dow Agrosiences and soy and cotton developed by Monsanto, which will be sold in conjunction with new combinations of herbicides. These GE crops are resistant to the herbicides 2,4-D, dicamba, and glyphosate (Roundup Ready Xtend™ by Monsanto). The use of herbicides is expected to increase with the adoption of these 'next generation' GE crops (Mortensen et al. 2012). Dicamba and 2,4-D are already among the leading herbicides that cause drift-related crop injury because of their volatility (Freese and Crouch 2015 and references therein). Because of the increased volatility of dicamba and 2,4-D over glyphosate (which is currently the most widely used herbicide in the U.S.), the loss of flowering weeds and wildflowers growing within and adjacent to agricultural land within the range of imperiled bumble bees is expected to be more significant than at present.

As recently as 2015, 2,4-D and dicamba were already used widely within California's Central Valley on multiple crops (USGS 2017a; 2017b), and expanded use of these herbicides is expected to have a major negative impact on populations of already vulnerable bumble bees collecting nectar and pollen from weeds and wildflowers growing near crops. It is likely that the non-target effects of the new uses of these weed control technologies may have a dramatic impact on populations of imperiled bumble bees, given the portion of their selected ranges that overlap with modified corn, soybean, and cotton production.

Beyond impacts to forage, paraquat, 2,4-D, and dicamba may also be directly toxic to bumble bees. Paraquat was found to negatively affect honey bee larvae (Cousin et al. 2013). While 2,4-D has been designated by the U.S. EPA as practically non-toxic to bees it is on the cusp of being ranked as moderately toxic. Dicamba's toxicity ranges from moderately toxic to practically non-toxic depending on the route of exposure (U.S. EPA 2000). The toxicity classification that U.S. EPA uses is driven by a pesticide's LD50 (the lethal dose that kills 50% of the test population). If the pesticide's LD50 is 2 µg/bee or less it is considered highly toxic to bees. If the LD50 is greater than 2 µg/bee but less than 11 µg/bee it is moderately toxic. It is considered practically non-toxic if the LD50 is 11 µg/bee or more. 2,4-D has a reported LD50 of 11.5 µg/bee. Dicamba has an oral LD50 of 3.6 µg/bee, but a contact LD50 of >100 µg/bee. This very blunt measure of risk may underestimate the direct impacts that 2,4-D and dicamba could have on bumble bees, especially since the test subject for these chemicals was the European honey bee, which has been shown to be a poor surrogate for non-*Apis* bees (Wisk et al. 2014). The increasing use of these herbicides should be considered a threat to the continued survival of these imperiled bumble bees due to both the anticipated indirect effects (through destruction of floral resources) and direct effects (through direct toxicity).

The range of two of the species listed in this petition (*Bombus crotchii* and *B. occidentalis occidentalis*) overlaps, at least in part, with the Central Valley of California, which has been subjected to high uses of glyphosate; which is the most commonly used pesticide within the state of California (CA DPR 2014). *B. crotchii* has experienced more significant declines in the Central Valley than it has at the edges of its range (Hatfield et al. 2015a; see Figure 1 in Section II); intensive agriculture and associated herbicide use may be responsible for this pattern. Moreover, glyphosate was used for agricultural purposes in 98% of counties in the lower 48 states. The widespread use of glyphosate is a threat to the continued existence of all four petitioned bumble bee species.

In summary, the evidence presented above shows clearly that 1) the use of herbicides has both direct (2,4-D, paraquat dichloride and dicamba are toxic to bees) and indirect (removal of floral resources) effects on bumble bee populations; and 2) the use of herbicides is widespread and pervasive throughout the range of all the bumble bees listed in this petition. As such, herbicides pose a direct threat to the continued existence of each species included in this petition.

B. Overexploitation

While specimens of female workers or males are occasionally collected for research purposes, scientific and/or recreational collection probably does not pose a threat to the overall survival of the species in this petition. In fact, collection of female workers of each of these species since the late 1800s has contributed essential information to understanding species' historic ranges and

conservation statuses. However, if bumble bee queens are collected, the entire colony will be effectively eliminated. Collection of queens or large numbers of workers or males from populations that are already small and isolated could threaten these species with extinction, although there is no evidence that this practice is occurring with these species.

To the best of the petitioners' knowledge, none of the petitioned species are currently being produced or sold commercially. However, in the early 1990s, *B. occidentalis* was produced commercially (Flanders et al. 2003) by both of the two primary commercial bumble bee producers operating in North America (Koppert Biological Systems and Biobest) and distributed for pollination use in the western U.S. In 1995, one company reported a mass outbreak of the fungal pathogen *Nosema bombi* in commercial colonies of *B. occidentalis* (Flanders et al. 2003). By 1997, commercial production of the western bumble bee stopped, as producers were no longer able to contend with the pathogen outbreaks (Velthuis & Van Doorn 2006). Currently in North America, the common eastern bumble bee (*Bombus impatiens*) is produced on a large scale; over a million commercially produced bumble bee colonies are imported annually across the globe to pollinate greenhouse crops (Velthuis and Van Doorn 2006). Commercial bumble bees are used in both greenhouse and open field pollination throughout the U.S. (except in Oregon, where use is prohibited, and California, where only greenhouse use is allowed), and two western species – Hunt's bumble bee (*Bombus huntii*) (APHIS 2014; Biobest Group 2018a [advertises *B. huntii* for use in indoor crops; though at the time of submission of this petition it is not currently available in the western U.S.]; 2018b) and the yellow faced bumble bee (*Bombus vosnesenskii*) (I. Noell, USFS, pers. comm. with R. Hatfield 2016) are being developed for larger scale commercial production. The commercial production and release into the wild of these three species of bumble bees poses a threat to the petitioned species because pathogens may be amplified in commercial rearing facilities and then spill over into wild populations, or novel pathogens may be introduced, since commercial bumble bees are currently reared in facilities outside of their native ranges or moved to areas beyond their native ranges (Meeus et al. 2011). The risk of disease transfer via commercial bumble bees is further discussed in Factor D: *Disease*.

Though overexploitation does not currently pose a substantial threat to the species included in this petition, there is strong evidence to suggest that historically the commercial production of one subspecies petitioned here – *Bombus occidentalis occidentalis* – and the associated amplification of fungal pathogens in commercial colonies led to the dramatic decline of populations of this subspecies from the wild (Cameron et al. 2016). Furthermore, the commercial propagation and release of other species of bumble bees (*Bombus impatiens*, *Bombus vosnesenskii*, and *Bombus huntii* in the U.S.) poses a significant threat to all of the species in this petition via amplification and spread of disease and competition, and thus this factor is considered in this petition.

C. Competition with Managed Honey Bees

A single honey bee colony requires substantial resources to survive. Estimates of single hive consumption vary from 20-130 lbs/year for pollen and 45-330 lbs/year of honey – representing 120-900 lbs/year of nectar (Goulson 2003, and references therein). Cane and Tepedino (2016) estimate that in three months a 40 hive apiary would remove enough pollen resources from the surrounding area that would have supported the development of 4,000,000 native bees.

Depending on the environment and the density of honey bee hives in an area and the time of year, this could represent a substantial percentage of the resources available and has the potential to affect native bee populations. Recent research has also documented that under controlled conditions honey bees displaced native bees from flowers, altered the suite of flowers that native bees were visiting, and had a negative impact on native bee reproduction (Hudewenz and Klein 2015). The proportion of resources used by honey bees, as well as the effects of this resource depletion on the native bee community are likely to vary by location, the time of year, the species involved, floral abundance and diversity, and climatic and other environmental conditions.

A recent comprehensive review of the effects of managed bees (including honey bees) on native bee populations found that the majority of studies conclude that managed bees have a negative effect on native bees via competition, change in plant community, and disease transmission (Mallinger et al. 2017). Mallinger et al. (2017) also acknowledge the need for additional research investigating the effects of managed bees on bee fitness, as well as population and community level effects. While there remains a need for additional research, there is evidence that honey bees can potentially impact the native bee community by removing the available supplies of pollen and nectar (Anderson & Anderson 1989; Paton 1990, 1996; Wills et al. 1990; Dafni & Shmida 1996; Horskins & Turner 1999; Cane & Tepedino 2016), or by competitively excluding native bees, thus forcing them to switch to other, less abundant, and less rewarding plant species (Wratt 1968; Eickwort & Ginsberg 1980; Pleasants 1981; Ginsberg 1983; Paton 1993; 1996; Buchmann 1996; Horskins & Turner 1999; Dupont et al. 2004; Thomson 2004; Walther-Hellwig et al. 2006; Tepedino et al. 2007; Roubik 2009; Shavit et al. 2009; Hudewenz & Klein 2013; Rogers et al. 2013; but see Butz-Huryn 1997; Steffan-Dewenter & Tschardt 2000; Minckley et al. 2003) – but none of these studies have addressed population level effects on native bees.

Additional research demonstrates that honey bees are regularly using, and depleting, the most abundant resources in the surrounding environment (Paton 1996; Mallick & Driessen 2009; Shavit et al. 2009), and that upon removal of honey bees, native bees exhibit signs of competitive release by returning to plants that were formerly used by honey bees (Pleasants 1981; Wenner & Thorp 1994; Thorp 1996; Thorp et al. 2000). The long-term implications of this shift in resource use are not entirely clear, although there is a growing body of research on bumble bees that

demonstrates negative competitive effects of honey bees on bumble bees, including lower reproductive success, smaller body size, and changes in bumble bee foraging behavior – notably a reduction in pollen gathering (Evans 2001; Goulson et al. 2002; Thomson 2004; 2006; Paini & Roberts 2005; Walther-Hellwig et al. 2006; Goulson & Sparrow 2009; Elbgami et al. 2014).

Because of the threats mentioned above, one recent review paper concludes that honey bees are inappropriate in protected areas where they pose the biggest threat to wild bee populations (Geldmann and González-Varo 2018); the same could be said for the placement of honey bees near species of conservation concern. In summary, competition with honey bees, along with the threat of disease transmission pose a significant threat to the four petitioned bumble bee species.

D. Disease

1. Pathogens and Parasites of Bumble Bees

The spillover, spillback, and facilitation of infectious diseases from domesticated livestock to wildlife populations is one of the main sources of emerging infectious disease, which pose a major threat to a wide variety of wildlife species (Daszak et al. 2000; Fürst et al. 2014; Graystock et al. 2015a; McMahon et al. 2015), including high profile declines of many bat and amphibian species caused by emerging infectious diseases. While this phenomenon has not been well studied in invertebrates, there is recent evidence of the transmission of pathogens from commercial bumble bees to wild bumble bees and pathogens have been implicated in the decline of both *B. franklini* and *B. occidentalis occidentalis* (Colla et al. 2006; Otterstatter & Thomson 2008; Murray et al. 2013; Graystock et al. 2015a; Cameron et al. 2016). Worldwide, reported pathogens and parasites of bumble bees include: viruses, bacteria, fungi, protozoa, nematodes, hymenopteran and dipteran parasitoids, one lepidopteran parasite, and mites (Acari) (Schmid-Hempel 2001). Pathogen prevalence and fitness effects in wild North American bumble bees are generally not well understood. However, the microparasites and macroparasites that have been identified as pathogens of concern to wild North American bumble bees (Cameron et al. 2011b) are discussed below. Pathogens and parasites pose a substantial threat to the continued survival of all of the species included in this petition.

i. Microparasites

Nosema bombi

Nosema bombi is a microsporidian parasite that infects bumble bees primarily in the malpighian tubules, but also in fat bodies, nerve cells, and sometimes the tracheae (Macfarlane et al. 1995). Colonies can appear to be healthy but still carry *N. bombi* (Larsson 2007) and transmit it to other colonies. *N. bombi* can reduce colony fitness, as well as reduce individual reproduction rate and life span in bumble bees (Schmid-Hempel & Loosli 1998; Schmid-Hempel 2001; Colla et al. 2006; Otti & Schmid-Hempel 2007; 2008; van der Steen 2008; Rutrecht & Brown 2009). This

parasite has been observed recently in wild bumble bees throughout North America (Colla et al. 2006; Gillespie 2010; Cameron et al. 2011a; Kissinger et al. 2011; Cordes et al. 2012).

Cameron et al. (2011a) found a significantly higher prevalence of *N. bombi* in declining North American bumble bee species (*Bombus occidentalis* and *B. pensylvanicus* [American bumble bee]). In the same study, *N. bombi* infection was significantly lower in species that have not exhibited recent declines in range and relative abundance (Cameron et al. 2011a). Blaker et al. (2014) also found an increased prevalence of *N. bombi* in *B. occidentalis* than sympatric species that have not exhibited population declines. These studies indicate that *N. bombi* is a threat to the continued existence of *B. occidentalis*. Since the western bumble bee is host to the Suckley cuckoo bumble bee (Williams et al. 2014) – *N. bombi* is a threat to the continued existence of this species as well.

Nosema ceranae

While the primary disease implicated in recent bumble bee declines is the microsporidian *Nosema bombi*, bumble bees have recently been seen to harbor *Nosema ceranae*, a common disease of honey bees that can be particularly virulent to honey bee colonies, and has been implicated as a factor in Colony Collapse Disorder (Paxton 2010; Fürst et al. 2014). *N. ceranae* has recently been detected in honey bees in Canada, and the United States (Williams et al. 2008b), and more recently been detected in bumble bees in South America (Plischuk et al. 2009) and Europe (Graystock et al. 2013a; Fürst et al. 2014). It is likely only a matter of time until this pathogen is detected in wild bumble bees in North America. Recent studies have shown that *N. ceranae* is easily transferred to bumble bees, and was found in all species of bumble bees tested in Europe (Graystock et al. 2013a). In laboratory experiments, virulence of *N. ceranae* in infected bumble bees was very high, reducing survival by 48% (Graystock et al. 2013a). Graystock et al. (2013a) conclude that *N. ceranae* represents a real and emerging threat to bumblebees, with the potential to have devastating consequences for their already vulnerable populations.

While to our knowledge *N. ceranae* has not been detected in any of the species in this petition, this microsporidian represents a current and potential threat to their populations. Recent studies have shown that pathogen transmission (including *N. ceranae*) between honey bees and bumble bees is readily occurring at flowers (Graystock et al. 2015b) and the range of all bumble bees in this petition overlaps with the range of both feral and managed honey bees. Furthermore, honey bees are both resident and regular migrants throughout the range of all of these bumble bees, thus, there is a clear vector for transmission of *N. ceranae* to all of the bumble bees in this petition. The uncertainty around the effects that this pathogen may have on wild bumble bees deserve further scrutiny and cautionary action; they should not be dismissed as a threat to the continued survival of the species in this petition.

Crithidia species

Crithidia bombi is a trypanosome protozoan that can dramatically reduce bumble bee longevity and colony fitness (Brown et al. 2003; Otterstatter & Whidden 2004), interfere with learning among bumble bee foragers (Otterstatter et al. 2005), increase ovary development in workers (Shykoff & Schmid-Hempel 1991), and decrease pollen loads carried by workers (Shykoff and Schmid-Hempel 1991). In the UK, researchers found a higher prevalence of the pathogen *C. bombi* in bumble bee populations with reduced genetic diversity, suggesting that as populations become smaller and lose heterozygosity, the impact of this parasite will increase (Whitehorn et al. 2011), pushing already at-risk populations closer to extinction. Moreover, there may be a synergistic effect between the effects of pesticides and disease. A recent laboratory study demonstrated that chronic exposure to low, realistic doses of two neonicotinoid insecticides, when combined with a sublethal infection of *C. bombi*, significantly reduced bumble bee queen survival (Fauser-Misslin et al. 2014).

Crithidia expoeki is a recently identified protozoan characterized from bumble bees collected in North America (Alaska) and Switzerland (Schmid-Hempel & Tognazzo 2010) that may also present a serious threat to wild populations of bumble bees. The increasing prevalence of these two species of *Crithidia* is an emerging and increasing threat to the bumble bees included in this petition.

B. occidentalis, the parent species to *B. occidentalis occidentalis* in this petition has been shown to be infected with *Crithidia bombi* (or *C. expoeki*) (Gillespie 2010; Cordes et al. 2012). One additional species in this petition was tested for infection by Cordes et al. (2012), however, because of their extreme rarity in the landscape, collection rates were very low for this species (*B. suckleyi*, N=4) and *C. bombi* was not detected (Cordes et al. 2012). Cordes et al. (2012) found *Crithidia sp.* in all regions of the United States in 15 different bumble bee host species.

Apicystis bombi

Apicystis bombi is a neogregarine protozoa that has been shown to infect 7.4% of American bumble bee queens in Ontario, Canada (Macfarlane et al. 1995). This parasite is associated with rapid death of infected bumble bee queens early in the season (Macfarlane et al. 1995; Rutrecht & Brown 2008). It has also been shown to inhibit ovary development and reduce queen longevity (Rutrecht & Brown 2008). More research is needed to understand causal effects that this parasite has on bumble bees and how this parasite is transmitted. This parasite has been found in commercial bumble bee colonies (Meeus et al. 2011), and researchers suggest that this pathogen may have been introduced from Europe to NW Patagonia, Argentina on commercial bumble bees, potentially causing an observed population collapse in a native bumble bee species (Arbetman et al. 2013; Maharramov et al. 2013). In a study in Mexico, *A. bombi* was the most frequently encountered pathogen in commercial bumble bee colonies (of *Bombus impatiens* - the

species of bumble bee most commercially available in the United States) that were tested for emerging infectious diseases (Sachman-Ruiz et al. 2015). As shown above, because of its virulence, its apparent widespread infection of wild bumble bees throughout North America, and its high prevalence in commercial bumble bees, *A. bombi* poses a serious potential threat to the continued survival of the bumble bees named in this petition.

Apicystis bombi has recently been detected in northern California and Oregon (Kissinger et al. 2011), which is within the current range of all of the species included in this petition, except *Bombus crotchii*. It is notable that in 2006-2007 all species included in this petition and within the range of the study were so rare (or absent) that they were not detected in the surveys by Kissinger et al. (2011). Since this pathogen has a detrimental effect on queens it can directly impact entire colonies of bumble bees. As such, it is a threat to the continued existence of all of the species in this petition.

RNA viruses

RNA viruses that have historically been considered to be specific to honey bees (*Apis mellifera*), including Israeli acute paralysis virus, black queen cell virus, sacbrood virus, Deformed Wing Virus (DWV), and Kashmir bee virus, have been recently detected in wild North American bumble bees foraging near apiaries (Singh et al. 2010). Recent research has emerged that documents the transmission of diseases from managed bees (both European honey bees and commercial bumble bees) to wild pollinators. These studies have demonstrated the threat that RNA viruses pose (Fürst et al. 2014; Manley et al. 2015; McMahon et al. 2015). DWV, which is associated with severe winter losses in honey bees (Highfield et al. 2009), was also detected in bumble bees in Germany, and the infected bumble bees displayed the same deformities that are typical of infected honey bees (Genersch et al. 2006). To understand the extent of the threat to wild bumble bees, the prevalence of these viruses in wild populations of bumble bees, as well as their effects on bumble bee fitness, are in urgent need of further study. While further study is needed, RNA viruses such as DWV have been shown to be virulent to bumble bees, resulting in malformed wings, non-viable offspring, and reduced longevity (Fürst et al. 2014). And, there is a growing body of evidence that RNA viruses can be transmitted between managed bees and wild bees on flowers (Manley et al. 2015).

While most of the recent research has been conducted in Europe, these same pathogens exist within the historic and current range of the bumble bees in this petition, and the pathogen spillover from honey bees and commercial bumble bees poses a significant threat to them. Since honey bees and commercial bumble bees (documented vectors for RNA viruses) are used throughout the United States, and within the range of all four species in this petition, RNA viruses are a clear threat to the continued existence of all of these animals.

ii. Macroparasites

Locustacarus buchneri

Bumble bees are often infected by mites. While many external mites can be relatively benign, many internal mites can be particularly virulent (Plischuk et al. 2013). This includes *Locustacarus buchneri*, a species that parasitizes the trachea of bumble bees (Husband & Shina 1970). *L. buchneri* is associated with reduced foraging and lethargic behavior (Husband & Shina 1970) and a significantly reduced lifespan in male bumble bees (Otterstatter & Whidden 2004). Otterstatter and Whidden (2004) reported that this mite was most prevalent in bumble bees of the subgenus *Bombus sensu stricto* (*B. occidentalis*, *B. moderatus*, *B. terricola*) in a study in southwestern Alberta. The internal mite was also reported in *B. bellicosus* and one of *B. atratus* (both in the subgenus *Thoracobombus*) from Argentina (Plischuk et al. 2013) and from the majority of populations of *B. jonellus* (subgenus *Pyrobombus*) and *B. muscorum* (subgenus *Thoracobombus*) in the United Kingdom (Whitehorn et al. 2014). Significantly, populations in this study that had high infection rates of *L. Buchneri* also had lower genetic diversity than populations that were not infected (Whitehorn et al. 2014). This suggests that small populations that may already be suffering from reduced genetic diversity may be particularly susceptible to this tracheal mite. Importantly *L. buchneri* was also detected in commercial *Bombus impatiens* colonies found in greenhouses in Mexico (Sachman-Ruiz et al. 2015) suggesting that commercial bumble bees may be a source of this tracheal mite for wild bumble bees. The presence of this mite in commercial bumble bee colonies in North America (Mexico), and the apparent susceptibility of populations with reduced genetic diversity to infection, suggest that this macroparasite is a threat to the continued existence of the four petitioned bumble bee species.

Sphaerularia bombi

Sphaerularia bombi is an entomopathogenic nematode that infects hibernating bumble bee queens and sterilizes them (Schmid-Hempel 2001). In a literature review, Macfarlane et al. (1995) notes that bumble bee queens infected with this parasite in New Zealand colonized new areas at a rate of less than 1% of that of healthy queens. Infected queens do not initiate a nest, but do continue to visit flowers (Kadoya & Ishii 2015). Because queens are foraging later in the summer there is evidence that through manipulation of behavior infected queens can negatively affect uninfected workers of conspecific and sympatric *Bombus* species through competition (Kadoya & Ishii 2015). This parasite has been detected in 16 species in North America (Macfarlane et al. 1995; Maxfield-Taylor et al. 2011), and may pose a threat to the long-term survival of the species in this petition.

2. Pathogen Spillover

The spread of pathogens to bumble bees from the domesticated common eastern bumble bee (*Bombus impatiens*) and other species of bumble bees that are currently being developed for commercial use threatens the species included in this petition with extinction. In addition, RNA

viruses from the domesticated honey bee (*Apis mellifera*) can be transmitted to bumble bees at shared flowers (Singh et al. 2010; Graystock et al. 2015a, 2015b; Manley et al. 2015; McMahon et al. 2015), and pose a novel threat to bumble bees.

i. Commercial Bumble Bees

The dramatic decline in numerous species of North American bumble bees, including *B. franklini* and *B. occidentalis* has been attributed to pathogen infection from managed bumble bees (Evans et al. 2008; Thorp 2005c). Robbin Thorp first developed the hypothesis that an exotic strain of the fungal pathogen *Nosema bombi* escaped from commercial bumble bee rearing operations in the late 1990s and subsequently spread to wild populations of bumble bees in the subgenus *Bombus* (including *B. occidentalis*, *B. franklini*, *B. affinis*, and *B. terricola*) (Thorp 2005c). This hypothesis was supported by the timing, speed and severity of declines observed in wild populations of *B. occidentalis* and *B. franklini*, coincident with reports by commercial producers of *N. bombi* outbreaks in their facilities (Flanders et al. 2003). Cameron et al. (2016) tested Thorp's hypothesis and found that although the prevalence of *Nosema bombi* increased in bumble bees during the 1990s - the same time period that researchers reported that *B. occidentalis* and *B. franklini* were disappearing in the wild – they did not find evidence that an exotic strain of this pathogen was introduced to the U.S.

Commercial bumble bees are used primarily to pollinate greenhouse tomatoes, and increasingly to pollinate a wide variety of other greenhouse and open field vegetable and fruit crops in the US and worldwide (Velthuis & Van Doorn 2006; Koppert Biological Systems 2018), though California only permits commercial bumble bees to be imported into the state for greenhouse use. The commercial bumble bee industry has grown dramatically in the past two decades (Velthuis & Van Doorn 2006), coincident with the growth of the greenhouse tomato industry. In 2004 55,000 colonies of the common eastern bumble bee (*Bombus impatiens*) were commercially reared in the United States, and nearly 1,000,000 colonies were produced worldwide (Velthuis & Van Doorn 2006) and demand is ever increasing (Sachman-Ruiz et al. 2015). Commercial bumble bees often escape greenhouses to forage on nearby plants (Whittington et al. 2004; Morandin et al. 2001), where they interact with wild bumble bees and have the opportunity to transmit pathogens at shared flowers. Commercially raised bumble bees frequently harbor high pathogen loads (Goka et al. 2000; Whittington & Winston 2003; Niwa et al. 2004; Colla et al. 2006; Graystock et al. 2013b) and the spillover of pathogens from commercial bumble bees in greenhouses to wild, native bumble bees foraging near greenhouses has been documented (Colla et al. 2006; Goka et al. 2006; Otterstatter & Thomson 2008; Graystock et al. 2014). Moreover, recent analysis has shown that many of the pathogens transmitted from commercial colonies are virulent to bumble bees (Graystock et al. 2013b).

Commercially reared bumble bees frequently harbor significantly more pathogens than their wild counterparts and their escape from greenhouses leads to infections in nearby wild native species

(Colla et al. 2006). In fact, Colla et al. (2006) found that bumble bees far away from greenhouses had zero *Crithidia bombi* infections, while their counterparts found close to greenhouses had infection rates of 5.3% – 75%. An additional study demonstrated that commercial bumble bees in greenhouses regularly escape greenhouses; 73% of the pollen found on bumble bees within a greenhouse originated from plants outside of the greenhouse (Whittington et al. 2004). A more recent study in the UK found that three bumble bee pathogens (*Nosema ceranae*, *Apicystis bombi*, and *Crithidia bombi*) were more prevalent around greenhouses using commercially produced bumble bees (Graystock et al. 2014). Notably this study also found that the species of bumble bee did not affect infection rates, indicating that these two pathogens infect all species equally, and that the presence of commercial bumble bees was the best measured predictor of infection rates (Graystock et al. 2014). Bumble bee diseases can be spread from bee to bee at shared flowers (Gorbunov 1987; Lipa & Triggiani 1988; Graystock et al. 2015a; 2015b).

Meeus et al. (2011) reviewed the effects of invasive parasites on bumble bee declines. They report that the commercial production of bumble bees has the potential to lead to bumble bee declines in three ways: commercial colonies may have high parasite loads, which could then infect wild bumble bee populations; commercial production may allow higher parasite virulence to evolve, leading to the introduction of parasites that are potentially more harmful to wild bumble bees than naturally occurring parasites; and the global transport of commercial bumble bees can introduce novel parasites to which resident, native bumble bees have not adapted. Pathogens reported from commercial bumble bee colonies worldwide include: *Apicystis bombi*, *Crithidia bombi*, *Locustacarus buchneri*, *Nosema bombi*, Black Queen Cell Virus (BQCV), Deformed Wing Virus (DWV), Israeli Acute Paralysis Virus (IAPV), and Kashmir Bee Virus (KBV) (Meeus et al. 2011). Commercial bumble bee colonies in North America have tested positive for *Crithidia bombi*, *Nosema bombi*, *Locustacarus buchneri*, DWV, BQCV, Sacbrood Virus (SBV) (Morkeski & Averill 2012; Averill unpublished data), and IAPV (Singh et al. 2010).

When tested, commercial bumble bee colonies in the U.S. have repeatedly been found to harbor parasites and pathogens harmful to wild bees (reviewed in Graystock et al. 2015a). In 2010, Morkeski and Averill reported results from testing bumble bees from the commercial vendors Koppert Biological Systems and BioBest. They found the commercially reared bumble bees were infected with *N. bombi*, *C. bombi*, *L. buchneri*, and viruses that also affect honey bees, including DWV and BQCV. Averill (unpublished data) also reported that commercial bumble bee colonies have tested positive for SBV. Singh et al. (2010) reported that commercial bumble bee colonies tested positive for IAPV. Furthermore, a recent study of commercially produced bumble bees (*Bombus impatiens*) in Mexico found that the colonies were infected with *L. buchneri*, *N. bombi*, Acute Bee Paralysis Virus (ABPV), Chronic Bee Paralysis Virus (CBPV), DWV, IAPV and KBV (Sachman-Ruiz et al. 2015). Since *B. impatiens* is native to the eastern

U.S. and Canada but not native to Mexico, and used in commercial bumble bee rearing facilities in both the U.S. and Canada, it is likely that these pathogens originated in rearing facilities in either the U.S. or Canada, and may also occur in managed bumble bee colonies in these two countries.

Examples from multiple continents exist demonstrating that pathogens from managed bumble bees can spread to wild bumble bees with catastrophic results (Graystock et al. 2015a). In South America, the commercial buff-tailed bumble bee (*Bombus terrestris*) was first introduced into Chile from Europe in 2006 and has since spread to Argentina (Morales et al. 2013; Schmid-Hempel et al. 2014). Researchers suggest that the highly pathogenic *Apicystis bombi* hitchhiked on the commercial bumble bees and spread to wild bumble bees, potentially causing the observed population collapse in the world's largest native bumble bee – *Bombus dahlbomii* (Arbetman et al. 2013; Schmid-Hempel et al. 2014). Indeed, scientists have found that wherever *B. terrestris* invades, the native bumble bee species disappears (Morales et al. 2013; Schmid-Hempel et al. 2014). In Japan, researchers found that commercially raised bumble bees had a higher infestation rate of the tracheal mite *L. buchneri* than wild bumble bees. Their findings also suggested that a European strain of this mite has likely invaded native Japanese bumble bee populations and may help explain its decline (Yoneda et al. 2008; Goka 2010; Graystock et al. 2015a). In Canada, higher levels of the protozoan parasite *Crithidia bombi* were detected in wild bumble bees foraging near greenhouses that used commercial bumble bees (Colla et al. 2006; Otterstatter & Thomson 2008), and it was suggested that this pathogen may be implicated in the sudden, widespread decline observed in North American bumble bees in the subgenus *Bombus sensu stricto* (Otterstatter & Thomson 2008). However, a more recent analysis of pathogen prevalence in wild bumble bees did not find evidence that *Crithidia* infections are involved in the decline of U.S. bumble bee species (Cordes et al. 2012).

In other regions of the world—where the two major North American bumble bee producers also operate—commercial bumble bee colonies have been more widely tested and have routinely been found to be infected with numerous parasites and pathogens, including: *Apicystis bombi*, *Crithidia bombi*, *Nosema bombi*, *N. ceranae*, DWV, and three honey bee specific parasites (Graystock et al. 2013b; Meeus et al. 2011; Murray et al. 2013; Sachman-Ruiz et al. 2015). In a 2013 European study, scientists tested commercially produced bees imported into the UK. Although the bees were sold as “disease-free,” the scientists found that 77 percent of the colonies tested were infected with at least five parasites and an additional three parasites were present in pollen that was supplied as food for the bumble bee colonies (Graystock et al. 2013b).

Should non-native *Bombus impatiens*, which California currently allows to be imported for greenhouse use only, escape greenhouses, the pathogens they harbor may pose a risk to wild bumble bees, including the four species included in this petition.

ii. Honey Bees

In addition to competitive effects listed above, honey bees may pose a risk to the four bumble bees listed in this petition by transmitting pathogens to them. Recent evidence has emerged demonstrating that honey bees can transmit diseases to many different species of native bees, including bumble bees, when they interact at shared flowers (Singh et al. 2010; Fürst et al. 2014). Bumble bees placed close to honey bee hives were found to have an 18% higher prevalence of *Crithidia bombi*, than bumble bees placed away from honey bees (Graystock et al. 2014). A number of RNA viruses that were formerly thought to be specific to honey bees have now been reported to infect bumble bees (Genersch et al. 2006; Morkeski & Averill 2010; Singh et al. 2010; Meeus et al. 2011; Evison et al. 2012; and see RNA Viruses in section D: Diseases above). In addition, while the primary disease implicated in recent bumble bee declines is the microsporidian *Nosema bombi*, bumble bees have recently been seen to harbor *Nosema ceranae*, a common disease of honey bees that can be particularly virulent to honey bee colonies, and has been implicated as a factor in Colony Collapse Disorder (Paxton 2010; Fürst et al. 2014; and see *Nosema ceranae* in section D: Diseases above.).

Two recent review papers that investigated disease transmission between managed (including honey bees and commercial bumble bees) and wild bees concluded that the commercial use of pollinators is a key driver of emerging disease in wild pollinators, and that avoiding anthropogenic induced pathogen spillover is crucial to preventing disease emergence in native pollinators (Graystock et al. 2015a; Manley et al. 2015). To help mediate this potential, the authors suggest that it is crucial to prevent wild bees from interacting with managed bees (Graystock et al. 2015a; Manley et al. 2015). Graystock et al. (2015b) also documented that pathogen transmission occurs between bumble bees and honey bees at shared flowers, showing a clear mechanism and vector for infection. Since small, fragmented, and declining populations are especially susceptible to infectious disease (Fürst et al. 2014), and disease is already implicated as a likely causal factor of some native bee declines in North America (Cameron et al. 2011b), this emerging body of research suggests that caution should be exercised when considering the placement of managed bees of any species in habitat that supports vulnerable or declining native bee populations or that strict regulations should be implemented that include regular screening and clear actions for diseased managed bees to prevent further infection (Graystock et al. 2015a).

The continental distribution, transport, and use of commercially reared honey bees throughout the United States presents a clear vector for disease transmission to the four species of bumble bees included in this petition. Several of the diseases harbored by honey bees have been shown to be pathogenic and virulent to bumble bees, posing a significant risk. Since the populations of the bumble bee species included in this petition are already small and fragmented, any further stressor threatens each species with local extirpation, and perhaps extinction. As such, continued unrestricted use of commercial honey bees poses a threat to the continued existence of each

species included in this petition.

E. Other Natural Events or Human-related Activities

1. Pesticides

Pesticides are used widely in agricultural, urban, and even natural areas and can exert both direct effects (lethal and sublethal) and indirect effects (harm via the effect on another species) on bumble bees. Foraging bumble bees can be poisoned by pesticides when they absorb toxic substances directly through their exoskeleton, drink contaminated nectar, gather contaminated pollen, or when larvae consume contaminated pollen. Because bumble bees nest in the ground, they may be uniquely susceptible to pesticides used on lawns or turf (National Research Council 2007). Pesticides applied in the spring, when bumble bee queens are foraging and colonies are small, are likely to be most detrimental to bumble bee populations (Goulson et al. 2008; Stoner 2016). Since males and queens are produced at the end of the colony cycle, sublethal doses of pesticides applied at any time during the bumble bee lifecycle can have substantial adverse effects on subsequent generations. Any application of pesticides can threaten bumble bees, but pesticide drift from aerial spraying can be particularly harmful. One study demonstrated that 80% of foraging bees close to the source of an insecticide application were killed, and drift can continue to be dangerous for well over a mile from the spray site (Johansen and Mayer 1990). In Europe, the recent declines in bumble bees have been partially attributed to the use of pesticides (Williams 1986; Thompson and Hunt 1999; Rasmont et al. 2006).

Bumble bees are threatened by the widespread use of pesticides across their range. Insecticides are designed to kill insects directly and herbicides can indirectly affect bumble bees by removing floral resources (see Section A.2: The Loss of Habitat Due to Increased Use of Herbicides). There is very little data available on the effect of fungicides on bumble bees, although a growing body of evidence suggests fungicides may be linked with sublethal concerns including weakening the immune system of bumble bees. Below, we outline the threats posed to bumble bee populations by insecticides and fungicides.

i. Insecticides

Of the various pesticide groups, insecticides are most likely to directly harm bees. Many commonly used insecticides are broad spectrum and thus could kill or otherwise harm exposed bumble bees. Systemic insecticides, such as neonicotinoids, have the added concern of causing exposure months to years after a treatment as they are taken up by the plant and expressed in the pollen, nectar and leaves. Extensive research into the effects of neonicotinoids has been performed. Below is a brief summary of a subset of this body of research.

Neonicotinoids

Neonicotinoids are a relatively new class of systemic insecticides that are used widely to combat

insect pests of agricultural crops, turfgrass, gardens, and pets (Cox 2001). Colla & Packer (2008) suggested that neonicotinoids may be one of the factors responsible for the decline of the rusty patched bumble bee (*Bombus affinis*; recently listed as an Endangered species under the U.S. Endangered Species Act), noting the use of this class of insecticides began in the U.S. in the early 1990s, shortly before the decline of the rusty patched bumble bee was first observed.

A recent study exposing bumble bees to field-realistic levels of the neonicotinoid imidacloprid found an 85% reduction in the production of new queens and significantly reduced colony growth rates compared to control colonies (Whitehorn et al. 2011). The authors suggest that neonicotinoids “may be having a considerable negative impact on wild bumble bee populations across the developed world” (Whitehorn et al. 2011). Another study of bumble bees exposed to varying levels of imidacloprid found a dose-dependent decline in fecundity and documented that field realistic levels of this pesticide were capable of reducing brood production by one-third (Laycock et al. 2012). The authors speculate that this decline in fecundity is a result of individual bumble bees failing to feed, which raises concerns about the impact of this pesticide on wild bumble bees (Laycock et al. 2012). In another study (Fauser et al. 2017) the researchers found that early lifestage exposure to low dose, field realistic levels of thiamethoxam and its metabolite clothianidin significantly reduced the survival of hibernating queens. Other toxicity studies have demonstrated that contact exposure of imidacloprid and clothianidin to bumble bees can be very harmful (Marletto et al. 2003; Gradish et al. 2009; Scott-Dupree et al. 2009), and an acute oral dose of imidacloprid is highly toxic to bumble bees (Marletto et al. 2003, *In Hopwood et al. 2016*). Mommaerts et al. (2010) found that chronic exposure of three neonicotinoids to bumble bees was dose dependent, and another study by Incerti et al. (2003) found that one third of bumble bees in a flight cage exposed to blooming cucumbers treated with a “field dose” of imidacloprid died within 48 hours (*In Hopwood et al. 2016*). A study by Gill et al. (2012) examining the effects of the combined exposure of bumble bees to field realistic levels of two pesticides – an imidacloprid and a pyrethroid – found that foraging behavior was impaired, worker mortality increased, and both brood development and colony success were significantly reduced.

Other studies have also documented sublethal effects of neonicotinoids on bumble bees, including: reduced foraging ability (Morandin & Winston 2003; Stanley et al. 2016); reduced drone production and longer foraging times (Mommaerts et al. 2010; Arce et al. 2016; Stanley et al. 2016); reduced foraging activity, reduced food storage and reduced adult survival (Al-Jabr 1999); and lower worker survival and reduced brood production (Tasei et al. 2000; Fauser-Misslin et al. 2014; *In Hopwood et al. 2016*). Studies have also shown that neonicotinoid exposures can lead to impaired learning and memory (Stanley et al 2015a) as well as impaired crop pollination services (Stanley et al. 2015b). Bumble bees appear to be affected by dietary concentrations of the systemic insecticide imidacloprid at levels lower than honey bees, perhaps

because, unlike honey bees, bumble bees do not metabolically degrade imidacloprid effectively while continuing to ingest it (Cresswell et al. 2014; *In* Hopwood et al. 2016).

Neonicotinoids are widely used on agricultural crops that are attractive to pollinators, as well as on horticultural plants and lawns in urban and suburban areas. Thus, this class of insecticide is likely to affect all bumble bees, which were historically found in all of these landscapes. Of particular concern is a finding in a recent review of the impact of neonicotinoid pesticides on pollinating insects which found that some products approved for home and garden use may be applied to ornamental and landscape plants at significantly higher concentrations (as much as 120 times higher) than the allowable concentration of the similar products applied on agricultural crops (Hopwood et al. 2016).

Nitroguanidine neonicotinoids (clothianidin, dinotefuran, imidacloprid and thiamethoxam) are highly toxic to bumble bees and their use has dramatically increased over the last 20 years (USGS 2017c), especially in California's Central Valley, where *B. crotchii* and *B. o. occidentalis* occur. In fact, imidacloprid is the fourth most commonly used insecticide in California, with reported uses on more than 140 crops and other non-crop locations. Its use has increased from 5,179 pounds (658 applications) in 1994 to 441,304 pounds (70,054 applications) in 2015. While not as commonly used as imidacloprid, the other neonicotinoids are also becoming more widely used. For example, thiamethoxam use has increased from 11,090 pounds (2,826 applications) in 2002 when it was first used in California, to 41,908 pounds (26,932 applications) of reported use in 2015 (CA DPR 2014). Throughout the U.S., nitroguanidine neonicotinoids were used to some degree for agricultural purposes in 94% (2,930 out of 3,109) of counties in the lower 48 states (the states for which this study collected data) in 2012 (Baker & Stone 2015). This level of use suggests that there are very few large refuges left in the country for bumble bees to access insecticide free forage – which is necessary to avoid the lethal, and sub-lethal effects of these toxic substances. As such neonicotinoid insecticides pose a direct threat to the continued existence of the bumble bee species included in this petition. Other insecticides, including new systemic insecticides, may also jeopardize these species. Standardized testing completed for registration demonstrates moderate to high toxicity for most insecticides to terrestrial insects. Still, significantly less data is available on sub-lethal effects and field realistic impacts.

ii. Fungicides

A growing body of research demonstrates how some fungicides, especially the multi-site contact activity fungicides like chlorothalonil and the ergosterol inhibiting fungicides (like tebuconazole) can harm bees, including bumble bees. McArt et al. (2017) found that fungicide usage was the strongest predictor of range contractions for four declining bumble bees and that one particular fungicide, chlorothalonil was more closely associated with prevalence of the pathogen *Nosema bombi*--an infection that was about twenty times higher in declining versus stable bumble bee species. Bernauer et al. (2015) found that bumble bees exposed to chlorothalonil produced fewer

workers, lower total bee biomass, and had lighter mother queens than control colonies. Sprayberry et al. (2013) determined that the presence of the fungicide product Manzate (active ingredient mancozeb) decreased bumble bees' ability to locate food within a maze. Bartlewicz et al. (2016) document negative impacts of fungicides on microflora, particularly yeasts, in nectar, that could affect pollinator gut microbiota. As in humans, gut microbial communities affect nutritional health, development, detoxification abilities, and parasite susceptibility (Kwong and Moran 2016; Schwarz et al. 2016). A review of research into the combined effects of pesticides on honey bees found ergosterol inhibiting fungicides significantly contribute to the spread and abundance of honey bee pathogens and parasites (Sánchez -Bayo et al. 2016). The authors also stated that these same concerns are likely to exist for bumble bees and many other wild insects. Contrary to the above mentioned studies, one literature review suggests that most active ingredients in fungicides are compatible with commercial bumble bees (Mommaerts & Smagghe 2011).

In summary, the evidence presented above shows clearly that 1) pesticides, particularly nitroguanidine neonicotinoid insecticides, are highly toxic to bumble bees and exhibit both lethal and sub-lethal effects on bumble bee populations; and 2) the use of pesticides is widespread and pervasive throughout the range of all of the species listed in this petition; As such, pesticides pose a direct threat to the continued existence of each species included in this petition.

2. Population Dynamics and Structure

Bumble bees may be more vulnerable to extinction than other species due to their unique system of reproduction (haplodiploidy with single locus complementary sex determination) (Zayed and Packer 2005; reviewed in Zayed 2009). Therefore, reduced genetic diversity resulting from any of the threats summarized in this petition can be particularly concerning for bumble bees since genetic diversity already tends to be low in this group due to the colonial life cycle (i.e., even large numbers of bumble bees may represent only one or a few queens) (Goulson 2010; Hatfield et al. 2012; but see Cameron et al. 2011a and Lozier et al. 2011). Since the bumble bees listed in this petition have undergone dramatic declines in range and relative abundance (Kevan 2008; Hatfield et al. 2015a; 2015c; unpublished data).), genetic factors (including reduced genetic diversity, inbreeding depression, and the method of sex determination utilized by bumble bees) are likely among the most significant threats to the long-term survival of these species (reviewed in Zayed 2009).

i. Impacts of Genetic Factors on Bumble Bees

Recent research indicates that populations of the declining western bumble bee (*Bombus occidentalis*) have lower genetic diversity compared to populations of co-occurring stable species (Cameron et al. 2011a; Lozier et al. 2011). It is reasonable to expect that the other three species of bumble bees in this petition may have suffered a similar loss of genetic diversity and increase in population structure, although this has not been examined directly.

Loss of genetic diversity, which is frequently the result of inbreeding or random drift, can pose significant threats to small, isolated populations of bumble bees (Whitehorn et al. 2009). A loss of genetic diversity limits the ability of a population to adapt and reproduce when the environment changes and can lead to an increased susceptibility to pathogens (Altizer et al. 2003).

Bumble bees have a single locus complementary sex determination system, meaning that the gender of an individual bee is determined by the number of unique alleles at the sex-determining locus (van Wilgenburg et al. 2006). Normally this gender determination comes through a haplodiploid genetic structure in which female bees are diploids and are produced from fertilized eggs with two different copies of an allele at the sex-determining locus. Most male bees are haploid, and they are produced from unfertilized eggs (with only a single copy of an allele at the sex-determining locus). However, when closely related bumble bees mate, the offspring can have two copies of the exact same allele (or be homozygous) at the sex-determining locus, which causes a diploid male to be produced instead of a diploid female. These diploid males may have reduced viability or may be sterile (van Wilgenburg et al. 2006). When diploid males are able to mate, they produce sterile triploid offspring, which has been found to be negatively correlated with surrogates of bumble bee population size (Darvill et al. 2012). Diploid males are produced at the expense of female workers and new queens, and the production of diploid males can reduce colony fitness (including slower growth rates, lower survival, and colonies that produce fewer offspring) in bumble bees (Whitehorn et al. 2009). Diploid male production in inbred populations can substantially increase the risk of extinction in bumble bee populations compared to other animal taxa (Zayed & Packer 2005).

Inbreeding and loss of genetic diversity can also increase parasite prevalence in populations and parasite susceptibility in individuals (Frankham et al. 2010 *in* Whitehorn et al. 2011). Populations of bumble bees with low genetic diversity have been found to have a higher prevalence of pathogens (Cameron et al. 2011a; Whitehorn et al. 2011; 2014), suggesting that as populations lose genetic diversity, the impact of parasitism will increase and threatened populations will become more prone to extinction.

In summary, the unique method of sex determination, along with the fact that small populations have lower genetic diversity make bumble bees highly susceptible to extinction and thus a rapid extinction vortex that is not experienced in other animals (Zayed & Packer 2005). As such, bumble bees are perhaps more at-risk of extinction than non-haplodiploid animals of similar population size and the threshold for action should necessarily be more conservative.

3. Global Climate Change

Climate change may pose a significant threat to the continued survival of the bumble bees listed

in this petition. Changes to the climate that are expected to have the most significant effects on bumble bee populations include: increased temperature and precipitation, increased drought, increased variability in temperature and precipitation extremes, early snow melt, and late frost events. These changes may lead to increased pathogen pressure, decreased resource availability (both floral resources and hibernacula), and a decrease in nesting habitat availability due to changes in rodent abundance or distribution (Cameron et al. 2011b).

Variability in climate can lead to phenological asynchrony between bumble bees and the plants they use (Memmott et al. 2007; Thomson 2010). There is evidence of mismatch between early blooming plants and their bumble bee pollinators (Kudo et al. 2004). Early spring is a critical time for bumble bees since that is the time when the foundresses emerge from hibernation and initiate nests. Since bumble bees are generalist foragers, they do not require synchrony with a specific plant, but asynchrony could lead to diminished resource availability at times that are critical to bumble bee colony success. For example, as the climate in the Rocky Mountains has become warmer and drier in the past 30 years, researchers have observed a mid-season period of low floral resources, a change which can negatively impact pollinators (Aldridge et al. 2011). Furthermore, changes in the distributions of plants visited by bumble bees have been correlated with a changing climate (Inouye 2008; Forrest et al. 2010). There is further evidence that this shift in climate has led to altered bumble bee morphology by reducing the tongue length of bumble bees in response to the changed availability of food plants (Miller-Struttmann et al. 2015). The effects of this shift on bumble bee populations, or native plant populations – which have not experienced a concordant shift in morphology (Miller-Struttmann et al. 2015) – needs further investigation. However, if long-tongued bumble bees like the American bumble bee (*Bombus pensylvanicus*, which occurs in California) are getting shorter tongues, this will lead to increased competition with shorter tongued bees (like *B. occidentalis occidentalis* and *B. crotchii*—included in this petition) for food plants as there will be greater niche overlap.

In modeling studies, Kirilenko and Hanley (2007a; 2007b) predict that the ranges of three bumble bee species will change in size and shift in response to predicted changes in the North American climate. In a more recent study Kerr et al. (2015) found that as the climate warms in North America that the southern range of bumble bees is contracting, while at the same time there is no evidence that populations are moving northward. The reason that bumble bees are not responding to this climactic cue by moving northward is unknown, but has dramatic implications for bumble bees; it suggests that range contraction from the south is a severe threat to the continued existence of North America's bumble bees. Other research in Europe has suggested that bumble bees are particularly susceptible to heat waves, and other effects of a changing climate (Rasmont & Iserbyt 2012). In California, increasing aridity may be particularly detrimental for *B. franklini* since this species has a very narrow climatic specialization compared to most bumble bees (NatureServe 2017a).

Climate change can also affect the quality of nectar produced by flowers. Pumpkin flowers grown under experimental conditions mimicking predicted climate futures were altered in attractiveness and nutritional quality (Hoover et al. 2012). Bumble bees foraging on these plants suffered a 22% reduction in survival. Although this study was based on predicted future conditions, similar effects may be occurring presently at levels that are undetected but may still affect bumble bee populations.

In summary, there is evidence that a shifting climate is 1) altering the timing of food plant availability for bumble bees; 2) changing the morphology of bumble bee mouth parts in response to food-plant availability; 3) reducing the habitable area of bumble bees in the southern portion of their ranges without a concordant range expansion to the north; and 4) altering the quality of food plants. Each of these landscape scale factors threaten the four bumble bee species included in this petition.

4. Loss of Host Species - Co-Extinction

One species included in this petition is in the subgenus *Psithyrus* (cuckoo bumble bees - Suckley cuckoo bumble bee [*Bombus suckleyi*]), which means that it is dependent on a bumble bee host species for its life-cycle; thus the disappearance, or increasing rarity of that host would represent a threat to species existence. This relationship was recently examined by Suhonen et al. (2015), who found that cuckoo bumble bees were more vulnerable to extinction than their host species. Unsurprisingly, the conclusions of this research were that the conservation of the host species for these animals was essential to the short and long-term persistence of cuckoo bumble bees (Suhonen et al. 2015).

The cuckoo bumble bee included in this petition is dependent on bumble bees that have recently documented range declines. *B. suckleyi* uses *B. occidentalis occidentalis* and the yellow banded bumble bee (*B. terricola*) as hosts (Williams et al. 2014) - both of which have been identified as in decline by recent research (Evans et al. 2008; Cameron et al. 2011b; Hatfield et al. unpublished data). The continued decline of the host species is a severe and permanent threat to the continued existence of this cuckoo bumble bee. The host species (*B. o. occidentalis*) mentioned above is included in this petition to be listed as an endangered species.

VI. DEGREE AND IMMEDIACY OF THREAT

Bumble bees, as a whole, are threatened by a number of factors discussed above in section V, including agricultural intensification, habitat loss and degradation, pesticide use, pathogens from managed pollinators, competition with non-native bees, climate change, genetic factors, and loss of host species (reviewed in Goulson 2010; Williams et al. 2009; Williams and Osborne 2009; Cameron et al. 2011b; Hatfield et al. 2012; Fürst et al. 2014). The magnitude of loss and rate of

decline that each of these species have experienced is outlined above in section II. Current regulations and regulatory mechanisms are inadequate to protect these species of bumble bees against the threats they face within California. Without protective measures, *Bombus crotchii*, *B. franklini*, *B. suckleyi*, and *B. occidentalis occidentalis* are likely to go extinct in California.

VII. IMPACT OF EXISTING MANAGEMENT EFFORTS

Currently none of the four species included in this petition receive substantive protection under federal law or California state law. None have legal protection under the U.S. Endangered Species Act. No known specific management actions, recovery plans, or research in the state of California have been implemented for any of these species. California Department of Fish and Wildlife lists all four bumble bees included in this petition on their “Special Animals List”. In addition, *Bombus occidentalis* is listed as a “Sensitive Species” by the US Forest Service in California (USFS 2013); thus the Forest Service will consider this species when implementing any management actions proposed in the forests where this species occurs.

Below, we list the known candidate status or special status, if any, for each species.

Crotch Bumble Bee (*Bombus crotchii*)

Bombus crotchii is on the “Special Animals List” of the California Department of Fish and Wildlife (CDFW 2017) and is listed as Endangered by the IUCN Red List of endangered species (Hatfield et al. 2015a). The species has a NatureServe Global Status rank of G3G4 (Vulnerable/Apparently Secure) and a state rank of S1S2 in California (NatureServe 2017a). Although *B. crotchii* is widely recognized as a vulnerable species, it receives no formal or informal protection.

Franklin’s bumble bee (*Bombus franklini*)

Until 1996, the U.S. Fish and Wildlife Service classed *Bombus franklini* as a “Category 2” Candidate Species which indicates that listing may be warranted, but not enough information was known to federally list the species. This status was based on the recognition of the narrow endemism of the species and the lack of knowledge on the specific biological characteristics, habitat requirements, potential threats to its existence, and other critical parameters that affect the persistence and viability of its populations. In 2010, this species was petitioned for endangered species status, has received a positive 90-day finding, and is currently the focus of a Species Status Assessment by USFWS to determine if the species warrants ESA listing (USFWS 2011).

B. franklini is included on the California Department of Fish and Wildlife “Special Animals List” (CDFW 2017). The species has a NatureServe Global Status rank of G1 (Critically Imperiled), and has a state rank of S1 (Critically Imperiled) in both Oregon and California (NatureServe 2017b). It is listed as Critically Endangered on the IUCN Red List (Kevan 2008)

and critically imperiled on the *Red List of Pollinator Insects of North America*, produced by the Xerces Society for Invertebrate Conservation (Thorp 2005c). Although *B. franklini* is widely recognized as a vulnerable species, it receives no formal or informal protection.

Western bumble bee (*Bombus occidentalis occidentalis*)

Bombus occidentalis occidentalis is on the “Special Animal List” of the California Department of Fish and Wildlife (CDFW 2017) and is listed as a “Sensitive Species” by the US Forest Service in California, where it has been documented on the following National Forests: Eldorado, Klamath, Lassen, Modoc, Plumas, Shasta-Trinity, Six Rivers, Tahoe, and Lake Tahoe (USFS 2013). The subspecies has a NatureServe Global Status rank of G4T1T3 (Apparently Secure/“T1T3 is assigned because the subspecies has almost certainly declined by more than 95% since 1998 and is not secure”) and SNR (Unranked) in California (NatureServe 2017c); the parent species *B. occidentalis* is ranked S1 (Critically Imperiled) in California (NatureServe 2017d). An IUCN Red List category has not yet been formally assigned for the southern subspecies of the western bumble bee (*B. occidentalis occidentalis*), but the full species (*B. occidentalis*) is listed as Vulnerable to extinction on the IUCN Red List (Hatfield et al. 2015b), and an analysis of changes in range and relative abundance of *B. o. occidentalis* suggest that the species would meet the criteria of Endangered on the IUCN Red List (Hatfield et al., unpublished data). The parent species *B. occidentalis* has been petitioned for endangered species status, has received a positive 90-day finding, and is currently the focus of a Species Status Assessment by the USFWS to determine if the species warrants ESA listing (USFWS 2016). Though this species receives no formal protection, any conservation or management actions implemented due to its “Sensitive Species” status on National Forests in California may provide some benefit to this species.

Suckley bumble bee (*Bombus suckleyi*)

Bombus suckleyi is on the “Special Animal List” of the California Department of Fish and Wildlife (CDFW 2017) and was listed as Critically Endangered by the IUCN Red List of endangered species (Hatfield et al. 2015c). The species has a NatureServe Global Status rank of G1G3 (Critically Imperiled/Vulnerable; the rank changed from GU to “G1G3?” to highlight the recognized major decline but uncertainty about its status in the most northern section of its range) and a state rank of S1 (Critically Imperiled) in California (NatureServe 2017e).

Restoration of Bee Habitat in California

Currently, extensive efforts exist to restore habitat for pollinators near insect-pollinated crops in California, especially in the agriculturally intensive Central Valley. These efforts have the potential to provide resources that will benefit the petitioned bumble bee species – especially *B. crotchii* and *B. occidentalis occidentalis*, which occur or historically occurred in parts of the Central Valley. The petitioners recommend that, should these bumble bees be protected under

California's Endangered Species Act, this listing should not hinder efforts to restore bee habitat. As such, a programmatic Safe Harbor agreement should be developed between CDFW and the NRCS, so that private landowners enrolled in Farm Bill incentive programs will not be discouraged from restoring pollinator habitat by fears that they may attract an endangered species to their property.

VIII. SUGGESTIONS FOR FUTURE MANAGEMENT

To prevent extinction in California of each of the four species of bumble bees listed in this petition, all extant populations of each species need to be identified and their habitat should be protected and managed to benefit the species. Surveys throughout the historic ranges of each species are recommended in order to accomplish this. To rebuild populations of *Bombus crotchii*, *B. franklini*, *B. suckleyi*, and *B. occidentalis occidentalis*, habitat should be restored within their historic ranges, prioritizing habitat closest to extant populations of each species. These efforts will be most effective if both public land managers and private landowners engage in habitat restoration and species recovery efforts.

The following general guidelines include management practices that will maintain and restore habitat for *B. crotchii*, *B. franklini*, *B. suckleyi*, and *B. o. occidentalis*:

General Guidelines for Bumble Bees

Due to the inherent vulnerability of many bumble bee species and importance of supporting wild bee populations for pollination services, the following general conservation practices are recommended:

1. Identify, protect, enhance, and restore natural high-quality habitats to include suitable forage, nesting and overwintering sites.
2. Promote farming practices that increase of nitrogen-fixing fallow (legumes) and other pollinator-friendly plants along field margins.
3. Restrict pesticide use on or near each species' habitat, particularly while treated plants are in flower.
4. Minimize exposure of wild bees to diseases transferred from managed bees.
5. Avoid honey bee introduction to high-quality native bee habitat.

Creating High-Quality Habitat

There are three things that bumble bees need in the landscape to thrive: flowers on which to forage, somewhere to nest, and a place to overwinter. Each of these habitat requirements is vital for different phases of the bees' annual life cycle.

Pollen and Nectar Sources

Bumble bees need a rich supply of flowers during the entirety of the colony's life. Bumble bees

are generalist foragers and will gather pollen and nectar from a variety of flowering plants. However, individual bumble bees do show high fidelity to particular flowers within a bloom period. The flight season of different species varies, but generally queens emerge in the late winter or early spring and the colony continues through to late summer or early fall. This requirement makes bumble bees sensitive to differing management practices throughout the course of the year. Monoculture crops, grazing, mowing, and weed control can interfere with the long-term health of bumble bee populations.

Careful selection of plants that are beneficial to bumble bees is essential to creating valuable habitat. Native plants are an excellent choice to provide nectar and pollen sources. They provide several benefits:

- Bumble bees coevolved with native plants and therefore know how to use them as a resource.
- Once established, native plants typically need less maintenance (less water, reduced use of fertilizers and pesticides).
- Native plants usually do not spread to become weedy species in natural areas.

Nesting and Overwintering Habitat

Most bumble bees nest underground, often in abandoned holes made by rodents, or occasionally abandoned bird nests (Osborne et al. 2008). Some species do nest on the surface of the ground (in grass tussocks) or in empty cavities (hollow logs, dead trees, under rocks, etc.). Queens most likely overwinter in small cavities just below or on the ground surface. While there is still much to be learned about the nesting and overwintering biology of bumble bees, it is clear that any near-surface or subsurface disturbance of the ground is likely disastrous for bumble bee colonies or overwintering queens. This includes mowing, fire, tilling, grazing, and planting. Protecting areas of land from such practices is essential for sustaining bumble bee populations. Since bumble bees usually nest in abandoned rodent nests, it is also important to retain landscape features that will support rodent populations (McFrederick and LeBuhn 2006).

Restoring and Managing Habitat

The following management recommendations are designed to be synchronous with the bumble bee life cycle and minimize risks to colonies, while maintaining flower-rich foraging areas and secure nest sites. Mowing, fire, and grazing are all widely used and valuable tools for maintaining the open, meadow-like conditions that bumble bees prefer. However, if done inappropriately (such as too frequently, or over too wide of an area), these activities can also remove too many floral resources and destroy nesting habitat for bumble bees, as well as harm butterflies, moths, and other invertebrates whose life cycles depend on the plants being disturbed (Mäder et al. 2011). Two key principals that apply irrespective of which management action is being employed include: do not treat the entire site at one time and when a treatment is being applied, do not treat more than one third of the site per year.

Mowing

Grassy areas such as meadows, forest edges, hedgerows, and lawns may all be subject to mowing. Research in Britain has shown that unmanaged meadows and garden areas with a high proportion of grass and different layers of habitat have the highest diversity of bumble bees (*in* Mäder et al. 2011), and that mowed sites have significantly fewer bumble bee nests (Potts et al. 2009). When mowing is a necessary management action, the following guidelines may be adopted:

- Leave one or more patches—as large as possible—of meadow, lawn, or edge habitat unmowed for the entire year.
- If you need to mow during the flight season (March-September), try to create a mosaic of patches with structurally different vegetation.
- Mow at the highest cutting height possible to prevent disturbance of established nests or overwintering queens. A minimum of 12-16 inches is ideal.

Fire is an important management tool for many meadows or open habitats, but requires care to avoid disturbance to plant and animal populations. The following recommendations will maximize the benefit to bumble bees.

- Only burn a specific area once every 3-6 years.
- Burn from October through February.
- Burn small sections at a time.
- No more than one third of the land area should be burned each year.
- If possible mow fire breaks that will result in patches of unburned or lightly burned areas to serve as refuge for animals within the burn area.
- Avoid high intensity fires.

Grazing

A common practice in natural areas and agricultural landscapes, grazing has been shown to have dramatic effects on the structure, diversity, and growth habits of plants. When carefully applied, grazing can be beneficial for limiting shrub and tree succession, encouraging the growth of nectar rich plants, and providing the structural diversity that creates nesting habitat. However, grazing animals have the potential to remove flowering resources, as well as trample nesting and overwintering sites—and in turn harm the animal communities that depend on them (Black et al. 2011).

Grazing is usually only beneficial to bumble bees at low to moderate levels and when the site is grazed for a short period followed by ample recovery time. We make the following general recommendations, but stress the importance of assessing local and historical conditions before implementing a plan.

- Grazing management strategies should be completed according to the characteristics of

the site and the animals being used.

- Grazing on a site should occur for a short period of time, giving an extended period for recovery.
- Grazing should only occur on approximately one third of the property each year.
- Establish exclosures and rotate grazing to allow recovery of the vegetation community.

Tillage

Any surface or subsurface disturbance can be harmful to bumble bee colonies. In order to ensure the long-term health of bumble bee populations at least some areas under management must remain permanently free of tillage. These areas could be fence margins, hedgerows, debris piles, ditches, compost heaps, etc. Nesting surveys in Britain showed that gardens and linear features like hedgerows (i.e., places free from tillage) provided important bumble bee nesting habitat (Osborne et al. 2008).

Using Pesticides

Decision-making systems such as Integrated Pest Management can be important for developing less toxic responses to pests, and ensure that actual pest damage is taking place before chemicals are used. It is important to note that it is not just cropland and rangeland that experience high use and concentrations of pesticides. Surveys of urban streams suggest heavy use of pesticides in urban and suburban areas (USGS 2014). Also, for some pesticides allowable application rates are higher for home use relative to their agricultural counterparts (Hopwood et al. 2016).

For situations when pesticides must be used (e.g. an economic or public health pest having reached an established threshold), the following recommendations will reduce harm to these bumble bee species:

- Follow the manufacturer's directions.
- Choose the least toxic option:
 - Avoid dusts and microencapsulated products
- Use the lowest effective application rate.
- Apply the pesticide as directly and locally as possible.
- Apply when bumble bees are not active (keeping in mind that bumble bees can fly at cold temperatures, and are often active in the early morning and early spring):
 - Late fall or winter.
 - At dusk or at night (if the pesticide is short lived).
- Do not spray or allow drift to move onto field margins or boundaries.
- Do not apply pesticides when plants are in bloom.
- Reduce spray drift:
 - Avoid aerial spraying and mist blowers.
 - Spray on calm days (winds between 2 and 9 mph) to minimize spray drift from

targeted applications.

- Avoid the use of systemic insecticides, such as neonicotinoids.

Commercial Use of Bumble Bees

Increasingly, as the cost of honey bee rental increases and the benefits of bumble bees as pollinators are realized, bumble bees are being shipped throughout the world for pollination of greenhouse and field crops. Pathogens harbored by commercially reared bumble bees have been implicated in the decline of multiple species of North American bumble bees, including two species included in this petition (*Bombus occidentalis occidentalis* and *B. franklini*). Currently, there is only one species of bumble bee being used for managed pollination, the common eastern bumble bee, which is native to the eastern U.S., but used in California for pollination of greenhouse crops. Should the common eastern bumble bee escape greenhouses and establish in the wild, as it has in southern B.C., it may spread pathogens to wild bumble bees, or outcompete native species for nest sites or floral resources (Whittington et al. 2004; Colla et al. 2006). In addition, commercial bumble bee producers are actively developing species that could be used for open-field pollination in California (Biobest 2018a; 2018b; APHIS 2014), and should that occur, these commercial bumble bees may pose a considerable risk to the four species of bumble bees listed in this petition.

Any use of commercially reared bumble bees for crop pollination should focus on minimizing the exposure of wild native species to managed species.

- Do not allow commercial bumble bees to be used outside of the native range of the species; if native bumble bees are allowed, ensure that they are produced within their native ranges.
- Only use commercial bumble bees in greenhouses; do not use them for open-field crops.
- Screens should be placed over window, vents, and other openings in greenhouses to prevent commercial bumble bees from escaping and interacting with wild bumble bees.
- Commercially acquired colonies should be killed (for example, by being placed in a freezer overnight) after their period of use and NOT released into the wild.

Honey Bees

Honey bees may pose a significant threat to at-risk bumble bees in this petition through competition for floral resources and spread of pathogens (Mallinger et al. 2017). Significantly, honey bees have been shown to extract vast quantities of pollen from the environment; an averaged sized apiary (40 hives) effectively removes nutritional resources that could have produced 4,000,000 wild bees over the course of three months (Cane & Tepedino 2016).

Recommendations for Land Managers

Where local and federal laws permit the placement of honey bees, and managers are deciding

whether to include hives on their land, we suggest that managers consider the following potential impacts of honey bees.

Are populations of endangered or threatened pollinators present on the land?

- If rare species of bees and butterflies, including threatened or endangered species, are known to exist within the flight area where the hives are to be placed, assessment of potential risks to these populations should be undertaken.
- If it is possible that rare or declining pollinator species can be found in the area, efforts should be made to determine if they are present. Consulting scientists with expertise in pollinator surveys and species identification is recommended. In cases where a particular pollinator species is critically imperiled, every remaining population and individual may be essential to the species' immediate and long-term survival. There is potential that honey bees may transmit diseases to native bees (e.g., spread of deformed wing virus from honey bees to bumble bees causing wing damage) and may compete for floral resources (e.g. decreased fecundity in bumble bees).
- We recommend that land managers discourage the placement of honey bee hives in natural areas, especially if populations of imperiled pollinators are present. Areas with diverse wildflowers are likely to also be hosts to diverse populations of native pollinators including imperiled bumble bees, and as such are not appropriate for honey bee apiaries; this is particularly true in protected areas (Geldmann & González-Varo 2018).
- If this recommendation cannot be followed, we recommend that honey bee hives be placed as far as practicable from areas receiving specialized management treatment for bumble bees.
 - Especially important will be to distance honey bee apiaries from potential bumble bee nesting sites, such as unmowed and untilled areas, old rock walls, fencerows or hedgerows, treed field margins, and hollow trees.
 - Where possible, distances greater than 2.4 miles (4 kilometers) will substantially reduce the competitive effects of managed hives on bumble bees (Cane & Tepedino 2016).

Are there invasive plant populations, or ongoing efforts to eradicate invasive plant species, that would be affected by the inclusion of honey bees?

- Honey bees may not be compatible with invasive plant species management. If honey bees pollinate and increase seed production of the invasive species in question (e.g., yellow star thistle), land managers may want to exclude honey bees during periods of bloom.

What are the potential impacts to other wildlife?

- Are there bears in the area that will be attracted to the apiary as a food source? Land managers need to work with beekeepers to determine if placement of an apiary will

increase the potential for human–bear conflicts. If this is a risk, then electric fencing and maintenance of that fencing to prevent intrusion from bear should be mandated on public lands to avoid bear damage to apiaries and to prevent habituation of bears to hives.

Is there sufficient infrastructure to support the drop-off and storing of the proposed operation?

- Commercial beekeepers may bring anywhere between 4 and 400 hives, depending upon the size of the operation. Hives are delivered using a range of vehicles from flatbed trucks to semi-tractor trailers. Access roads must be appropriate for the required transport, and should not result in excess erosion, road damage, or other infrastructure challenges.
- Apiary sites also must be of sufficient size, with level and firm ground to accommodate small forklifts or bobcats used to move pallets of bees. An apiary location will also need sufficient space for trucks to turn around.

Inventory, Research & Management Needs

Inventory, research, and management needs for each species listed in this petition are outlined below:

Crotch Bumble Bee (*Bombus crotchii*)

Inventory needs: Once very common in central and southern California, *B. crotchii* has recently undergone a dramatic decline, and is no longer present across much of its historic range. In order to better understand this species' distribution, in order to conserve existing populations, comprehensive surveys of this species at historic sites and other locations within its historic range are needed.

Research needs: Research needs for North American bumble bees (as a whole) are summarized in Cameron et al. (2011a), the final report for the 2010 North American Bumble Bee Species Conservation Planning Workshop. More research is needed to understand basic life history of *B. crotchii*, including nesting preferences, overwintering needs, and important host plants in California.

Management needs: Known and potential sites should be protected from threats. In the Central Valley, known populations should be protected from insecticide use. Practices such as livestock grazing and other factors that may interfere with the habitat requirements of this species (availability of nectar and pollen throughout the colony season and availability of underground nest sites and hibernacula) should be minimized where this species is extant. Carefully consider the placement of non-native European honey bees in areas that may be occupied by *B. crotchii* (see Hatfield et al. 2016 for more detail).

Franklin's bumble bee (*Bombus franklini*)

Inventory needs: Comprehensive surveys in *B. franklini*'s historic range should continue (Dr.

Robbin Thorp conducts annual bumble bee surveys within the range of this species).

Research needs: Research to address critical conservation questions for this species has been hindered by the fact that this bee may be extinct – it has not been observed since 2006 despite extensive annual surveys throughout its historic range. Should an extant population of *B. franklini* be discovered, more research would be recommended to gain a better understanding of the species' ecology, biology, and habitat requirements, especially any that might be limiting factors. Additionally, studying the pathology, control, and cross-infectivity of different suspected disease agents of *B. franklini*, including *Nosema bombi*, *Locustacarus buchneri*, and *Crithidia bombi* (Otterstatter et al. 2005; Colla et al. 2006) would allow for better understanding of the risks to the bumble bee populations and the preventative measures that should be taken.

Management needs: The habitat of *B. franklini* should be protected, including an abundance of suitable pollen and nectar sources such as, but not limited to: *Lupinus*, *Eschscholzia*, *Agastache*, *Monardella* as sources of pollen and nectar for the bees to feed on. Proximity to a natural source of fresh water would also be beneficial as it would increase the flowering season of the plants upon which the bees feed. Also, suitable nest sites are needed, such as abandoned rodent burrows.

Western bumble bee (Bombus occidentalis occidentalis)

Inventory needs: Once very common in the western United States and western Canada, *B. o. occidentalis* has recently undergone a dramatic decline in abundance and distribution, and is no longer present across the western portions of its historic range. In order to better understand the causes and extent of this species' decline, as well as the conservation needs of remaining populations, additional comprehensive surveys of this species at historic and potential sites are needed throughout California.

Research needs: Despite the widespread nature of this bumble bee, more research is needed to evaluate basic life history and ecological questions, including nesting preferences, overwintering needs, and important host plants in California.

Management needs: Protect known and potential sites from practices, such as livestock grazing, and threats such as conifer encroachment, that can interfere with the habitat requirements of this species (availability of nectar and pollen throughout the colony season and availability of underground nest sites and hibernacula). Carefully consider the placement of non-native European honey bees in areas that may be occupied by *B. o. occidentalis* (see Hatfield et al. 2016 for more detail).

Suckley bumble bee (Bombus suckleyi)

Research needs: *Bombus suckleyi* is a cuckoo bumble bee, dependent upon a bumble bee host

species to complete its life-cycle; thus the disappearance, or increasing rarity of that host would represent a threat to species existence. *B. suckleyi* is dependent on bumble bees that have recently documented range declines. The continued decline of these host species are a severe and permanent threat to continued existence of these cuckoo bumble bees. Efforts to conserve their hosts should be prioritized. While this species has only been documented as reproducing in nests of *B. o. occidentalis* it has been observed in the nests of several other species. More research is needed to determine if *B. suckleyi* could use other species as a successful host would help to better understand this species ecology. Additional life history information would also help to better understand this species' biological needs. This includes important host plants, location and details of overwintering sites, and specific habitat associations.

Inventory needs: Records of this species in California have been quite rare in recent collections. This species would benefit from targeted or more general bumble bee surveys to better understand its distribution throughout the state.

Management needs: Protect known and potential sites from practices, such as livestock grazing, and threats such as conifer encroachment, that can interfere with the habitat requirements of this species and its host (availability of nectar and pollen throughout the colony season and availability of underground nest sites and hibernacula). Efforts to conserve hosts species should be prioritized.

IX. INADEQUACY OF EXISTING REGULATORY MECHANISMS

Current regulations and regulatory mechanisms are wholly inadequate to protect these four species of bumble bees against the immediate threats that they face, including pathogen infection from commercial bees and the use of pesticides such as systemic insecticides. As emerging infectious disease has been implicated as one of the main threats to bumble bees (Evans et al. 2008; Hatfield et al. 2015a; 2015b; 2015c; Goulson & Hughes 2015), and pesticides including systemic insecticides have also been implicated in bumble bee declines (Whitehorn et al. 2012; Gill & Raine 2014; Pisa et al. 2014; Goulson 2015; Rundlöf et al. 2015), existing regulations need to be strengthened in order to adequately protect imperiled bumble bees from threats that, if unaddressed, have the potential to drive these bumble bees to extinction. Inadequacy of regulations to protect bumble bees from these immediate threats are summarized below.

Disease

Due to the immediate and potentially catastrophic effect that emerging infectious disease can have on bumble bee populations, more careful screening for diseases in commercial bees, as well as better management strategies and policy are needed to protect native bees from the threat of pathogen spillover (Graystock et al. 2013b; Sachman-Ruiz et al. 2015). Since small, fragmented, and declining populations are especially susceptible to infectious disease (Fürst et al. 2014), and

disease is already implicated as a likely causal factor of some native bee declines in North America (Cameron et al. 2011a), the emerging body of research summarized in Section V (Factors Affecting Ability to Survive and Reproduce) underscores the inadequacy of existing regulatory mechanisms to protect bumble bees from extinction.

The failing of current local and federal regulatory mechanisms is evidenced not just in their absence but in the continued decline of native bees across North America, including the western bumble bee, most likely caused by the spread of such pathogens that cause disease (Cameron et al. 2011a; Goulson & Hughes 2015). The emerging body of research linking decline of native bumble bees with the spread of pathogens underscores the inadequacy of existing regulatory mechanisms to protect bumble bees from extinction. Disease is a serious threat for bumble bees, as we explain above, because small, fragmented, and declining populations—which exist for all of the species included in this petition—are especially susceptible to infectious disease (Fürst et al. 2014).

Federal Regulations are Inadequate to Protect Wild California Bumble Bees

The Plant Protection Act

The Plant Protection Act (PPA) was passed in 2000 with the stated purpose of preventing the dissemination of plant pests. In order to control and prevent of the spread of plant pests for the protection of agriculture, the environment, and the U.S. economy, the PPA gives the Secretary of Agriculture the authority to facilitate “interstate commerce in agricultural products and other commodities that pose a risk of harboring plant pests or noxious weeds in ways that will reduce...the risk of dissemination of plant pests or noxious weeds. (7 USC § 7701(3))” The PPA authorizes the Secretary of Agriculture to promulgate regulations to prohibit or restrict the interstate movement of any plant pest if the Secretary determines the prohibition is necessary to prevent the dissemination of a plant pest within the U.S. The PPA broadly defines plant pests to include fungi, viruses, infectious agents and other pathogens, and any similar articles “that can directly or indirectly injure, cause damage to, or cause disease in any plant or plant product.” Articles such as pathogens and parasites that infect or attack bumble bees cause indirect injury to plants that rely on these bees for pollination.

Although the Act was intended to protect agricultural goods, it could potentially directly or indirectly help control the spread of bumble bee diseases and pathogens. However, it has not done so. Currently, the USDA does not regulate either the disease status or interstate movement of U.S. commercial bumble bees, despite repeated requests to use its authority under the PPA to do so (Xerces Society et al. 2010; Xerces Society et al. 2013, 2014a, 2014b). This lack of regulation is a fact reflected in the absence of bumble bees, or their pathogens, from the list of pests and diseases regulated by USDA APHIS (USDA 2018). There is no indication that this will change in the near future, and so the PPA, which provides for the facilitation of “interstate

commerce in agricultural products,” remains ineffective at slowing the spread of disease from commercial bumble bees to their native counterparts, including the bumble bees listed in this petition, and this inadequacy is reflected in the ongoing spread of disease from commercial to native bumble bees across the United States.

The USDA does regulate the international movement of Canadian bumble bees into the United States. Currently, the USDA allows the common eastern bumble bee (*Bombus impatiens*) and the western bumble bee (*Bombus occidentalis*) to be imported from Canada (7 CFR § 322.5). The USDA recently reviewed a request to allow Hunt's bumble bee (*B. huntii*) to also be imported into the U.S. from Canadian bumble bee production facilities (USDA 2014). The USDA regulations fail to protect the bumble bees included in this petition for two reasons: 1) Commercial colonies are not tested for pathogens upon importation (7 CFR § 322.5), and any pathogens present in commercial bumble bees could spread to bumble bees that visit the same flowers as commercial bumble bees (Graystock et al. 2015b); 2) Commercial bumble bees (*B. impatiens*) are produced both in Canada and the U.S., and colonies produced in the U.S. are also not required to be inspected for any pathogens.

The Honeybee Act

The Honeybee Act (7 USC 281) gives the Secretary of Agriculture the authority to regulate the interstate commerce of honey bees in order to control the spread of bee diseases: “The Secretary of Agriculture is authorized to prohibit or restrict the importation or entry of honeybees and honeybee semen into or through the United States in order to prevent the introduction and spread of diseases and parasites harmful to honeybees, the introduction of genetically undesirable germ plasm of honeybees, or the introduction and spread of undesirable species or subspecies of honeybees and the semen of honeybees.” For example, the USDA uses its authority under the Honeybee Act to prevent movement of honey bees into Hawaii in order to control the spread of honey bee pests like the Varroa mite (summarized in Xerxes Society et al. 2010). However, the Honey bee Act is specific to honey bees, and does not extend authority to the USDA to regulate diseases of managed bumble bees. Thus, the Honeybee Act fails to protect imperiled bumble bees from pathogens harbored by commercial bumble bees that are used throughout North America.

There is clear evidence that honey bees can transmit pathogens to bumble bees (Graystock et al. 2013a, 2013b; Graystock et al. 2015a, 2015b; Fürst et al. 2014; McMahon et al. 2015). However, any indirect protection of bumble bees flowing from regulation of honey bees under the Honeybee Act is limited in scope, and inadequate for protection. First, pathogens that impact the bumble bees may come from multiple sources beyond honey bees; second, the Honeybee Act does not apply to the movement of pollen for use by the commercial bumble bee trade (the risks of this practice are reviewed in Manley et al. 2015); and third, the laws seeking to prevent the spread of disease among honey bees suffer in their lack of uniformity and enforcement. State

laws regulating interstate movement of honey bees vary considerably from state to state (Gegner 2003). For example, Massachusetts requires bees imported into the state to be certified disease free within 60 days (State of Massachusetts 2018), while Minnesota does not have any similar requirements, and only offers fee for service apiary inspections (State of Minnesota 2017). In addition, responsibility for disease control remains with the beekeeper, who should routinely examine colonies for disease as a regular part of his or her management program and do what is necessary when disease is found. Yet there are not clear regulations that determine how often hives should be screened, or for which pathogens. Significantly, there are not consistent, effective mitigative actions for beekeepers to employ upon disease discovery (Graystock et al. 2015a).

California State Regulations Governing Commercial Bumble Bees

The California Department of Food and Agriculture currently allows multiple species of managed, commercial bumble bees to be imported for commercial use in the state – the nonnative common eastern bumble bee (*B. impatiens*) for greenhouse use, and the native Hunt’s bumble bee (*B. huntii*) and yellow faced bumble bee (*B. vosnesenskii*) for open field or greenhouse use. Although the Hunt’s and yellow faced bumble bees are native to California, they are currently produced outside of their native ranges, in facilities that also rear common eastern bumble bees, and thus could be exposed to nonnative pathogens, which they then could spread to wild bumble bees, including the four bumble bees included in this petition. Thus, CDFA’s regulations are currently inadequate to protect these for species of wild bumble bees from the threat they face from pathogen infection from managed bumble bees.

In addition, CDFA routinely allows honey bees to be imported into California for use in open field settings, where pathogens (in particular, RNA viruses) may spill over and infect wild bumble bees.

Although the state of California has passed regulations to protect bees (<https://www.cdfa.ca.gov/plant/pollinators/docs/Regulations-for-Protection-of-Bees.pdf>), these regulations only consider effects of pesticides on honey bees, and how to mitigate those effects, and thus are inadequate to protect these four species of wild bumble bees.

Pesticide Regulations

In June 2014, the US EPA published the *Guidance for Assessing Pesticide Risks to Bees* (U.S. EPA 2014). The guidelines provide recommendations to assist researchers in designing studies to evaluate the risks that pesticides pose to bees. Such studies are in turn used by the EPA to assess risk and determine appropriate regulation. This new guidance document could add new research to the current battery of tests required for pesticides. Still, it fails to address many concerns specific to bumble bees and other native bees. As such, pesticide risk assessments performed by the EPA could underestimate risk to bumble bees and other native bee species. For example, the

guidelines state: “This section summarizes the overall risk assessment process for characterizing the risks of pesticides to honey bees (*Apis mellifera*), which are used as a surrogate species for other *Apis* and non-*Apis* bees and other insect pollinators.” (USEPA 2014). However, the differential physiological, biological and behavioral differences of honey bees from other native bees (Osborne 2012; Vaughan et al. 2014) make honey bees poor surrogates for assessing toxicity of pesticides to bumble bees. In particular, the life-history of many non-*Apis* species (including bumble bees) including nest site location, foraging time and distance, food sources, life-cycle, and size may expose bumble bees and other non-*Apis* bee species to alternative exposure routes not considered when tests are only applied to honey bees (Wisk et al. 2014). Furthermore, unlike honey bees, bumble bees do not process pollen or nectar before feeding it to immature bees, which exposes developing bumble bees to a greater concentration of pesticides than honey bees—whose larvae are fed primarily royal jelly (processed secretions from nurse bees), and perhaps a small amount of pollen and nectar (Fischer & Moriarty 2011). For example, bumble bees appear to be affected by dietary concentrations of the systemic insecticide imidacloprid at levels lower than honey bees, perhaps because, unlike honey bees, bumble bees do not metabolically degrade imidacloprid effectively while continuing to ingest it (Cresswell et al. 2014). This range of exposure routes was not considered during the EPA’s registration process for neonicotinoids (USEPA 2012). Thus, the current mechanism that regulates the safety of pesticides to bees fails to take into account attributes specific to bumble bees and is therefore inadequate to protect bumble bees from the threat of pesticides.

Further demonstrating how current federal pesticide regulation fails to address risks to bumble bees is underscored by the fact that the EPA has not adequately responded to the numerous bumble bee kills caused by on-label, legal uses of neonicotinoid insecticides to *Tilia* trees. Specifically, in most of these cases, large numbers of bumble bees were killed by the legal applications of neonicotinoid insecticides; in one case more than 50,000 bumble bees were killed in a single incident (Hilburn 2013). Since June of 2013, there have been numerous completed investigations into bumble bee kills that occurred in Oregon. Responding to the risks associated with two of the incidents, U.S. EPA halted foliar use of nitroguanidine neonicotinoids on non-agricultural plants (including *Tilia* trees) while plants are flowering (US EPA 2013). However, because neonicotinoid insecticides can remain in plant tissue for weeks to months, and in some cases even years (Mach et al 2017), this change in regulation remains inadequate to protect bumble bees from nitroguanidine neonicotinoids applied to bumble bee-attractive plants prior to flowering. No federal action has been taken in response to the risks demonstrated by five other bee-kill incidents in Oregon caused by non-foliar, systemic applications weeks to months prior to flowering. Of these five incidents, only one was linked with an off-label use. The state of Oregon did respond to this risk by halting all uses of nitroguanidine neonicotinoids to *Tilia* trees within the state of Oregon (ODA 2015). However, not all imperiled bumble bees listed in this petition have a range that includes the state of Oregon, and therefore are not protected by this state’s

regulation. Even after the Oregon Department of Agriculture wrote to EPA to point out the inadequacy of the federal regulation, the EPA did not take action to protect bumble bees from long-term residues of systemic insecticides in woody plants such as *Tilia*.

An additional failure of the federal regulations to protect imperiled bumble bees from the threat of pesticides is that the U.S. EPA's Office of Pesticide Program conducts chemical-specific risk assessments for bees. Yet, research has begun to elucidate threats that pesticide mixtures pose to bees. While the majority of studies have been conducted on honey bees, these studies demonstrate an area of significant uncertainty that could lead to an underestimation of risk to other species of bees. For example, there can be different risks between active ingredients and full formulations (Mullin et al. 2015). There are also additive and synergistic effects between chemicals that might be found jointly in tank mixes or in the field. For example, research has raised concern for synergistic effects of the combination of ergosterol biosynthesis inhibiting fungicides and pyrethroids (Vandame and Belzunces 1998). Neonicotinoids are also known to be additively or synergistically toxic when they occur together (Andersch et al. 2010). The findings by Zhu et al. (2014) led the researchers to recommend that pesticide mixtures in pollen be evaluated by adding their toxicities together until complete data on interactions can be accumulated. Further, a recent study by Hladik et al. (2015) showed that within a single sample that non-*Apis* bees are exposed to mixtures of several pesticides, including neonicotinoids, pyrethroids, and fungicides. This provides clear evidence that native bees are exposed to multiple pesticides in their foraging bouts, yet, because of a lack of appropriate regulatory mechanisms and testing protocols, the EPA does not understand how exposure to multiple pesticides affects bumble bees – despite evidence that there are significant deleterious effects (See references above). Current EPA risk assessment regulations for pesticide effects on bees do not consider additive, or synergistic effects of pesticides, and are therefore inadequate to protect bumble bees from the threat of pesticides.

In summary, it is clear that 1) different species of bees have different responses to different insecticides; 2) current regulations for insecticide approval from the EPA only consider the effects of insecticides on honey bees – which are used as a surrogate for non-*Apis* bees; 3) the EPA has not adequately responded to a known and realized threat that nitroguanidine neonicotinoids applied to cosmetic plantings pose to bees; 4) EPA does not address the known synergistic and additive effect of multiple pesticides, despite evidence that bees are exposed to multiple chemicals in their foraging bouts. As such, current regulatory mechanisms and testing protocols for pesticides are inadequate to protect the four species of bumble bees in this petition from the widespread and prophylactic use of insecticides that are highly toxic to them.

X. AVAILABILITY AND SOURCES OF INFORMATION

Literature Cited

- Aldridge G., D. W. Inouye, J. R. K. Forrest, W. A. Barr, and A. J. Miller-Rushing. 2011. Emergence of a mid-season period of low floral resources in a montane meadow ecosystem associated with climate change. *Journal of Ecology* 99(4): 905-913.
- Al-Jabr, A.M. 1999. Integrated pest management of tomato/potato psyllid, *Paratrioza cockerelli* (Sulc) (Homoptera: Psyllidae), with emphasis on its importance in greenhouse grown tomatoes. Ph.D dissertation, Department of Bioagricultural Sciences and Pest Management, Colorado State University. 107 pp.
- Altizer, S., D. Harvell, and E. Friedle. 2003. Rapid evolutionary dynamics and disease threats to biodiversity. *Trends in Ecology & Evolution* 18:589–596.
- Andersch, W., P. Jeschke, and W. Thielert. 2010, August 26. Synergistic Insecticide Mixtures. 20100216637 A1. Available from <https://www.google.com/patents/US20100216637>. [Available 25 September 2018].
- Anderson, G. J. and M. K. Anderson. 1989. Assaying pollinator visitation to *Solanum* flowers. *Solanaceae newsletter* 3(1):71.
- [APHIS] Animal and Plant Health Inspection Service. 2014. Pest Risk Assessment for bumble bees from Canada. Importation of Bumble Bee Species *Bombus huntii* Greene (Hunt bumble bee) and *B. vosnesenskii* Radoszkowski (Vosnesensky bumble bee) from Canada into the Continental United States. A Qualitative, Pathway-Initiated Pest Risk Assessment. Version 1.1.
- Arbetman, M. P., I. Meeus, C. L. Morales, M. A. Aizen, and G. Smagghe. 2013. Alien parasite hitchhikes to Patagonia on invasive bumblebee. *Biological Invasions* 15:489–494.
- Arce, A. N., T. I. David, E. L. Randall, A. Ramos Rodrigues, T. J. Colgan, Y. Wurm, and R.J. Gill. 2016. Impact of controlled neonicotinoid exposure on bumblebees in a realistic field setting. *Journal of Applied Ecology* 54(4): 1199-1208.
- Baker, N.T. and W. W. Stone. 2015, Estimated annual agricultural pesticide use for counties of the conterminous United States, 2008–12: U.S. Geological Survey Data Series 907, 9 p.
- Bartlewicz, J., M. I. Pozo, O. Honnay, B. Lievens, and H. Jacquemyn. 2016. Effects of agricultural fungicides on microorganisms associated with floral nectar: susceptibility assays and field experiments. *Environmental Science and Pollution Research* 23(19): 19776-19786.

Belsky, A. J., A. Matzke, and S. Uselman. 1999. Survey of livestock influences on stream and riparian ecosystems in the western United States. *Journal of Soil and Water Conservation* 54:419–431.

Berenbaum, M., P. Bernhardt, S. Buchmann, N. Calderone, P. Goldstein, D. W. Inouye, P. Kevan, C. Kremen, R. A. Medellin, and T. Ricketts. 2007. Status of pollinators in North America. The National Academies Press, Washington, DC.

Bernauer, O. M., H. R. Gaines-Day, and S. A. Steffan. 2015. Colonies of bumble bees (*Bombus impatiens*) produce fewer workers, less bee biomass, and have smaller mother queens following fungicide exposure. *Insects* 6(2): 478-488.

Bertsch, A., Hrab'e de Angelis, M. & Przemeck, G.K.H. 2010. A phylogenetic framework for the North American bumblebee species of the subgenus *Bombus* sensu stricto (*Bombus affinis*, *B. franklini*, *B. moderatus*, *B. occidentalis* & *B. terricola*) based on mitochondrial DNA markers. *Beiträge zur Entomologie* 60:229–242.

Bhattacharya, M., R. B. Primack, and J. Gerwein. 2003. Are roads and railroads barriers to bumblebee movement in a temperate suburban conservation area? *Biological Conservation* 109:37–45.

Biesmeijer, J. C., S. P. M. Roberts, M. Reemer, R. Ohlemüller, M. Edwards, T. Peeters, A. P. Schaffers, S. G. Potts, R. Kleukers, C. D. Thomas, J. Settele, and W. E. Kunin. 2006. Parallel declines in pollinators and insect-pollinated plants in Britain and the Netherlands. *Science* 313: 351-354.

Biobest Group. 2018a. North American growers count on Biobest for great pollination results in open field fruit production. Website: <https://www.biobestgroup.com/en/page/295650/north-american-growers-count-on-biobest-for-great-pollination-results-in-open-field-fruit-production>. [Accessed 15 March 2018].

Biobest Group. 2018b. Hive Types. <https://www.biobestgroup.com/en/biobest/pollination/things-to-know-about-bumblebees-7052/hive-types-6683/>. [Accessed 15 March 2018].

Black, S. H., M. Shepherd, and M. Vaughan. 2011. Rangeland management for pollinators. *Rangelands* 33(3):9-13.

Blaker, E. A., J. P. Strange, R. R. James, F. P. Monroy, and N. S. Cobb. 2014. PCR reveals high

prevalence of non/low sporulating *Nosema bombi* (microsporidia) infections in bumble bees (*Bombus*) in Northern Arizona. *Journal of invertebrate pathology* 123:25–33.

Brown, M. J. F., R. Schmid-Hempel, and P. Schmid-Hempel. 2003. Strong context-dependent virulence in a host-parasite system: reconciling genetic evidence with theory. *Journal of Animal Ecology* 72: 994-1002.

Buchmann, S. L. 1983. Buzz pollination in angiosperms. Pages 73-113 in C. E. Jones and R. J. Little, editors. *Handbook of experimental pollination biology*. Van Nostrand Reinhold Company, New York, NY.

Buchmann, S. L. 1996. Competition between honey bees and native bees in the Sonoran Desert and global bee conservation issues. Pages 125–142 in A. Matheson, S. L. Buchmann, C. O’Toole, P. Westrich, and I. H. Williams, editors. *The conservation of Bees*. Available from <http://www.cabdirect.org/abstracts/19960200662.html> [Accessed January 8, 2014].

Bueno, C., K. E. Ruckstuhl, N. Arrigo, A. N. Aivaz, and P. Neuhaus. 2011. Impacts of cattle grazing on small-rodent communities: an experimental case study. *Canadian Journal of Zoology* 90:22-30.

Bumble Bee Watch. 2017. Bumble Bee Sightings. <http://www.bumblebeewatch.org/app/#/bees/lists> Query: {“Provinces/States”: “California”; “Species”: “occidentalis / Western bumble bee”; “Status”: “Verified”}. [Accessed 20 June 2017].

Burns, I. 2004. Social development and conflict in the North American bumblebee *Bombus impatiens* Cresson. University of Minnesota. Ph.D. Thesis.

Butz-Huryn, V. M. 1997. Ecological impacts of introduced honey bees. *Quarterly Review of Biology*: 275–297.

[CA DPR] California Department of Pesticide Regulation. 2014. Summary of Pesticide Use Report Data 2012 *Indexed by Chemical*. 726 pp. Available from: <http://www.cdpr.ca.gov/docs/pur/pur12rep/chmrpt12.pdf> [Accessed 15 February 2018].

Calvin, L. and R. Cook. 2005. North American greenhouse tomatoes emerge as a major market force. *Amber Waves*: US Department of Agriculture Economic Research Service. 8 pp.

Cameron, S. A., H. M. Hines, and P. H. Williams. 2007. A comprehensive phylogeny of the bumble bees (*Bombus*). *Biological Journal of the Linnean Society*. Linnean Society of London

91:161–188.

Cameron, S., S. Jepsen, E. Spevak, J. Strange, M. Vaughan, J. Engler, and O. Byers (eds.). 2011a. North American Bumble Bee Species Conservation Planning Workshop Final Report. IUCN/SSC Conservation Breeding Specialist Group, Apple Valley, MN.

Cameron, S. A., H. C. Lim, J. D. Lozier, M. A. Duennes, and R. Thorp. 2016. Test of the invasive pathogen hypothesis of bumble bee decline in North America. *Proceedings of the National Academy of Sciences of the United States of America*.

Cameron, S.A., Lozier, J.D., Strange, J.P, Koch, J.B., Cordes, N., Solter, L.F. and Griswold, T.L. 2011b. Patterns of widespread decline in North American bumble bees. *Proceedings of the National Academy of Science (USA)* 108(2): 662-667.

Cane, J. H. and V.J. Tepedino. 2016. Gauging the effect of honey bee pollen collection on native bee communities. *Conservation Letters* 10(2):205-210.

Carvell, C. 2002. Habitat use and conservation of bumblebees (*Bombus* spp.) under different grassland management regimes. *Biological Conservation* 103: 33-49.

Carvell, C., D. B. Roy, S. M. Smart, R. F. Pywell, C. D. Preston, and D. Goulson. 2006. Declines in forage availability for bumblebees at a national scale. *Biological Conservation* 132:481–489.

[CDFW] California Department of Fish and Wildlife. 2017. California Natural Diversity Database. October 2017. Special Animals List. Periodic publication. 65 pp.

Center for Biological Diversity, Center for Food Safety, Xerces Society for Invertebrate Conservation, and L. Brower. 2014. Petition to protect the monarch butterfly (*Danaus plexippus plexippus*) under the Endangered Species Act. Available from <http://www.xerces.org/wp-content/uploads/2014/08/monarch-esa-petition.pdf>.

Code, B. H. and S. L. Haney. 2006. Final Report: Franklin’s Bumble Bee Inventory in the Southern Cascades of Oregon. Prepared for: The Bureau of Land Management, Medford, Oregon, 4 Oct. 2006. Available from: <http://www.fs.fed.us/r6/sfpnw/issssp/documents/inventories/inv-rpt-iihy-bofr-med-southerncascades-inventory-2006-10.pdf> [Accessed 20 February 2018).

Colla, S. R., Gadallah, F., Richardson, L., Wagner, D. and Gall, L. 2012. Assessing the Conservation Status of North American bumble bees using museum records. *Biodiversity and*

Conservation 21(14): 1379-1391.

Colla, S. R., M. C. Otterstatter, R. J. Gegear, and J. D. Thomson. 2006. Plight of the bumble bee: pathogen spillover from commercial to wild populations. *Biological conservation* 129:461–467.

Colla, S. R. and L. Packer. 2008. Evidence for the decline of Eastern North American Bumble Bees, with special focus on *Bombus affinis* Cresson. *Biodiversity and Conservation* 17:1379-1391.

Coop, J. D., and T. J. Givnish. 2007. Spatial and temporal patterns of recent forest encroachment in montane grasslands of the Valles Caldera, New Mexico, USA. *Journal of biogeography* 34:914–927. Blackwell Publishing Ltd. Available from: <http://dx.doi.org/10.1111/j.1365-2699.2006.01660.x>.

Cousin, M. E. Silva-Zacarin, A. Kretzschmar, M. El Maataoui, J. L. Brunet, and L. Belzunces. P. 2013. Size Changes in Honey Bee Larvae Oenocytes Induced by Exposure to Paraquat at Very Low Concentrations. *PLOS ONE* 2013. 8(5):p.e65693

Corbet S. A., M. Fussell, R. Ake, A. Fraser, C. Gunson, A Savage, and K Smith. 1993. Temperature and the pollinating activity of social bees. *Ecological Entomology* 18:17-30.

Cordes, N., W.-F. Huang, J. P. Strange, S. A. Cameron, T. L. Griswold, J. D. Lozier, and L. F. Solter. 2012. Interspecific geographic distribution and variation of the pathogens *Nosema bombi* and *Crithidia* species in United States bumble bee populations. *Journal of Invertebrate Pathology*, 109(2), 209-216.

Cox, C. 2001. Insecticide factsheet: Imidacloprid. *Journal of Pesticide Reform*. 21:15-22.

Cresson, E. T. 1878. Descriptions of new species of North American bees. *Proceedings of the Academy of natural Sciences of Philadelphia* 1878: 181-221.

Cresswell, J. E., F. X. L. Robert, H. Florance, N. Smirnoff. 2014. Clearance of ingested neonicotinoid pesticide (imidacloprid) in honey bees (*Apis mellifera*) and bumblebees (*Bombus terrestris*). *Pest management science* 70(2): 332-337.

Dafni, A. and A. Shmida. 1996. The possible ecological implications of the invasion of *Bombus terrestris* (L.) (Apidae) at Mt. Carmel, Israel. In A. Matheson, S. L. Buchmann, C. O’Toole, P. Westrich, and I. H. Williams (eds.). *The Conservation of Bees*. Academic Press 183-200 pp.

- Darvill, B., J. S. Ellis, G. C. Lye, and D. Goulson. 2006. Population structure and inbreeding in a rare and declining bumblebee, *Bombus muscorum* (Hymenoptera: Apidae). *Molecular Ecology* 15: 601-611.
- Darvill, B., O. Lepais, L. C. Woodall, and D. Goulson. 2012. Triploid bumblebees indicate a direct cost of inbreeding in fragmented populations. *Molecular Ecology*, 21(16), 3988-3995.
- Daszak, P., A. A. Cunningham, and A. D. Hyatt. 2000. Emerging infectious diseases of wildlife—threats to biodiversity and human health. *Science* 287:443–449. Available from: <http://www.sciencemag.org/content/287/5452/443.short> [Accessed 13 March 2014].
- Dai, P., Z. Yan, S. Ma, Y. Yang, Q. Wang, C. Hou, Y. Wu, Y. Liu, and Q. Diao. 2018. The herbicide glyphosate negatively affects midgut bacterial communities and survival of honey bee during larvae reared in vitro. *Journal of Agriculture and Food Chemistry* 66(29): 7786-7793.
- Diekötter, T., K. Walther-Hellwig, M. Conradi, M. Suter, and R. Frankl. 2006. Effects of landscape elements on the distribution of the rare bumblebee species *Bombus muscorum* in an agricultural landscape. *Arthropod Diversity and Conservation* 15: 57-68.
- Dupont, Y. L., D. M. Hansen, A. Valido, and J. M. Olesen. 2004. Impact of introduced honey bees on native pollination interactions of the endemic *Echium wildpretii* (Boraginaceae) on Tenerife, Canary Islands. *Biological Conservation* 118:301–311.
- Eickwort, G. C. and H. S. Ginsberg. 1980. Foraging and mating behavior in Apoidea. *Annual Review of Entomology* 25:421–446.
- Eilers E. J., C. Kremen, S. S. Greenleaf, A. K. Garder, and A. Klein. 2011. Contribution of pollinator-mediated crops to nutrients in the human food supply. *PLoS ONE* 6(6):e21363.
- Elbgami, T., W. E. Kunin, W. O. H. Hughes, and J. C. Biesmeijer. 2014. The effect of proximity to a honeybee apiary on bumblebee colony fitness, development, and performance. *Apidologie*: 1–10.
- Ellis, J. S., M. E. Knight, B. Darvill, and D. Goulson. 2006. Extremely low effective population sizes, genetic structuring and reduced genetic diversity in a threatened bumblebee species, *Bombus sylvarum* (Hymenoptera: Apidae). *Molecular Ecology* 15(14): 4375-4386.
- Evans, E. C. 2001. Competition between European honey bees and native bumblebees: resource overlap and impact on reproductive success. University of Minnesota.

Evans, E., R. Thorp, S. Jepsen, and S. H. Black. 2008. Status review of three formerly common species of bumble bee in the subgenus/Bombus. The Xerces Society.

Evison, S. E. F., K. E. Roberts, L. Laurenson, S. Pietravalle, J. Hui, J. C. Biesmeijer, J. E. Smith, G. Budge, and W. O. H. Hughes. 2012. Pervasiveness of Parasites in Pollinators. PLoS ONE 7:e30641.

Fausser, A., C. Sandrock, P. Neumann, and B. M. Sadd. 2017. Neonicotinoids override a parasite exposure impact on hibernation success of a key bumblebee pollinator. Ecological Entomology 42(3): 306-314.

Fausser-Misslin, A., B. M. Sadd, P. Neumann, and C. Sandrock. 2014. Influence of combined pesticide and parasite exposure on bumblebee colony traits in the laboratory. Journal of Applied Ecology 51(2): 450-459.

Field, C. B., D. B. Lobell, H. A. Peters, and N. R. Chiariello. 2007. Feedbacks of Terrestrial Ecosystems to Climate Change*. Annual review of environment and resources 32:1–29.

Available from:

<http://www.annualreviews.org/doi/abs/10.1146/annurev.energy.32.053006.141119> [Accessed 20 February 2018].

Fischer, D. and T. Moriarty (Eds). 2011. Pesticide risk assessment for pollinators: Summary of a SETAC Pellston workshop. 15-21 January 2011, Pensacola, Florida, USA.

Fitzpatrick, A., T. E. Murray, R. J. Paxton, and M. J. F. Brown. 2007. Building on IUCN Regional Red Lists to Produce Lists of Species of Conservation Priority: a Model with Irish Bees. Conservation Biology 21: 1324–1332.

Flanders, R. V., W. F. Wehling, and A. L. Craghead. 2003. Laws and regulations on the import, movement and release of bees in the United States. pp. 99-111. In K. Strickler and J. H. Cane (eds.) For Nonnative Crops, Whence Pollinators of the Future? Thomas Say Publications in Entomology: Proceedings. Entomological Society of America, Lanham, MD.

Forrest, J., Inouye, D. W., Thomson, J. D. 2010. Flowering phenology in subalpine meadows: Does climate variation influence community co-flowering patterns? Ecology 91:431–440.

Frankham, R., J. D. Ballou, and D. A. Briscoe. 2010. Introduction to Conservation Genetics Second Edition, Cambridge University Press, 618 pages.

Frankie, G. W., R. W. Thorp, M. Schindler, J. Hernandez, B. Ertter, and M. Rizzardi. 2005. Ecological patterns of bees and their host ornamental flowers in two northern California cities. *Journal of the Kansas Entomological Society* 78: 227-246.

Franklin, H. J. 1913. The Bombidae of the New World. *Transactions of the American Entomological Society* 38: 177-486.

Freese, B. and Crouch, M. 2015. Monarchs in peril: Herbicide resistant crops and the decline of monarch butterflies in North America. Center for Food Safety. 88 pp.

Frison, T. H. 1921. New distribution records for North American Bremidae, with the description of a new species (Hym.) *Entomological News* 32: 144-148.

Frison, T. H. 1923. Systematic and biological notes on bumblebees (Bremidae; Hymenoptera). *Transactions of the American Entomological Society* 48: 307-326.

Frison, T. H. 1926. Descriptions and records of North American Bremidae together with notes on the synonymy of certain species (Hymenoptera). *Transactions of the American Entomological Society* 52: 129-145.

Fürst, M. A., D. P. McMahon, J. L. Osborne, R. J. Paxton, and M. J. F. Brown. 2014. Disease associations between honeybees and bumblebees as a threat to wild pollinators. *Nature* 506:364–366. Available from: <http://www.nature.com/nature/journal/v506/n7488/abs/nature12977.html> [Accessed 20 February 2018].

Fussell, M., and S. A. Corbet. 1992. Flower usage by bumble-bees: a basis for forage plant management. *Journal of Applied Ecology* 29:451-465.

Gegner, L. 2003. Beekeeping/Apiculture. ATTRA. Available from <https://attra.ncat.org/attra-pub/summaries/summary.php?pub=76>. [Accessed 25 September 2018].

Geldmann, J. and González-Varo, J. P. 2018. Conserving honey bees does not help wildlife. *Science* 359:392–393.

Genersch, E., C. Yue, I. Fries, and J. R. de Miranda. 2006. Detection of deformed wing virus, a honey bee viral pathogen, in bumble bees (*Bombus terrestris* and *Bombus pascuorum*) with wing deformities. *Journal of Invertebrate Pathology* 91:61–63.

Getz, W. M., S. Fortmann-Roe, P. C. Cross, A. J. Lyons, S. J. Ryan, and C. C. Wilmers. 2007. LoCoH: nonparameteric kernel methods for constructing home ranges and utilization distributions. *PloS one* 2:e207.

Gibson, C., V. Brown, L. Losito, and G. McGavin. 1992. The response of invertebrate assemblies to grazing. *Ecography* 15: 166-176.

Gill, R. J. and N. E. Raine. 2014. Chronic impairment of bumblebee natural foraging behaviour induced by sublethal pesticide exposure. *Functional ecology* 28:1459–1471. Available from <http://onlinelibrary.wiley.com/doi/10.1111/1365-2435.12292/epdf>. [Accessed 28 February 2018].

Gill, R. J., O. Ramos-Rodriguez, and N. E. Raine. 2012. Combined pesticide exposure severely affects individual- and colony-level traits in bees. *Nature* 491(7422): 105-108.

Gillespie, S. 2010. Factors affecting parasite prevalence among wild bumblebees. *Ecological entomology* 35:737–747.

Ginsberg, H. S. 1983. Foraging ecology of bees in an old field. *Ecology*:165–175.

Goka, K. 2010. Introduction to the Special Feature for Ecological Risk Assessment of Introduced Bumblebees: Status of the European bumblebee, *Bombus terrestris*, in Japan as a beneficial pollinator and an invasive alien species. *Applied Entomology and Zoology* 45:1–6.

Goka, K., Okabe, K., Niwa, S., Yoneda, M. 2000. Parasitic mite infestation in introduced colonies of European bumblebees, *Bombus terrestris*. *Japanese Journal of Applied Entomology and Zoology* 44(1):47-50.

Goka, K., Okabe, K., Yoneda, M. 2006. Worldwide migration of parasitic mites as a result of bumblebee commercialization. *Population Ecology* 48:285–291.

Gorbunov, P. S. 1987. Endoparasitic flagellates of the genus *Crithidia* (Trypanosomatidae, Zoomastigophorea) from alimentary canal of bumblebees. *Zoologicheskii zhurnal*.

Goulson, D. 2003. Conservation of bumblebees. *In: Species Management: Challenges and Solutions for the 21st Century*. ed. by J.M. Baxter and C.A. Galbraith. TSO Scotland, Edinburgh. pp. 477-492.

Goulson, D. 2010. *Bumblebees: behaviour, ecology, and conservation*. Oxford University Press,

New York. 317pp.

Goulson, D. 2015. Neonicotinoids impact bumblebee colony fitness in the field; a reanalysis of the UK's Food & Environment Research Agency 2012 experiment. *PeerJ* 3:e854.

Goulson, D., and W. O. H. Hughes. 2015. Mitigating the anthropogenic spread of bee parasites to protect wild pollinators. *Biological conservation* 191:10–19.

Goulson, D., G. C. Lye, and B. Darvill. 2008. Decline and conservation of bumble bees. *Annu. Rev. Entomol.* 53:191–208.

Goulson, D. and K. R. Sparrow. 2009. Evidence for competition between honeybees and bumblebees; effects on bumblebee worker size. *Journal of Insect Conservation* 13:177–181.

Goulson, D., J. C. Stout, and A. R. Kells. 2002. Do exotic bumblebees and honeybees compete with native flower-visiting insects in Tasmania? *Journal of Insect Conservation* 6: 179–189.

Gradish, A. E., C. D. Scott-Dupree, L. Shipp, C. R. Harris, and G. Ferguson. 2009. Effect of reduced risk pesticides for use in greenhouse vegetable production on *Bombus impatiens* (Hymenoptera: Apidae). *Pest Management Science* 66:142-146.

Graystock, P., E. J. Blane, Q. S. McFrederick, D. Goulson, and W. O. H. Hughes. 2015a. Do managed bees drive parasite spread and emergence in wild bees? *International journal for parasitology. Parasites and Wildlife* 5(1): 64-75.

Graystock, P., D. Goulson, and W. O. H. Hughes. 2015b. Parasites in bloom: flowers aid dispersal and transmission of pollinator parasites within and between bee species. *Proc. R. Soc. B* 282:1-6. The Royal Society. Available from <http://rspb.royalsocietypublishing.org/content/royprsb/282/1813/20151371.full.pdf>. [Accessed 28 February 2018].

Graystock, P., D. Goulson, and W. O. H. Hughes. 2014. The relationship between managed bees and the prevalence of parasites in bumblebees. *PeerJ* 2:e522. Available from <http://dx.doi.org/10.7717/peerj.522>.

Graystock, P., K. Yates, B. Darvill, D. Goulson, and W. O. H. Hughes. 2013a. Emerging dangers: deadly effects of an emergent parasite in a new pollinator host. *Journal of invertebrate pathology* 114:114–119.

Graystock, P., K. Yates, S. E. F. Evison, B. Darvill, D. Goulson, and W. O. H. Hughes. 2013b. The Trojan hives: pollinator pathogens, imported and distributed in bumblebee colonies. *The Journal of applied ecology* 50:1207–1215. Available from: <http://onlinelibrary.wiley.com/doi/10.1111/1365-2664.12134/full> [Accessed 6 August 2014].

Greene, J. W. 1858. Descriptions of several new hymenopterous insects from the North west coast of America. *Annals of Lyceum of Natural History of New York* 7: 11-12.

Greene, J. W. 1860. XXI. Review of the American Bombidae, together with a description of several species heretofore undescribed, being a synopsis of this family of Hymenopterous insects thus far known to inhabit North America. *Annals of the Lyceum of Natural History of New York* 7: 168-176.

Grixti, J. C., L. T. Wong, S. A. Cameron, and C. Favret. 2009. Decline of bumble bees (*Bombus*) in the North American Midwest. *Biological conservation* 142:75–84. Available from <http://www.sciencedirect.com/science/article/pii/S0006320708003698> [Accessed 5 February 2014].

Hatfield, R, S. Colla, S. Jepsen, L. Richardson, R. Thorp, and S. Foltz Jordan. 2014. Draft IUCN Assessments for North American *Bombus* spp. for the North American IUCN Bumble Bee Specialist Group. The Xerces Society for Invertebrate Conservation, www.xerces.org, Portland, OR.

Hatfield, R., S. Jepsen, E. Mader, S. H. Black, and M. Shepherd. 2012. Conserving Bumble Bees: Guidelines for Creating and Managing Habitat for America's Declining Pollinators. The Xerces Society for Invertebrate Conservation. Available from: <http://www.xerces.org/bumblebees/guidelines>.

Hatfield, R., Jepsen, S., Thorp, R., Richardson, L. and Colla, S. 2015a. *Bombus crotchii*. The IUCN Red List of Threatened Species 2015: e.T44937582A46440211. <http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T44937582A46440211.en>. Downloaded on 9 February 2018.

Hatfield, R., Jepsen, S., Thorp, R., Richardson, L., Colla, S. and Foltz Jordan, S. 2015b. *Bombus occidentalis*. The IUCN Red List of Threatened Species 2015: e.T44937492A46440201. <http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T44937492A46440201.en>. Downloaded on 9 February 2018.

Hatfield, R., S. Jepsen, R. Thorp, L. Richardson, and S. Colla, 2015c. *Bombus suckleyi*. The

IUCN Red List of Threatened Species 2015:
e.T44937699A46440241. <http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T44937699A46440241.en>. Downloaded on 9 February 2018.

Hatfield, R. G., S. Jepsen, M. Vaughan, S. Black, and E. Mader. 2016. An overview of the potential impacts of honey bees to native bees, plant communities, and ecosystems in wild landscapes: Recommendations for land managers. Available from: http://www.xerces.org/wp-content/uploads/2016/09/Xerces_policy_statement_HB_Final.pdf.

Hatfield, R. G., and G. LeBuhn. 2007. Patch and landscape factors shape community assemblage of bumble bees, *Bombus* spp.(Hymenoptera: Apidae), in montane meadows. *Biological conservation* 139:150–158.

Hatfield, R. G. Analysis the conservation status of *Bombus occidentalis occidentalis*. 2018a. Unpublished data.

Hatfield, R. G. Analysis the conservation status of *Bombus franklini*. 2018b. Unpublished data.

Hatfield, R.G., S. Colla, S. Jepsen, L. Richardson, R. Thorp. 2018c. Red Listing North America's Bumble Bees *In* Bumblebee Specialist Group Report 2017. Pp. 3-9. Available from: <https://bumblebeespecialistgroup.org/wp-content/uploads/2018/02/BBSG-Annual-Report-2017.pdf>

Hayes, G. F. and K. D. Holl. 2003. Cattle Grazing Impacts on Annual Forbs and Vegetation Composition of Mesic Grasslands in California. *Conservation biology: the journal of the Society for Conservation Biology* 17:1694–1702. Blackwell Science Inc. Available from: <http://dx.doi.org/10.1111/j.1523-1739.2003.00281.x>.

Highfield, A. C., A. El Nagar, L. C. Mackinder, M. L. N. Laure, M. J. Hall, S. J. Martin, and D. C. Schroeder. 2009. Deformed wing virus implicated in overwintering honeybee colony losses. *Applied and environmental microbiology* 75(22): 7212-7220.

Highland, S. A., and J. A. Jones. 2014. Extinction debt in naturally contracting mountain meadows in the Pacific Northwest, USA: varying responses of plants and feeding guilds of nocturnal moths. *Biodiversity and conservation* 23:2529–2544. Springer Netherlands. Available from: <http://link.springer.com/article/10.1007/s10531-014-0737-z> [Accessed 20 February 2018].

Hilburn, D. 2013. Lessons learned from the Wilsonville Bee Kill by Dan Hilburn, Oregon Department of Agriculture. In Oregon Invasive Species Blog. Available at:

<http://oregoninvasivespecies.blogspot.com/2013/07/lessons-learned-from-wilsonville-bee.html>
[Accessed 25 September 2018].

Hines, H. M. and S. D. Hendrix. 2005. Bumble bee (Hymenoptera: Apidae) diversity and abundance in tallgrass prairie patches: effects of local and landscape floral resources. *Environmental entomology* 34:1477–1484.

Hladik, M. L., M. Vandever, and K. L. Smalling. 2015. Exposure of native bees foraging in an agricultural landscape to current-use pesticides. *The Science of the total environment* 542:469–477.

Hobbs, G. A. 1968. Ecology of species of *Bombus* (Hymenoptera: Apidae) in southern Alberta. VII. Subgenus *Bombus*. *Canadian Entomologist* 100: 156-164.

Hoover, S. E. R., J. J. Ladley, A. A. Shchepetkina, M. Tisch, S. P. Gieseg and J. M. Tylianakis. 2012. Warming, CO₂, and nitrogen deposition interactively affect a plant-pollinator mutualism. *Ecology Letters* 15(3): 227-234.

Hopwood J., M. Vaughan, M. Shepherd, E. Lee-Mäder, and S.H. Black. 2016. How Neonicotinoids Can Kill Bees, the Science Behind the Role These Insecticides Play in Harming Bees. Tech. rep., The Xerces Society. Available from: <http://www.xerces.org/neonicotinoids-and-bees/> [Accessed 20 February 2018].

Horskins, K. and V. B. Turner. 1999. Resource use and foraging patterns of honeybees, *Apis mellifera*, and native insects on flowers of *Eucalyptus costata*. *Australian Journal of Ecology* 24: 221–27.

Hudewenz, A., and A.-M. Klein. 2013. Competition between honey bees and wild bees and the role of nesting resources in a nature reserve. *Journal of Insect Conservation* 17:1275–1283.

Hudewenz, A., and A.-M. Klein. 2015. Red mason bees cannot compete with honey bees for floral resources in a cage experiment. *Ecology and Evolution* 5(21): 5049-5056.

Huntzinger M. 2003. Effects of fire management practices on butterfly diversity in the forested western United States. *Biological Conservation* 113: 1-12.

Husband, R. W. and R. N. Shina. 1970. A review of the genus *Locustacarus* with a key to the genera of the family Podapolipidae (Acarina), *Annals of the Entomological Society of America*

63:1152–1162.

Incerti, F., L. Bortolotti, C. Porrini, A. Micciarelli Sbrenna, and G. Sbrenna. 2003. An extended laboratory test to evaluate the effects of pesticides on bumblebees, preliminary results. *Bulletin of Insectology* 56:159-164.

Inouye, D. W. 2008. Effects of climate change on phenology, frost damage, and floral abundance of montane wildflowers *Ecology* 89(2):353-362.

[IUCN] International Union for the Conservation of Nature. 2012. Red List categories and criteria: Version 3.1 Second. IUCN Species Survival Commission, Gland, Switzerland and Cambridge, UK. Available from: http://www.iucnredlist.org/static/categories_criteria_3_1#introduction [Accessed 20 February 2018].

[IUCN Red List] International Union for the Conservation of Nature. 2016. The IUCN Red List of Threatened Species. Available from <http://www.iucnredlist.org/>.

Jha, S. 2015. Contemporary human-altered landscapes and oceanic barriers reduce bumble bee gene flow. *Molecular Ecology* 24:993-1006.

Jha, S. and C. Kremen. 2013. Resource diversity and landscape-level homogeneity drive native bee foraging. *Proceedings of the National Academy of Sciences* 110:555–558.

Johansen, C. A. and D. F. Mayer. 1990. Pollinator protection: a bee & pesticide handbook. Wicwas Press. Cheshire, Connecticut. 212 pp.

Johnson, M. D. and C. M. Horn. 2008. Effects of rotational grazing on rodents and raptors in a coastal grassland. *Western North American Naturalist* 68: 444-452.

Kadoya, E. Z. and H. S. Ishii. 2015. Host manipulation of bumble bee queens by *Sphaerularia* nematodes indirectly affects foraging of non-host workers. *Ecology* 96:1361–1370. *Eco Soc America*. Available from <http://www.ncbi.nlm.nih.gov/pubmed/26236849>.

Kearns, C.A. and D.W. Inouye. 1997. Pollinators, flowering plants, and conservation biology. *BioScience* 47:297-307.

Kearns, C.A., D.W. Inouye, and N. Waser. 1998. Endangered mutualisms: the conservation of plant–pollinator interactions. *Annual Review of Ecology and Systematics* 29:83-112.

Kerr, J.T., A. Pindar, P. Galpern, L. Packer, S. G. Potts, S.M., Roberts, P. Rasmont, O. Schweiger, S. R. Colla, L.L. Richardson, and D. L. Wagner. 2015. Climate change impacts on bumblebees converge across continents. *Science* 349(6244): 177-180.

Kevan, P.G. 1999. Pollinators as bioindicators of the state of the environment: species, activity and diversity. *Agriculture Ecosystems and Environment* 74:373-393.

Kevan, P.G. 2008. *Bombus franklini*. The IUCN Red List of Threatened Species 2008: e.T135295A4070259. <http://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T135295A4070259.en>. Accessed 9 February 2018.

Kirby, W. 1837. The Insects. In Richardson, J., Swainson, W., and Kirby, W. (eds.), *Fauna Boreali-Americana*, part 4. 325 pp. Josiah Fletcher, Norwich.

Kimoto C. 2010. Effect of livestock grazing on native bees in a Pacific Northwest bunchgrass prairie. MS Thesis, Oregon State University.

Kirilenko, A. and R. S. Hanley. 2007a. Predicting climate change impact on insect biodiversity: comparison of scenarios. pp. 453-457 In *Proceedings of the 32nd International Symposium on Remote Sensing of Environment*, San Jose, Costa Rica (June 25-29, 2007).

Kirilenko, A. and R. S. Hanley. 2007b. Using multiple methods to predict climate change impacts on bumblebees in North America. pp. 42-47, In *Proceedings of the International Conference on Environmental Modeling and Simulation*.

Kissinger, C. N., S. A. Cameron, R. W. Thorp, B. White, and L. F. Solter. 2011. Survey of bumble bee (*Bombus*) pathogens and parasites in Illinois and selected areas of northern California and southern Oregon. *Journal of invertebrate pathology* 107:220–224.

Klein A., B. Vaissiere, J. Cane, I. Steffan-Dewenter, S. Cunningham, C. Kremen, et al. 2007. Importance of pollinators in changing landscapes for world crops. *Proceedings of the Royal Society B: Biological Sciences*, 274:303-313.

Koppert Biological Systems. 2018. Natural Pollination. <https://www.koppert.com/pollination/>. [Accessed 19 March 2018].

Kosior, A., W. Celary, P. Olejniczak, J. Fijal, W. Krol, W. Solarz, and P. Plonka. 2007. The decline of the bumble bees and cuckoo bees (Hymenoptera: Apidae: Bombini) of Western and

Central Europe. *Oryx* 41:79.

Kremen, C., N. M. Williams, R. W. and Thorp. 2002. Crop pollination from native bees at risk from agricultural intensification. *Proceedings of the National Academy of Sciences* 99(26): 16812-16816.

Kruess, A. and T. Tscharntke. 2002a. Contrasting responses of plant and insect diversity to variation in grazing intensity. *Biological Conservation* 106: 293-302.

Kruess, A. and T. Tscharntke. 2002b. Grazing intensity and the diversity of grasshoppers, butterflies, and trap-nesting bees and wasps. *Conservation Biology* 16: 1570-80.

Kudo, G., Y. Nishikawa, T. Kasagi, and S. Kosuge. 2004. Does seed production of spring ephemerals decrease when spring comes early? *Ecological Research* 19:255–259.

Kwong, W. K. and N. A. Moran. 2016. Gut microbial communities of social bees. *Nature Reviews Microbiology* 14(6): 374.

LaBerge, W. E. 1980. A revision of the bees of the genus *Andrena* of the Western Hemisphere. Part X. Subgenus *Andrena*. *Transactions of the American Entomological Society* 106: 395-525.

LaBerge, W. E. 1986. A revision of the bees of the genus *Andrena* of the Western Hemisphere. Part XI. Minor subgenera and subgeneric key. *Transactions of the American Entomological Society* 111: 441-567.

Lark, T. J., J. M. Salmon, and H. K. Gibbs. 2015. Cropland Expansion Outpaces Agricultural and Biofuel Policies in the United States. *Environmental Research Letters* 10: 1-11.

Larsson, J. I. 2007. Cytological variation and pathogenicity of the bumble bee parasite *Nosema bombi* (Microspora, Nosematidae). *Journal of invertebrate pathology* 94:1–11. Available from: <http://www.sciencedirect.com/science/article/pii/S002220110600156X> [Accessed 6August 2014].

Laycock, I., K. M. Lenthall, A. T. Barratt, and J. E. Cresswell. 2012. Effects of imidacloprid, a neonicotinoid pesticide, on reproduction in work bumble bees (*Bombus terrestris*) *Ecotoxicology* 21(7): 1937-1945.

Le Féon, V., A. Schermann-Legionnet, Y. Delettire, S. Aviron, R. Billeter, R. Bugter, F. Hendrick, and F. Burel. 2010. Intensification of agriculture, landscape composition and wild bee

communities: A large scale study in four European countries. *Agriculture, Ecosystems & Environment* 137: 143-150.

Lipa, J. J. and O. Triggiani. 1988. *Crithidia bombi* sp. n. a flagellated parasite of a bumble-bee *Bombus terrestris* L.(Hymenoptera, Apidae). *Acta protozoologica* 27:287–290.

Lozier, J. D., J. P. Strange, I. J. Stewart, and S. A. Cameron. 2011. Patterns of range-wide genetic variation in six North American bumble bee (Apidae: *Bombus*) species. *Molecular Ecology*. Retrieved February 1, 2013, from <http://onlinelibrary.wiley.com/doi/10.1111/j.1365-294X.2011.05314.x/full>.

Macfarlane, R. P., K. D. Patten, L. A. Royce, B. K. W. Wyatt, and D. F. Mayer. 1994. Management potential of sixteen North American bumble bee species. *Melanderia* 50: 1-12.

Macfarlane, R. P., J. J. Lipa, and H. J. Liu. 1995. Bumble bee pathogens and internal enemies. *Bee World* 76(3): 130-148.

Mach, B. M., S. Bondarenko, and D. A. Potter. 2017. Uptake and dissipation of neonicotinoid residues in nectar and foliage of systemically treated woody landscape plants. *Environmental Toxicology* 37(3): 860-870.

Mäder, E., M. Shepherd, M. Vaughan, S. H. Black, and G. LeBuhn. 2011. *Attracting Native Pollinators. Protecting North America's Bees and Butterflies*. 384 pp. North Adams, MA: Storey Publishing.

Maharramov, J. et al. 2013. Genetic variability of the neogregarine *Apicystis bombi*, an etiological agent of an emergent bumblebee disease. *PloS one* 8:e81475. Available from: <http://dx.doi.org/10.1371/journal.pone.0081475>. [Accessed 28 February 2018].

Mallick, S. A. and M. M. Driessen. 2009. Impacts of hive honeybees on Tasmanian leatherwood *Eucryphia lucida* Labill.(Eucryphiaceae). *Austral Ecology* 34:185–195.

Mallinger, R. E., Gaines-Day, H. R., Gratton, C. 2017. Do managed bees have negative effects on wild bees?: A systematic review of the literature. *PloS one* 12:e0189268.

Manley, R., M. Boots, and L. Wilfert. 2015. REVIEW: Emerging viral disease risk to pollinating insects: ecological, evolutionary and anthropogenic factors. *The Journal of applied ecology* 52:331–340.

- Marletto, F., A. Patetta, and A. Manino. 2003. Laboratory assessment of pesticide toxicity to bumblebees. *Bulletin of Insectology* 56:155-158.
- Maxfield-Taylor, S., K. M. Skyrn, and S. Rao. 2011. First record of *Sphaerularia bombi* (Nematoda: Tylenchida: Sphaerularidae), a parasite of bumble bee queens, in the Pacific Northwest. *The Pan-Pacific entomologist* 87:134–137.
- McArt, S. H., C. Urbanowicz, S. McCoshum, R. E. Irwin, and L.S. Adler. 2017. Landscape predictors of pathogen prevalence and range contractions in US bumblebees. *Proceedings of the Royal Society B* 284(1867): 1-8.
- McFrederick, Q. S. and G. LeBuhn. 2006. Are urban parks refuges for bumble bees *Bombus* spp. (Hymenoptera: Apidae)? *Biological Conservation* 129:372-382.
- McMahon, D. P., M. A. Fürst, J. Caspar, P. Theodorou, M. J. F. Brown, and R. J. Paxton. 2015. A sting in the spit: widespread cross-infection of multiple RNA viruses across wild and managed bees. *The Journal of Animal Ecology*. 84(3): 615-624.
- Meehan, T. D., B. P. Werling, D. A. Landis, and C. Gratton. 2011. Agricultural landscape simplification and insecticide use in the Midwestern United States. *Proceedings of the National Academy of Sciences of the United States of America* 108:11500–11505. Available from <http://dx.doi.org/10.1073/pnas.1100751108>.
- Meeus, I., M. J. F. Brown, D. C. De Graaf, and G. U. Y. Smagghe. 2011. Effects of invasive parasites on bumble bee declines. *Conservation biology: the journal of the Society for Conservation Biology* 25:662–671.
- Memmott J., P. G. Craze, N. M. Waser, and M. V. Price. 2007. Global warming and the disruption of plant-pollinator interactions. *Ecology Letters* 10:710-717.
- Memmott J., N. M. Waser, and M. V. Price. 2004. Tolerance of pollination networks to species extinctions. *Proceedings of the Royal Society B* 271:2605-2611.
- Miller-Struttmann, N. E., J. C. Geib, J. D. Franklin, P. G. Kevan, R. M. Holdo, D. Ebert-May, A. M. Lynn, J. A. Kettenbach, E. Hedrick, and C. Galen. 2015. Functional mismatch in a bumble bee pollination mutualism under climate change. *Science* 349:1541–1544.
- Milliron, H. E. 1971. A monograph of the Western Hemisphere bumblebees. I. The genera *Bombus* and *Megabombus* subgenus *Bombias*. *Memoirs of the Entomological Society of Canada*

82: 1-80.

Minckley, R. L., J. H. Cane, L. Kervin, and D. Yanega. 2003. Biological impediments to measures of competition among introduced honey bees and desert bees (Hymenoptera: Apiformes). *Journal of the Kansas Entomological Society*: 306–319.

Mommaerts, V., S. Reynders, J. Boulet, L. Besard, G. Sterk and G. Smagghe. 2010. Risk assessment for side-effects of neonicotinoids against bumblebees with and without impairing foraging behavior. *Ecotoxicology* 19:207-215.

Mommaerts, V. and G. Smagghe. 2011. Side-Effects of Pesticides on the Pollinator *Bombus*: An Overview. In: Stoytcheva, M. (ed), *Pesticides of the Modern World. – Pests Control and Pesticides Exposure and Toxicity Assessment*. InTech, Rijeka. 507-552 pp.

Morales, C. L., M. P. Arbetman, S. A. Cameron, and M. A. Aizen. 2013. Rapid ecological replacement of a native bumble bee by invasive species. *Frontiers in Ecology and the Environment*, 11(10): 529-534.

Morandin, L. A. and C. Kremen. 2013. Hedgerow restoration promotes pollinator populations and exports native bees to adjacent fields. *Ecological Applications* 23(4): 829-839.

Morandin, L. A., Lavery, T. M., Kevan, P. G., Khosla, S., Shipp, L. 2001. Bumble bee (Hymenoptera : Apidae) activity and loss in commercial tomato greenhouses. *Canadian Entomology* 133(6):883-93.

Morandin, L. A. and M. L. Winston. 2003. Effects of novel pesticides on bumble bee (Hymenoptera: Apidae) colony health and foraging ability. *Environmental Entomology* 32(3):555-563.

Morandin, L. A. and M.L. Winston. 2005. Wild bee abundance and seed production in conventional, organic, and genetically modified canola. *Ecological applications* 15(3): 871-881.

Morkeski, A. and A. L. Averill. 2010. Managed pollinator CAP-coordinated agricultural project: Wild bee status and evidence for pathogen 'spillover' with honey bees. *American Bee Journal* 150(11): 1049-1052.

Morkeski, A. and A. Averill. 2012. Wild bee status and evidence for pathogen spillover with honey bees. CAP Updates: 12. Oregon State University Extension. Available online: <http://www.extension.org/pages/30998/wild-bee-status-and-evidence-for-pathogen-spillover->

with-honey-bees. [Accessed 19 March 2018].

Morris, M. G. 1967. Differences between invertebrate faunas of grazed and ungrazed chalk grassland. I. Responses of some phytophagous insects to cessation of grazing. *Journal of Applied Ecology* 4: 459-474.

Mortensen, D. A., J. F. Egan, B. D. Maxwell, M. R. Ryan, and R. G. Smith. 2012. Navigating a critical juncture for sustainable weed management. *BioScience* 62(1): 75-84.

Motta, E. V. S., K. Raymann, and N. A. Moran. 2018. Glyphosate perturbs the gut microbiota of honey bees. *PNAS*. 10.1073/pnas.1803880115.

Mullin, C. A., J. Chen, J. D. Fine, M. T. Frazier, and J. L. Frazier. 2015. The formulation makes the honey bee poison. *Pesticide Biochemistry and Physiology* 120: 27-35.

Murray, T. E., M. F. Coffey, E. Kehoe, and F. G. Horgan. 2013. Pathogen prevalence in commercially reared bumble bees and evidence of spillover in conspecific populations. *Biological conservation* 159:269–276.

National Research Council. 2007. Status of Pollinators in North America. The National Academies Press, Washington, DC.

NatureServe. 2017a. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. “*Bombus crotchii*”. NatureServe, Arlington, Virginia. Available from: <http://explorer.natureserve.org>. [Accessed 13 February 2018].

NatureServe. 2017b. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. “*Bombus franklini*”. NatureServe, Arlington, Virginia. Available from: <http://explorer.natureserve.org>. [Accessed 13 February 2018].

NatureServe. 2017c. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. “*Bombus occidentalis occidentalis*”. NatureServe, Arlington, Virginia. Available from: <http://explorer.natureserve.org>. [Accessed 13 February 2018].

NatureServe. 2017d. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. “*Bombus occidentalis*”. NatureServe, Arlington, Virginia. Available from: <http://explorer.natureserve.org>. [Accessed 13 February 2018].

NatureServe. 2017e. NatureServe Explorer: An online encyclopedia of life [web application].

Version 7.1. “*Bombus suckleyi*”. NatureServe, Arlington, Virginia. Available from: <http://explorer.natureserve.org>. [Accessed 13 February 2018].

Niwa, S., H. Iwano, S. Asada, M. Matsuura, and K. Goka. 2004. A microsporidian pathogen isolated from a colony of the European bumblebee, *Bombus terrestris*, and infectivity on Japanese bumblebee. Japanese Journal of Applied Entomology and Zoology 48:60-64 (in Japanese with English abstract).

Noss, R. F., E. T. LaRoe, and J. M. Scott. 1995. Endangered ecosystems of the United States: a preliminary assessment of loss and degradation. US Department of the Interior, National Biological Service Washington, DC, USA. Available from: <http://noss.cos.ucf.edu/papers/Noss%20et%20al%201995.pdf>.

Öckinger, E. and H. G. Smith. 2007. Semi-natural grasslands as population sources for pollinating insects in agricultural landscapes. Journal of Applied Ecology 44: 50-59.

[ODA] Oregon Department of Agriculture. 2015. Oregon Administrative Rules (OAR 603-057-0388). Available from: http://arcweb.sos.state.or.us/pages/rules/oars_600/oar_603/603_tofc.html [Accessed 25 September 2018].

Ollerton J., R. Winfree, and S. Tarrant. 2011. How many flowering plants are pollinated by animals. Oikos 120:321-326. DOI: 10.1111/j.1600-0706.2010.18644.x

Osborne JL. 2012. Bumblebees and pesticides. Nature: News & Views. Nature 491: 43-45.

Osborne, J. L., A. P. Martin, C. R. Shortall, A. D. Todd, D. Goulson, M. E. Knight, R. J. Hale, and R. A. Sanderson. 2008. Quantifying and comparing bumble bee nest densities in gardens and countryside habitats. Journal of Applied Ecology 45:784-792.

Otterstatter, M. C., and J. D. Thomson. 2008. Does pathogen spillover from commercially reared bumble bees threaten wild pollinators? PloS one 3:e2771.

Otterstatter, M. C., and T. L. Whidden. 2004. Patterns of parasitism by tracheal mites (*Locustacarus buchneri*) in natural bumble bee populations. Apidologie 35:351–357. Available from: <http://www.edpsciences.org/10.1051/apido:2004024>. [Accessed 28 February 2018].

Otterstatter, M. C., R. J. Gegear, S. R. Colla, and J. D. Thomson. 2005. Effects of parasitic mites and protozoa on the flower constancy and foraging rate of bumble bees. Behavioral ecology and sociobiology 58:383–389. Available from: <http://link.springer.com/article/10.1007/s00265-005->

0945-3 [Accessed 20 February 2018].

Otti, O., and P. Schmid-Hempel. 2007. *Nosema bombi*: A pollinator parasite with detrimental fitness effects. *Journal of invertebrate pathology* 96:118–124.

Otti, O. and P. Schmid-Hempel. 2008. A field experiment on the effect of *Nosema bombi* in colonies of the bumblebee *Bombus terrestris*. *Ecological entomology* 33:577–582.

Paini, D. R. and J. D. Roberts. 2005. Commercial honey bees (*Apis mellifera*) reduce the fecundity of an Australian native bee (*Hylaeus alcyoneus*). *Biological conservation* 123:103–112.

Panzer, R. 2002. Compatibility of prescribed burning with the conservation of insects in small, isolated prairie reserves. *Conservation Biology* 16:1296–1307.

Parry, M. L., O. F. Canziani, J. P. Palutikof, P. J. van der Linden, and C. E. Hanson. 2007. IPCC, 2007: climate change 2007: impacts, adaptation and vulnerability. Contribution of working group II to the fourth assessment report of the intergovernmental panel on climate change. Cambridge University Press, Cambridge.

Paton, D. C. 1990. Budgets for the use of floral resources in mallee heath. *In* The Mallee Lands: A Conservation Perspective, eds. J. C. Noble, P. J. Joss, G. K. Jones, Melbourne: CSIRO. 189–93 pp.

Paton, D. C. 1993. Honeybees in the Australian environment. *Bioscience* 43:95–103.

Paton, D. C. 1996. Overview of feral and managed honeybees in Australia: distribution, abundance, extent of interactions with native biota, evidence of impacts and future research. Australian Nature Conservation Agency, Canberra, Australian Capital Territory. 77 pp.

Paxton, R. J. 2010. Does infection by *Nosema ceranae* cause “Colony Collapse Disorder” in honey bees (*Apis mellifera*)? *Journal of Apicultural Research* 49:80–84.

Pisa, L. W. et al. 2014. Effects of neonicotinoids and fipronil on non-target invertebrates. *Environmental Science and Pollution Research International*. *Environmental Science and Pollution Research* 22(1): 68-102.

Plath, O. E. 1922. Notes on the nesting habits of several North American bumblebees. *Psyche* 29(5-6):189-202.

Plath, O. E. 1927. Notes on the nesting habits of some of the less common New England bumblebees. *Psyche* 34: 122-128.

Pleasants, J. M. 1981. Bumblebee response to variation in nectar availability. *Ecology*:1648–1661.

Pleasants, J. M. and K. S. Oberhauser. 2013. Milkweed loss in agricultural fields because of herbicide use: effect on the monarch butterfly population. *Insect conservation and diversity / Royal Entomological Society of London* 6:135–144.

Plischuk, S. et al. 2009. South American native bumblebees (Hymenoptera: Apidae) infected by *Nosema ceranae* (Microsporidia), an emerging pathogen of honeybees (*Apis mellifera*) *Environmental Microbiology Reports* 1(2): 131-135.

Plischuk, S., M. E. Pocco, and C. E. Lange. 2013. The tracheal mite *Locustacarus buchneri* in South American native bumble bees (Hymenoptera: Apidae). *Parasitology International* 62:505–507.

Plowright, R. C. and W. P. Stephen. 1980. The taxonomic status of *Bombus franklini* (Hymenoptera: Apidae). *Canadian Entomologist* 112: 475-479.

Radeloff, V. C. et al. 2018. Rapid growth of the US wildland-urban interface raises wildfire risk. *Proceedings of the National Academy of Sciences* 201718850; DOI: 10.1073/pnas.1718850115.

Rasmont, P., A. Pauly, M. Terzo, S. Patiny, D. Michez, S. Iserbyl, Y. Barbier, and E. Haubruge. 2006. The survey of wild bees (Hymenoptera, Apoidea) in Belgium and France. p.18 *In* Status of the World's Pollinators. Food and Agriculture Organization of the United Nations, Rome.

Rasmont, P. and S. Iserbyl. 2012. The Bumblebees Scarcity Syndrome: Are heat waves leading to local extinctions of bumblebees (Hymenoptera: Apidae: Bombus)? *Annales de la Société Entomologique de France*. 48(3-4): 275–280. Available from: <http://www.tandfonline.com/doi/abs/10.1080/00379271.2012.10697776>. [Accessed 1 March 2018].

Richardson, L. 2014. Data Contributors. Available from <http://www.leifrichardson.org/bbna.html> [Accessed 23 September 2015].

Richardson, L. 2017. Unpublished database. Information on database and data contributors Available from: <http://www.leifrichardson.org/bbna.html> [Accessed 22 February 2017).

Rickman, T. 2017. U.S. Forest Service — Eagle Lake Ranger District *Bombus occidentalis* observations for 2013 and 2014. Unpublished Data.

Rogers, S. R., P. Cajamarca, D. R. Tarpy, and H. J. Burrack. 2013. Honey bees and bumble bees respond differently to inter-and intra-specific encounters. *Apidologie* 44:621–629.

Roland, J. and S. F. Matter. 2007. Encroaching forests decouple alpine butterfly population dynamics. *Proceedings of the National Academy of Sciences* 104:13702–13704.

Rundlöf, M. et al. 2015. Seed coating with a neonicotinoid insecticide negatively affects wild bees. *Nature* 521:77–80.

Roubik, D. W. 2009. Ecological impact on native bees by the invasive Africanized honey bee. *Acta Biológica Colombiana* 14:115–124.

Rusterholz, H. P. and Baur, B. 2010. Delayed response in a plant–pollinator system to experimental grassland fragmentation. *Oecologia* 163: 141-152.

Rutrecht, S. T. and M. J. F. Brown. 2008. The life-history impact and implications of multiple parasites for bumble bee queens. *International journal for parasitology* 38:799–808.

Rutrecht, S. T. and M. J. F. Brown. 2009. Differential virulence in a multiple-host parasite of bumble bees: resolving the paradox of parasite survival? *Oikos* 118:941–949.

Sánchez-Bayo, F., D. Goulson, F. Pennacchio, F. Nazzi, K. Goka, and N. Desneux. 2016. Are bee diseases linked to pesticides?—A brief review. *Environment International* 89: 7-11.

Sachman-Ruiz, B., V. Narváez-Padilla, and E. Reynaud. 2015. Commercial *Bombus impatiens* as reservoirs of emerging infectious diseases in central México. *Biological invasions*:1–11. Springer International Publishing. Available from <http://link.springer.com/article/10.1007/s10530-015-0859-6> [Accessed 1 March 2018].

Saunders, S., C. Montgomery, and T. Easley. 2008. Hotter and drier: the West’s changed climate. Prepared for The Rocky Mountain Climate Organization and Natural Resources Defense Council. Page 64. Available from: <http://www.nrdc.org/globalWarming/west/west.pdf> [Accessed 20 February 2018].

Schmid-Hempel, P. 2001. On the evolutionary ecology of host–parasite interactions: addressing the question with regard to bumblebees and their parasites. *Die Naturwissenschaften* 88:147–158.

Schmid-Hempel, P. and R. Loosli. 1998. A contribution to the knowledge of *Nosema* infections in bumble bees, *Bombus* spp. *Apidologie* 29:525–535. Available from: <http://hal.archives-ouvertes.fr/docs/00/89/15/54/PDF/hal-00891554.pdf> [Accessed 1 March 2018].

Schmid-Hempel, R. and Tognazzo, M. 2010. Molecular divergence defines two distinct lineages of *Crithidia bombi* (Trypanosomatidae), parasites of bumblebees. *Journal of Eukaryotic Microbiology* 57(4): 337–345.

Schmid-Hempel, R., M. Eckhardt, D. Goulson, D. Heinzmann, C. Lange, S. Plischuk, L. R. Escudero, R. Salathé, J. J. Scriven, and P. Schmid-Hempel. 2014. The Invasion of Southern South America by Imported Bumblebees and Associated Parasites. *The Journal of Animal Ecology* 83 (4): 823–37.

Schmidt, N. M., H. Olsen, and H. Leirs. 2009. Livestock grazing intensity affects abundance of Common shrews (*Sorex araneus*) in two meadows in Denmark. *BMC Ecology* 9:2doi:10.1186/1472-6785-9-2. Available from: <http://www.biomedcentral.com/1472-6785/9/2> [Accessed 20 February 2018].

Scholl, A., R. W. Thorp, and E. Obrecht. 1992. The genetic relationship between *Bombus franklini* (Frison) and other taxa of the subgenus *Bombus* s. str. (Hymenoptera: Apidae). *Pan-Pacific Entomologist* 68: 46–51.

Schultz, C. B. and E. E. Crone. 1998. Burning prairie to restore butterfly habitat: a modeling approach to management tradeoffs for the Fender’s blue. *Restoration Ecology* 6: 244–252.

Schwarz, R. S. N. A. Moran, and J. D. Evans. 2016. Early gut colonizers shape parasite susceptibility and microbiota composition in honey bee workers. *Proceedings of the National Academy of Sciences* 113(33): 9345–9350.

Scohier, A., A. Ouin, A. Farruggia, and B. Dumont. 2012. Is there a benefit of excluding sheep from pastures at flowering peak on flower-visiting insect diversity? *Journal of Insect Conservation* 17(2): 287–294.

Scott-Dupree, C. D., L. Conroy, and C. R. Harris. 2009. Impact of currently used or potentially

useful insecticides for canola agroecosystems on *Bombus impatiens* (Hymenoptera: Apidae), *Megachile rotundata* (Hymenoptera: Megachilidae), and *Osmia lignaria* (Hymenoptera: Megachilidae). *Journal of Economic Entomology* 102:177-182.

Scullen, H. A. 1927. Bees belonging to the family Bremidae taken in western Oregon, with notes. *Pan-Pacific Entomologist* 4(2): 69-76, 121-128.

Scursoni, J., F. Forcella, J. Gunsolus, M. Owen, R. Oliver, R. Smeda, and R. Vidrine. 2006. Weed diversity and soybean yield with glyphosate management along a north-south transect in the United States. *Weed Science* 54:713–719.

Shavit, O., A. Dafni, and G. Ne'eman. 2009. Competition between honeybees (*Apis mellifera*) and native solitary bees in the Mediterranean region of Israel—Implications for conservation. *Israel Journal of Plant Sciences* 57:171–183.

Sheffield, C. S., L. Richardson, S. Cannings, H. Ngo, J. Heron, P. H. Williams. 2016. Biogeography and designatable units of *Bombus occidentalis* Greene and *B. terricola* Kirby (Hymenoptera: Apidae) with implications for conservation status assessments. *Journal of Insect Conservation*: 1–11.

Shepherd, M., S. L. Buchmann, M. Vaughan, and S. H. Black. 2003. *Pollinator Conservation Handbook*. The Xerces Society, Portland, Oregon.

Shykoff, J. A., and P. Schmid-Hempel. 1991. Parasites delay worker reproduction in bumblebees: consequences for eusociality. *Behavioral ecology: official journal of the International Society for Behavioral Ecology* 2:242–248.

Singh, R., A. L. Levitt, E. G. Rajotte, E. C. Holmes, N. Ostiguy, W. I. Lipkin, A. L. Toth, D. L. Cox-Foster, and Others. 2010. RNA viruses in hymenopteran pollinators: evidence of inter-taxa virus transmission via pollen and potential impact on non-*Apis* hymenopteran species. *PloS one* 5:e14357.

Sjodin, N. E. 2007. Pollinator behavioural responses to grazing intensity. *Biodiversity Conservation* 16:2103-2121.

Skinner, C. N. 1995. Change in spatial characteristics of forest openings in the Klamath Mountains of northwestern California, USA. *Landscape ecology* 10:219–228. Available from: <http://www.springerlink.com/index/T4U3205640483310.pdf> [Accessed 20 February 2018].

Sladen, F. L. W. 1912. The Humblebee: Its life history and how to domesticate it. Macmillan and Co., London 283p.

Sleeter, B. M. 2016. Central Valley Report. U.S. Geological Survey, Western Geographic Science Center, Menlo Park, CA. Available from:
<https://landcovertrends.usgs.gov/west/eco7Report.html>. [Accessed 20 March 2018].

Smallidge, P. J. and D. J. Leopold. 1997. Vegetation management for the maintenance and conservation of butterfly habitats in temperate human-dominated habitats. *Landscape and Urban Planning* 38:259-280.

Sprayberry, J. D., K.A. Ritter, and J.A. Riffell. 2013. The Effect of olfactory exposure to non-insecticidal agrochemicals on bumblebee foraging behavior. *PloS one* 8(10): e76273.

Stanley, D. A., M. P. Garratt, J. B. Wickens, V. J. Wickens, S. G. Potts, and N. E. Raine. 2015a. Neonicotinoid pesticide exposure impairs crop pollination services provided by bumblebees. *Nature* 528(7583): 548-550.

Stanley, D. A., A. L. Russell, S. J. Morrison, C. Rogers, and N. E. Raine. 2016. Investigating the impacts of field-realistic exposure to a neonicotinoid pesticide on bumblebee foraging, homing ability and colony growth. *Journal of Applied Ecology* 53(5): 1440-1449.

Stanley, D. A., K. E. Smith and N.E. Raine. 2015b. Bumblebee learning and memory is impaired by chronic exposure to a neonicotinoid pesticide. *Scientific Reports* 5(16508): 1-10.

State of Massachusetts. 2018. General Laws: CHAPTER 128, Section 35. Available from
<https://malegislature.gov/Laws/GeneralLaws/PartI/TitleXIX/Chapter128/Section35>. [Accessed 25 September 2018].

State of Minnesota. 2017. 17.445 INSPECTIONS AND SERVICES; FEES. Available from
<https://www.revisor.mn.gov/statutes/cite/17.445> [Accessed 25 September 2018].

Steffan-Dewenter, I. and T. Tscharntke. 2000. Resource overlap and possible competition between honey bees and wild bees in central Europe. *Oecologia* 122:288–296.

Stephen, W. P. 1957. Bumble bees of western America (Hymenoptera: Apoidea). Oregon State College Agr. Exp. Sta.: Tech. Bull. No. 40. 163pp.

Stoner, K. J. L., and A. Joern. 2004. Landscape vs. local habitat scale influences to insect

communities from tallgrass prairie remnants. *Ecological applications: a publication of the Ecological Society of America* 14:1306–1320.

Stoner, K. A. 2016. Current pesticide risk assessment protocols do not adequately address differences between honey bees (*Apis mellifera*) and bumble bees (*Bombus* spp.). *Frontiers in Environmental Science* 4: 79.

Sugden, E. 1985. Pollinators of *Astragalus monoensis* Barneby (Fabaceae) - New host records - Potential impact of sheep grazing. *Great Basin Naturalist* 45: 299-312.

Suhonen, J., J. Rannikko, and J. Sorvari. 2015. The Rarity of Host Species Affects the Co-Extinction Risk in Socially Parasitic Bumblebee *Bombus* (*Psithyrus*) Species. *Annales zoologici Fennici* 52:236–242.

Tasei, J. N., J. Lerin, and G. Ripault. 2000. Sub-lethal effects of imidacloprid on bumblebees, *Bombus terrestris* (Hymenoptera: Apidae), during a laboratory feeding test. *Pest Management Science* 56:784-788.

Tepedino, V. J., D. G. Alston, B. A. Bradley, T. R. Toler, and T. L. Griswold. 2007. Orchard pollination in Capitol Reef National Park, Utah, USA. Honey bees or native bees? *Biodiversity and conservation* 16: 3083–3094.

Thompson, H. M. and L. V. Hunt. 1999. Extrapolating from honeybees to bumblebees in pesticide risk assessment. *Ecotoxicology* 8(3): 147-166.

Thomson, D. 2004. Competitive Interactions between the Invasive European Honey Bee and Native Bumble Bees. *Ecology* 85:pp. 458–470.

Thomson, D. M. 2006. Detecting the effects of introduced species: a case study of competition between *Apis* and *Bombus*. *Oikos* 114:407–418.

Thomson, J. D. 2010. Flowering phenology, fruiting success and progressive deterioration of pollination in an early-flowering geophyte. *Philosophical Transactions of the Royal Society B: Biological Sciences* 365:3187–3199.

Thorp, R. W. 1970. The type locality of *Bombus franklini* and notes on putative Arizona records of other Bombini (Hymenoptera: Apidae). *Pan-Pacific Entomologist* 46: 177-180.

Thorp, R. W. 1996. Resource overlap among native and introduced bees in California. Pages

143–152. Linnean Society Symposium Series.

Thorp, R. W. 1999. Franklin's bumble bee, *Bombus franklini* (Frison 1921): a species of special concern. Unpublished Report to USDA Forest Service, Ashland, OR on 1998 season (submitted 23 Nov 99).

Thorp, R. W. 2001. Franklin's bumble bee, *Bombus franklini* (Frison 1921): a species of special concern. Unpublished Report to US Fish and Wildlife Service, Portland, OR on 1999-2000 seasons (submitted 14 May 2001).

Thorp, R. W. 2004. Franklin's bumble bee, *Bombus (Bombus) franklini* (Frison). Unpublished Report to US Fish and Wildlife Service, Portland, OR on 2001-2003 seasons (submitted 29 June 2004).

Thorp, R. W. 2005a. Franklin's bumble bee, *Bombus (Bombus) franklini* (Frison). Unpublished Report to US Fish and Wildlife Service, Portland, OR on 2004 season (submitted 29 March 2005).

Thorp, R. W. 2005b. Franklin's bumble bee, *Bombus (Bombus) franklini* (Frison). Unpublished Report to US Fish and Wildlife Service, Portland, OR on 2005 season (submitted 7 November 2005).

Thorp, R. W. 2005c. Species Profile: *Bombus franklini*. In Shepherd, M. D., D. M. Vaughan, and S. H. Black (Eds). Red List of Pollinator Insects of North America. CD-ROM Version 1 (May 2005). Portland, OR: The Xerces Society for Invertebrate Conservation. Available from: http://www.xerces.org/wp-content/uploads/2011/02/bombus_franklini.pdf [Accessed 20 February 2018].

Thorp, R. W. 2008. Franklin's Bumble Bee, *Bombus (Bombus) franklini* (Frison) (Hymenoptera: Apidae), Report on 2006-2007 Seasons (Submitted 10 March 2008).

Thorp, R. W., D. S. Horning, Jr., and L. L. Dunning. 1983. Bumble bees and cuckoo bumble bees of California. Bulletin of the California Insect Survey 23: 1-79.

Thorp, R. W., S. Jepsen, S. F. Jordan, E. Evans, and S. H. Black. 2010. Petition to list Franklin's bumble bee as an Endangered Species under the U.S. Endangered Species Act, Submitted by The Xerces Society for Invertebrate Conservation. Available from: <http://www.xerces.org/wp-content/uploads/2010/06/bombus-franklini-petition.pdf>. [Accessed 20 March 2018].

Thorp, R. W., A. M. Wenner, and J. F. Barthell. 2000. Pollen and nectar resource overlap among bees on Santa Cruz Island. Pages 261–267 *In*: Proceedings of the Fifth California Islands Symposium (Browne et al., eds).

[USDA] U.S. Department of Agriculture. 2014. Pest Risk Assessment for Bumble Bees from Canada. February, 2014. Version 1.1. 36 pp.

[USDA] U.S. Department of Agriculture. Animal and Plant Health Inspection Service. U.S. Regulated Plant Pest Table. 2018. Available from <https://www.aphis.usda.gov/aphis/ourfocus/planthealth/import-information/rppl/rppl-table>. [Accessed 25 September 2018].

[U.S. EPA] United States Environmental Protection Agency. 2000. *Effect of 3,6-Dichloro-2methoxybenzoic acid on Apis mellifera Mortality*; U.S. Environmental Protection Agency, Office of Prevention, Pesticides, and Toxic Substances, Office of Pesticide Programs, Environmental Fate and Effects Division, U.S. Government Printing Office: Washington, DC.

[U.S. EPA] United States Environmental Protection Agency. 2012, May 10. OCSPP 850.3020: Honey Bee Acute Contact Toxicity Test [EPA 712-C-019]. Available from <http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OPPT-2009-0154-0016>. [Accessed 25 September 2018].

[U.S. EPA] United States Environmental Protection Agency. 2013. Available from: <http://www2.epa.gov/sites/production/files/2013-11/documents/bee-label-info-ltr.pdf>. [Accessed 25 September 2018].

[U.S. EPA] United States Environmental Protection Agency. 2014, June 19. Guidance for Assessing Pesticide Risks to Bees. Available from http://www2.epa.gov/sites/production/files/2014-06/documents/pollinator_risk_assessment_guidance_06_19_14.pdf. [Accessed 25 September 2018].

[USFS] U.S. Department of Agriculture Forest Service. 2013. Region 5 Forester's 2013 Sensitive Animal Species List. Available from: <https://www.fs.usda.gov/main/r5/plants-animals/wildlife>. [Accessed 13 February 2018].

[USFWS] U.S. Fish and Wildlife Service. 2011. Endangered and Threatened Wildlife and Plants; 90-Day Findings on a Petition to List the Franklin's Bumble Bee as Endangered. 76 FR 56381-56391. September 13, 2011.

[USFWS] U.S. Fish and Wildlife Service. 2016. Endangered and Threatened Wildlife and Plants;

90-Day Findings on 29 Petitions. 81 FR 14058 14072. March 16, 2016.

[USGS] United States Geological Survey. 2014. An Overview Comparing Results from Two Decades of Monitoring for Pesticides in the Nation's Streams and Rivers, 1992–2001 and 2002–2011. National Water-Quality Assessment (NAWQA) Project. Available from: <https://pubs.usgs.gov/sir/2014/5154/pdf/sir2014-5154.pdf>. [Accessed 4 October 2018].

[USGS] United States Geological Survey. 2017a. Estimated Annual Agricultural Pesticide Use. Pesticide Use Maps: 2,4-D. National Water-Quality Assessment (NAWQA) Project. Available from: http://water.usgs.gov/nawqa/pnsp/usage/maps/show_map.php?year=2015&map=24D&hilo=L&disp=2,4-D [Accessed 9 March 2018].

[USGS] United States Geological Survey. 2017b. Estimated Annual Agricultural Pesticide Use. Pesticide Use Maps: dicamba. National Water-Quality Assessment (NAWQA) Project. Available from: https://water.usgs.gov/nawqa/pnsp/usage/maps/show_map.php?year=2015&map=DICAMBA&hilo=L&disp=Dicamba [Accessed 9 March 2018].

[USGS] United States Geological Survey. 2017c. Estimated Annual Agricultural Pesticide Use. Pesticide Use Maps. National Water-Quality Assessment (NAWQA) Project. Available from: https://water.usgs.gov/nawqa/pnsp/usage/maps/compound_listing.php. [Accessed 9 March 2018].

Vandame, R., and L. P. Belzunces. 1998. Joint actions of deltamethrin and azole fungicides on honey bee thermoregulation. *Neuroscience letters* 251:57–60.

Van der Steen, J. J. M. 2008. Infection and transmission of *Nosema bombi* in *Bombus terrestris* colonies and its effect on hibernation, mating and colony founding. *Apidologie* 39:273–282.

van Wilgenburg, E., G. Driessen, and L. W. Beukeboom. 2006. Single locus complementary sex determination in Hymenoptera: an “unintelligent” design? *Frontiers in Zoology* 3(1): 1-15. Available from: <http://www.frontiersinzoology.com/content/3/1/1>. [Accessed 20 March 2018].

Vaughan, M., B. E. Vaissi`ere, G. Maynard, M. Kasina, R. C. F. Nocelli, C. Scott-Dupree, E. Johansen, C. Brittain, M. Coulson, and A. Dinter. 2014. Overview of Non-Apis Bees. D. Fischer and T. Moriarty, editors. *Pesticide Risk Assessment for Pollinators*. pp. 5-18.

Vazquez, D. P. and D. Simberloff. 2003. Changes in interaction biodiversity induced by an introduced ungulate. *Ecology Letters* 6: 1077-1083.

Velthuis, H. H. W. and A. Van Doorn. 2006. A century in advances in bumblebee domestication and the economic and environmental aspects of its commercialization for pollination. *Apidologie* 37:421-451.

Walther-Hellwig, K., G. Fokul, R. Frankl, R. Büchler, K. Ekschmitt, and V. Wolters. 2006. Increased density of honeybee colonies affects foraging bumblebees. *Apidologie* 37:517–532.

Wenner, A. M. and R. W. Thorp. 1994. Removal of feral honey bee (*Apis mellifera*) colonies from Santa Cruz Island. Pages 513–522. *The fourth California islands symposium: update on the status of resources.*

Westphal, C., I. Steffan-Dewenter, and T. Tscharntke. 2003. Mass flowering crops enhance pollinator densities at a landscape scale. *Ecology Letters* 6(11): 961-965.

Westphal, C., I. Steffan-Dewenter, and T. Tscharntke. 2009. Mass flowering oilseed rape improves early colony growth but not sexual reproduction of bumblebees. *Journal of Applied Ecology* 46: 187-193.

Whitehorn, P. R., S. O'Connor, F. L. Wackers, and D. Goulson. 2012. Neonicotinoid pesticide reduces bumble bee colony growth and queen production. *Science* 10.1126/science.1215025.

Whitehorn, P. R., M. C. Tinsley, M. J. F. Brown, B. Darvill, and D. Goulson. 2009. Impacts of inbreeding on bumblebee colony fitness under field conditions. *BMC Evolutionary Biology* 9:152.

Whitehorn, P. R., M. C. Tinsley, M. J. F. Brown, B. Darvill, and D. Goulson. 2011. Genetic diversity, parasite prevalence and immunity in wild bumblebees. *Proceedings of the Royal Society B* 278:1195–1202. Available from: <http://dx.doi.org/10.1098/rspb.2010.1550>. [Accessed 1 March 2018].

Whitehorn, P. R., M. C. Tinsley, M. J. F. Brown, B. Darvill, and D. Goulson. 2014. Genetic diversity and parasite prevalence in two species of bumblebee. *Journal of Insect Conservation* 18:667–673.

Whittington, R. and Winston, M. L. 2003. Effects of *Nosema bombi* and its treatment fumagillin on bumble bee (*Bombus occidentalis*) colonies. *Journal of Invertebrate Pathology* 84(1): 54-58.

Whittington, R., M. L. Winston, C. Tucker, and A. L. Parachnowitsch. 2004. Plant-species

identity of pollen collected by bumblebees placed in greenhouses for tomato pollination. Canadian journal of plant science. Revue Canadienne de Phytotechnie 84:599–602.

Wieczorek, J., Q. Guo, and R. Hijmans. 2004. The point-radius method for georeferencing locality descriptions and calculating associated uncertainty. International journal of geographical information science 18:745–767.

Williams, P. H. 1986. Environmental change and the distributions of British bumble bees (*Bombus* Latr.). Bee World 67:50–61.

Williams, P. H. 1991. The bumble bees of the Kashmir Himalaya (Hymenoptera: Apidae, Bombini). Bulletin of the British Museum of Natural History (Entomology) 60: 1-204.

Williams, P. H. 1998. An annotated checklist of bumble bees with an analysis of patterns of description (Hymenoptera: Apidae, Bombini). Bulletin of the Natural History Museum, London (Ent.) 67:79-152. Updated at: www.nhm.ac.uk/research-curation/projects/bombus/. [Accessed 28 February 2018].

Williams, P. H., M. B. Araújo, and P. Rasmont. 2007. Can vulnerability among British bumblebee (*Bombus*) species be explained by niche position and breadth? Biological Conservation 138:493–505.

Williams P. H., M. J. F. Brown, J. C. Carolan, J. An, D. Goulson, A. Murat Ayetkin, L. R. Best, A. M. Byvaltsev, B. Cederberg, R. Dawson, J. Huang, M. Ito, A. Monfared, R. H. Raina, P. Schmid-Hempel, C. S. Sheffield, P. Sima, and Z. Xie. 2012. Unveiling cryptic species of the bumblebee subgenus *Bombus* s. str. Worldwide with COI barcodes (Hymenoptera: Apidae). Systematics and Biodiversity. Available from: <http://dx.doi.org/10.1080/14772000.2012.664574> [Accessed 20 February 2018].

Williams, P. H., S. A. Cameron, H. M. Hines, B. Cederberg, and P. Rasmont. 2008a. A simplified subgeneric classification of the bumblebees (genus *Bombus*). Apidologie 39:46–74.

Williams, P. S. Colla, and Z. Xie. 2009. Bumblebee vulnerability: Common correlates of winners and losers across three continents. Conservation Biology: The Journal of the Society for Conservation Biology 23:931–940.

Williams, P. H. and J. L. Osborne. 2009. Bumblebee vulnerability and conservation world-wide. Apidologie 40:367–387.

Williams, G. R., A. B. A. Shafer, R. E. L. Rogers, D. Shutler, and D. T. Stewart. 2008b. First detection of *Nosema ceranae*, a microsporidian parasite of European honey bees (*Apis mellifera*), in Canada and central USA. *Journal of invertebrate pathology* 97:189–192.

Williams, P. H., R. W. Thorp, L. L. Richardson, and S. R. Colla. 2014. *The Bumble bees of North America: An Identification guide*. Princeton University Press, Princeton.

Wills, R. T., Lyons, M. N., and Bell, D. T. 1990. The European honey bee in Western Australian Kwongan: foraging preferences and some implications for management. *Proceedings of the Ecological Society of Australia* 16:167–76.

Winfree, R., N. M. Williams, H. Gaines, J. S. Ascher, C. and Kremen, C. 2008. Wild bee pollinators provide the majority of crop visitation across land-use gradients in New Jersey and Pennsylvania, USA. *Journal of Applied Ecology* 45(3): 793-802.

Wisk, J. D. et al. 2014. Assessing Exposure of Pesticides to Bees. *In* *Pesticide Risk Assessment for Pollinators*. Eds: D. Fischer and T. Moriarty, John Wiley & Sons, Inc., Hoboken, NJ, USA. 45-74 pp.

Wratt, E. C. 1968. The pollinating activities of bumble bees and honey bees in relation to temperature, competing forage plants, and competition from other foragers. *Journal of Apicultural Research* 7:61–6.

Xerces Society, Natural Resources Defense Council, Defenders of Wildlife, and Dr. Robbin Thorp. 2010. Petition to the USDA-APHIS seeking regulation of bumble bee movement. 26 pp. Available from: <http://www.xerces.org/petition/xerces-bumblebee-petition-to-aphis.pdf>. [Accessed 25 September 2018].

Xerces Society, Natural Resources Defense Council, Defenders of Wildlife, and Dr. Robbin Thorp. 2013, October 29. Letter to Secretary Vilsack regarding January 2010 petition to regulate the movement of commercial bumble bees. 4 pp.

Xerces Society, Natural Resources Defense Council, Defenders of Wildlife, and Dr. Robbin Thorp. 2014a, January 16. Letter to Secretary Vilsack regarding January 2010 petition to regulate the movement of commercial bumble bees. 2 pp.

Xerces Society, Natural Resources Defense Council, Defenders of Wildlife, and Dr. Robbin Thorp. 2014b, August 26. Letter to Osama El-Lissy regarding meeting to regulate commercial bumble bees. 16 pp.

Xerces Society. 2012. Database of records from Bumble Bee Citizen Monitoring Project (2008-2012). Maintained by Rich Hatfield, Xerces Society.

Xerces Society, Wildlife Preservation Canada, York University, The Montreal Insectarium, The London Natural History Museum, BeeSpotter. 2017. Data accessed from Bumble Bee Watch, a collaborative website to track and conserve North America's bumble bees. Available from: <http://www.bumblebeewatch.org/app/#/bees/lists> [Accessed 22 February 2017].

Xie, Z., P. Williams, and Y. Tang. 2008. The effect of grazing on bumblebees in the high rangelands of the eastern Tibetan Plateau of Sichuan. *Journal of Insect Conservation* 12(6): 695-703.

Yoneda, M., H. Furuta, Y. Kanbe, K. Tsuchida, K. Okabe, and K. Goka. 2008. Reproduction and transmission within a colony of bumblebee tracheal mite *Locustacarus buchneri* (Acari: Podapolipidae) in *Bombus terrestris* (Hymenoptera: Apidae). *Applied Entomology and Zoology* 43:391–395. Available from: <http://jlc.jst.go.jp/JST.JSTAGE/aez/2008.391?from=Google>. [Accessed 1 March 2018].

Zald, H. S. J., T. A. Spies, M. Huso, and D. Gatzliolis. 2012. Climatic, landform, microtopographic, and overstory canopy controls of tree invasion in a subalpine meadow landscape, Oregon Cascades, USA. *Landscape ecology* (27): 1197-1212. Available from: <http://bit.ly/2okar3v> [Accessed 20 February 2018].

Zayed, A. 2009. Bee genetics and conservation. *Apidologie* 40:237–262.

Zayed, A. and L. Packer. 2005. Complementary sex determination substantially increases extinction proneness of haplodiploid populations. *Proceedings of the National Academy of Sciences of the United States of America* 102:10742–10746.

Zhu, W., D. R. Schmehl, C. A. Mullin, and J. L. Frazier. 2014. Four common pesticides, their mixtures and a formulation solvent in the hive environment have high oral toxicity to honey bee larvae. *PloS one* 9:e77547. Available from <http://dx.doi.org/10.1371/journal.pone.0077547>. [Accessed 25 September 2018].

Personal Communications

Rickman, T. 2017. District Wildlife Biologist at US Forest Service, Mt. Lassen National Forest. Personal Communication with Rich Hatfield, Xerces Society. 20 August 2017.

Thorp, R. W. 2013. Professor emeritus, University of California, Davis. Personal communication

with Sarina Jepsen, Xerces Society.

Thorp, R. W. 2014. Professor emeritus, University of California, Davis. Personal communication with Sarah Foltz Jordon, Xerces Society.

Thorp, R. W. 2017. Professor emeritus, University of California, Davis. Personal communication with Rich Hatfield, Xerces Society. 13 March 2017.

XI. DETAILED DISTRIBUTION MAPS

Crotch bumble bee (*Bombus crotchii*) Global Distribution

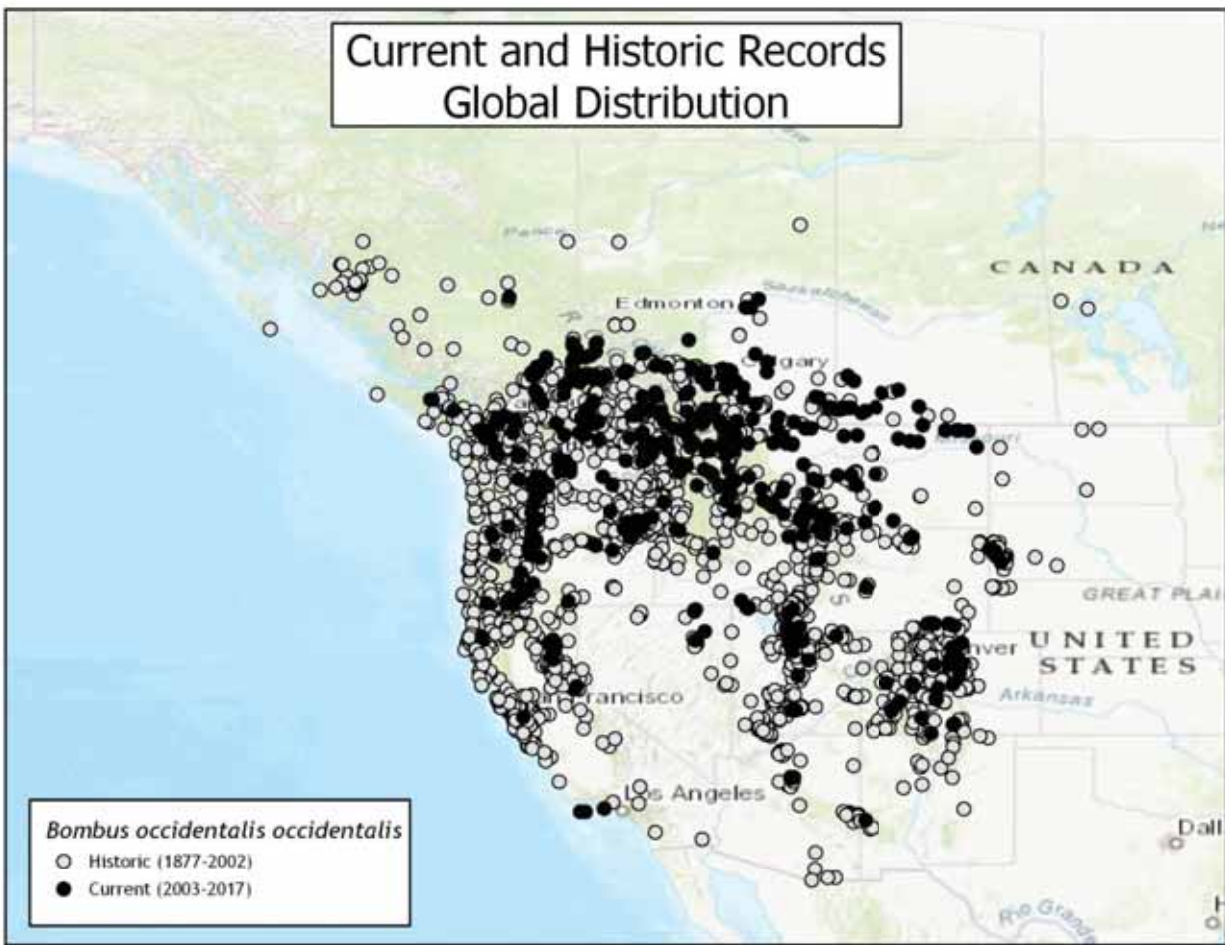




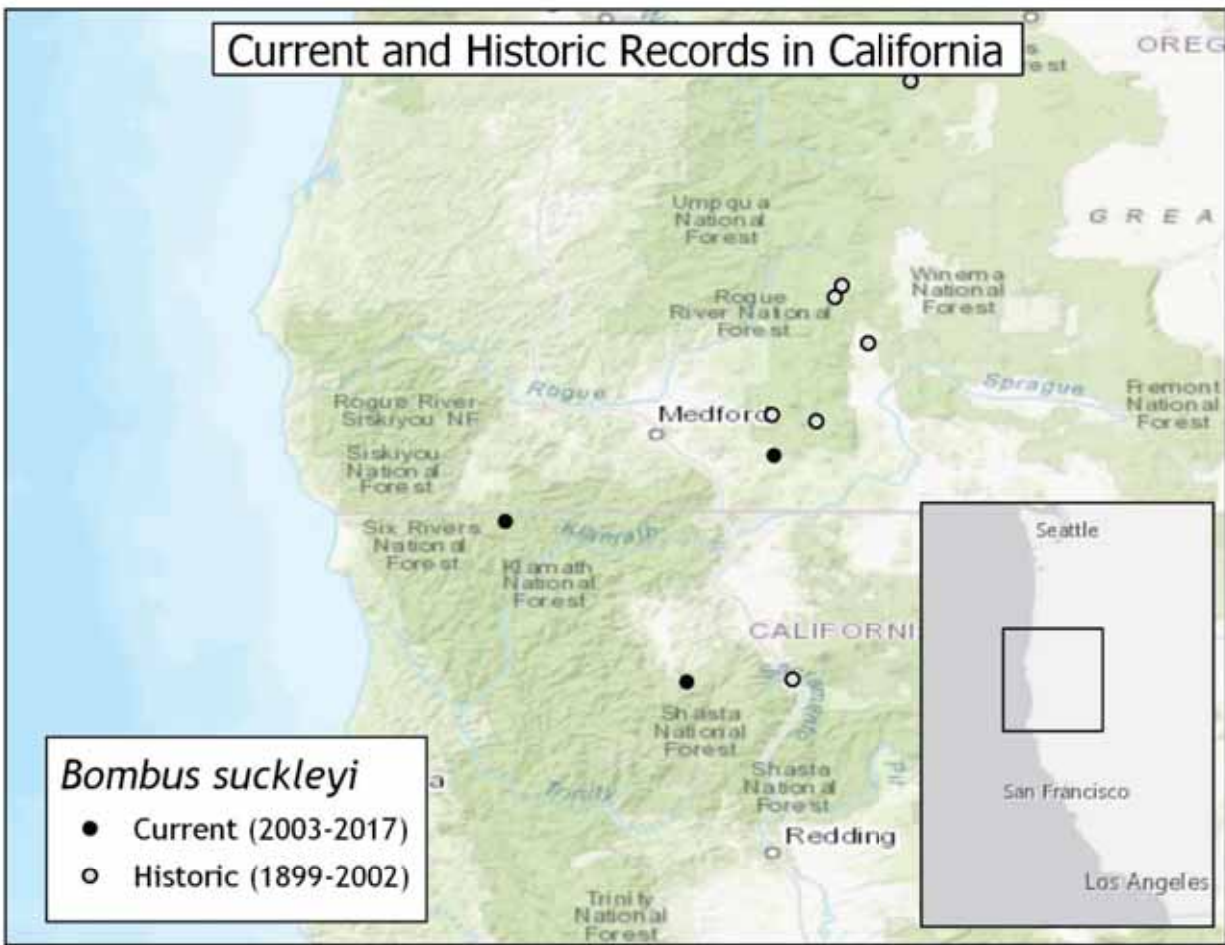
Western bumble bee (*Bombus occidentalis occidentalis*) California Distribution



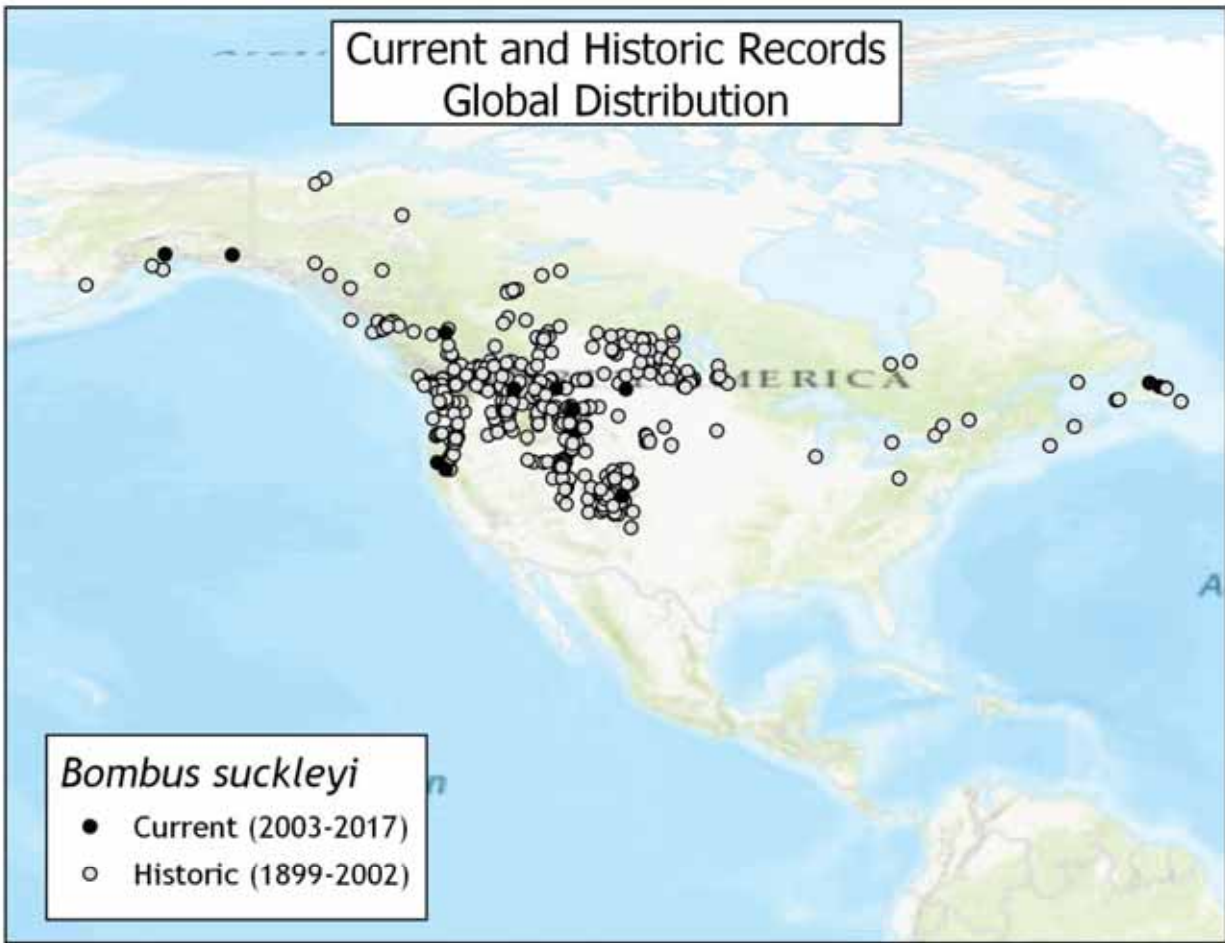
Western bumble bee (*Bombus occidentalis occidentalis*) Global Distribution



Suckley Cuckoo Bumble Bee (*Bombus suckleyi*) California Distribution



Suckley Cuckoo Bumble Bee (*Bombus suckleyi*) Global Distribution



Attachment 5. Conditions of Santa Clara Valley Habitat Plan

Condition 1. Avoid Direct Impacts on Legally Protected Plant and Wildlife Species- Condition 1 requires project proponents to avoid direct impacts on legally protected plant and wildlife species, including federally endangered Contra Costa goldfields and fully protected wildlife species including the golden eagle, bald eagle, American peregrine falcon, southern bald eagle, white-tailed kite, California condor, and ring-tailed cat. Condition 1 also protects bird species and their nests that are protected under the Migratory Bird Treaty Act (MBTA).

The proposed project will comply with this condition. There are no expected impacts to Contra Costa goldfields or other special-status plants. Additionally, the project proponent will include pre-construction survey for nesting birds, including raptors and burrowing owls. Habitat for ring-tailed cats does not exist at the subject site.

Condition 2. Incorporate Urban-Reserve System Interface Design Requirements- Condition 2 provides design requirements for projects that interface urban-reserves.

The proposed project is not at- or in- an urban-reserve interface.

Condition 3. Maintain Hydrologic Conditions and Protect Water Quality- Condition requires projects to comply with NPDES permit requirements and to provide stormwater quality control, and to avoid and minimize effects to local waterways. This includes measures, performance standards, and control measures to minimize increases of peak discharge of stormwater and pollutant discharge to protect water quality, including during project construction.

The proposed project will comply with NPDES, and SWPPP requirements. There are no jurisdictional waters of the United States or State of California within the project boundaries.

Condition 4. Avoidance and Minimization for In-Stream Projects.

The proposed project is not an "in-stream" project.

Condition 5. Avoidance and Minimization Measures for In-Stream Operations and Maintenance-

The proposed project does not include any structures that require any in-stream operation or maintenance.

Condition 6. Design and Construction Requirements for Covered Transportation Projects-

The proposed project is not a Transportation Project.

Condition 7. Rural Development Design and Construction Requirements-

The proposed project is not a rural development.

Condition 8. Implement Avoidance and Minimization Measures for Rural Road Maintenance-

The proposed project is not a rural project.

Condition 9. Prepare and Implement a Recreation Plan- Condition 9 requires providing public access to all reserve lands owned by a public entity.

The proposed project does not abut or adjoin any reserve lands.

Condition 10. Fuel Buffer- Condition 10 provides requirements for fuel buffers between 30 and 100 feet of structures. Requirements include measures relating to fuel buffers near structures and on reserve lands.

The proposed project is an in-fill (urban setting) residential development. It will comply with required setbacks defined by the City of Morgan Hill, but does not abut reserve lands, or vegetated open space.

Condition 11. Stream and Riparian Setbacks- Condition 11 provides requirements for stream and riparian setbacks.

The proposed project does not include riparian or stream corridors; neither on- nor adjacent to the property boundary.

Condition 12. Wetland and Pond Avoidance and Minimization-Condition 12 provides measures to protect wetlands and ponds, including planning actions, design, and construction actions.

The proposed project does not include any proposed impact or modification to wetlands or ponds. There are no jurisdictional waters within the project site boundaries.

Condition 13 (page 6-58). Serpentine and Associated Covered Species Avoidance and Minimization- Condition 13 requires surveys for special status plants and the Bay checkerspot butterfly as well as its larval host plant in appropriate areas that support serpentine bunchgrass grassland, serpentine rock outcrops, serpentine seeps, and serpentine chaparral.

The project site does not include any serpentine soils, nor does it constitute habitat for special-status species that are dependent on serpentine soils.

Condition 14. Valley Oak and Blue Oak Woodland Avoidance and Minimization- Condition 14 provides requirements for project planning and project

construction, including avoidance of large oaks, guidance on irrigation near oak trees, and a buffer around the root protection zone, roads and pathways within 25 feet of the dripline of an oak tree, trenching, and pruning activities.

The project site does not include Valley oak or Blue Oak woodland. The project proponents will work with the City of Morgan Hill and the SCVHP to ensure protective measures are applied to any existing on-site oak trees that are proposed to be preserved.

Condition 15. Western Burrowing Owl- Condition 15 requires preconstruction surveys for burrowing owls in appropriate habitat prior to construction activities, provides avoidance measures for owls and nests in the breeding season and owls in the non-breeding season, and requirements for construction monitoring.

The project will comply with this condition. Western burrowing owls are not known to occur at the project site, however preconstruction surveys for burrowing owls will be included.

Condition 16. Least Bell's Vireo- Condition 16 requires preconstruction surveys in appropriate habitat for the least Bell's vireo prior to construction activities, and provides avoidance and construction monitoring measures.

The project site does not contain habitat suitable for Least Bell's vireo. There is no riparian habitat present. A pre-construction bird survey will be included.

Condition 17. Tricolored Blackbird- Condition 17 requires preconstruction surveys in appropriate habitat for the tricolored blackbird prior to construction activities, and provides avoidance and construction monitoring measures.

Habitat for tricolored blackbird is present on adjacent property, but not on the subject property. A preconstruction survey for this species will be included.

Condition 18 (page 6-71) San Joaquin Kit Fox- Condition 18 requires preconstruction surveys in appropriate habitat for the San Joaquin kit fox prior to construction activities, and provides avoidance and construction monitoring measures.

The project site is an in-fill site in the City of Morgan Hill. The site is not appropriate habitat for San Joaquin kit fox.

Condition 19 (page 6-74). Plant Salvage when Impacts are Unavoidable- Condition 19 provides salvage guidance and requirements for covered plants.

There is no habitat for any covered plants known to exist at the site.

Condition 20 (page 6-76). Avoid and Minimize Impacts to Covered Plant Occurrences- Condition 20 provides requirements for preconstruction surveys for appropriate covered plants (per habitat).

There is no habitat for any covered plants known to exist at the site.



1939



1948



1956



1965



1982



1998



2019



2005

Attachment 7. Swainson's Hawk Survey Protocol

RECOMMENDED TIMING AND METHODOLOGY FOR SWAINSON'S HAWK NESTING SURVEYS IN CALIFORNIA'S CENTRAL VALLEY

**Swainson's Hawk Technical Advisory Committee
May 31, 2000**

This set of survey recommendations was developed by the Swainson's Hawk Technical Advisory Committee (TAC) to maximize the potential for locating nesting Swainson's hawks, and thus reducing the potential for nest failures as a result of project activities/disturbances. The combination of appropriate surveys, risk analysis, and monitoring has been determined to be very effective in reducing the potential for project-induced nest failures. As with most species, when the surveyor is in the right place at the right time, Swainson's hawks may be easy to observe; but some nest sites may be very difficult to locate, and even the most experienced surveyors have missed nests, nesting pairs, mis-identified a hawk in a nest, or believed incorrectly that a nest had failed. There is no substitute for specific Swainson's hawk survey experience and acquiring the correct search image.

METHODOLOGY

Surveys should be conducted in a manner that maximizes the potential to observe the adult Swainson's hawks, as well as the nest/chicks second. To meet the California Department of Fish and Game's (CDFG) recommendations for mitigation and protection of Swainson's hawks, surveys should be conducted for a ½ mile radius around all project activities, and if active nesting is identified within the ½ mile radius, consultation is required. In general, the TAC recommends this approach as well.

Minimum Equipment

Minimum survey equipment includes a high-quality pair of binoculars and a high quality spotting scope. Surveying even the smallest project area will take hours, and poor optics often result in eye-strain and difficulty distinguishing details in vegetation and subject birds. Other equipment includes good maps, GPS units, flagging, and notebooks.

Walking vs Driving

Driving (car or boat) or "windshield surveys" are usually preferred to walking if an adequate roadway is available through or around the project site. While driving, the observer can typically approach much closer to a hawk without causing it to fly. Although it might appear that a flying bird is more visible, they often fly away from the observer using trees as screens; and it is difficult to determine from where a flying bird came. Walking surveys are useful in locating a nest after a nest territory is identified, or when driving is not an option.

Angle and Distance to the Tree

Surveying subject trees from multiple angles will greatly increase the observer's chance of detecting a nest or hawk, especially after trees are fully leafed and when surveying multiple trees

in close proximity. When surveying from an access road, survey in both directions. Maintaining a distance of 50 meters to 200 meters from subject trees is optimal for observing perched and flying hawks without greatly reducing the chance of detecting a nest/young: Once a nesting territory is identified, a closer inspection may be required to locate the nest.

Speed

Travel at a speed that allows for a thorough inspection of a potential nest site. Survey speeds should not exceed 5 miles per hour to the greatest extent possible. If the surveyor must travel faster than 5 miles per hour, stop frequently to scan subject trees.

Visual and Aural Ques

Surveys will be focused on both observations and vocalizations. Observations of nests, perched adults, displaying adults, and chicks during the nesting season are all indicators of nesting Swainson's hawks. In addition, vocalizations are extremely helpful in locating nesting territories. Vocal communication between hawks is frequent during territorial displays; during courtship and mating; through the nesting period as mates notify each other that food is available or that a threat exists; and as older chicks and fledglings beg for food.

Distractions

Minimize distractions while surveying. Although two pairs of eyes may be better than one pair at times, conversation may limit focus. Radios should be off, not only are they distracting, they may cover a hawk's call.

Notes and Species Observed

Take thorough field notes. Detailed notes and maps of the location of observed Swainson's hawk nests are essential for filling gaps in the Natural Diversity Data Base; please report all observed nest sites. Also document the occurrence of nesting great homed owls, red-tailed hawks, red-shouldered hawks and other potentially competitive species. These species will infrequently nest within 100 yards of each other, so the presence of one species will not necessarily exclude another.

TIMING

To meet **the minimum level** of protection for the species, surveys should be completed for **at least** the two survey periods immediately prior to a project's initiation. For example, if a project is scheduled to begin on June 20, you should complete 3 surveys in Period III and 3 surveys in Period V. However, it is always recommended that surveys be completed in Periods II, III and V. **Surveys should not be conducted in Period IV.**

The survey periods are defined by the timing of migration, courtship, and nesting in a "typical" year for the majority of Swainson's hawks from San Joaquin County to Northern Yolo County. Dates should be adjusted in consideration of early and late nesting seasons, and geographic differences (northern nesters tend to nest slightly later, etc). If you are not sure, contact a TAC member or CDFG biologist.

Survey dates Justification and search image	Survey time	Number of Surveys
--	-------------	-------------------

I. <i>January-March 20 (recommended optional)</i>	<i>All day</i>	<i>1</i>
---	----------------	----------

Prior to Swainson's hawks returning, it may be helpful to survey the project site to determine potential nest locations. Most nests are easily observed from relatively long distances, giving the surveyor the opportunity to identify potential nest sites, as well as becoming familiar with the project area. It also gives the surveyor the opportunity to locate and map competing species nest sites such as great horned owls from February on, and red-tailed hawks from March on. After March 1, surveyors are likely to observe Swainson's hawks staging in traditional nest territories.

II. <i>March 20 to April 5</i>	<i>Sunrise to 1000 1600 to sunset</i>	<i>3</i>
--------------------------------	---	----------

Most Central Valley Swainson's hawks return by April 1, and immediately begin occupying their traditional nest territories. For those few that do not return by April 1, there are often hawks ("floaters") that act as place-holders in traditional nest sites; they are birds that do not have mates, but temporarily attach themselves to traditional territories and/or one of the site's "owners." Floaters are usually displaced by the territories' owner(s) if the owner returns.

Most trees are leafless and are relatively transparent; it is easy to observe old nests, staging birds, and competing species. The hawks are usually in their territories during the survey hours, but typically soaring and foraging in the mid-day hours. Swainson's hawks may often be observed involved in territorial and courtship displays, and circling the nest territory. Potential nest sites identified by the observation of staging Swainson's hawks will usually be active territories during that season, although the pair may not successfully nest/reproduce that year.

III. <i>April 5 to April 20</i>	<i>Sunrise to 1200 1630 to Sunset</i>	<i>3</i>
---------------------------------	---	----------

Although trees are much less transparent at this time, 'activity at the nest site increases significantly. Both males and females are actively nest building, visiting their selected site frequently. Territorial and courtship displays are increased, as is copulation. The birds tend to vocalize often, and nest locations are most easily identified. This period may require a great deal of "sit and watch" surveying.

IV. <i>April 21 to June 10</i>	<i>Monitoring known nest sites only Initiating Surveys is not recommended</i>	
--------------------------------	---	--

Nests are extremely difficult to locate this time of year, and even the most experienced surveyor will miss them, especially if the previous surveys have not been done. During this phase of nesting, the female Swainson's hawk is in brood position, very low in the nest, laying eggs, incubating, or protecting the newly hatched and vulnerable chicks; her head may or may not be visible. Nests are often well-hidden, built into heavily vegetated sections of trees or in clumps of mistletoe, making them all but invisible. Trees are usually not viewable from all angles, which may make nest observation impossible.

Following the male to the nest may be the only method to locate it, and the male will spend hours away from the nest foraging, soaring, and will generally avoid drawing attention to the nest site. Even if the observer is fortunate enough to see a male returning with food for the female, if the female determines it is not safe she will not call the male in, and he will not approach the nest; this may happen if the observer, or others, are too close to the nest or if other threats, such as rival hawks, are apparent to the female or male.

V. June 10 to July 30 (post-fledging)



Sunrise to 1200

3

1600 to sunset

Young are active and visible, and relatively safe without parental protection. Both adults make numerous trips to the nest and are often soaring above, or perched near or on the nest tree. The location and construction of the nest may still limit visibility of the nest, young, and adults.

DETERMINING A PROJECT'S POTENTIAL FOR IMPACTING SWAINSON'S HAWKS

LEVEL OF RISK	REPRODUCTIVE SUCCESS (Individuals)	LONGTERM SURVIVABILITY (Population)	NORMAL SITE CHARACTERISTICS (Daily Average)	NEST MONITORING
<p>HIGH</p> 	<p>Direct physical contact with the nest tree while the birds are on eggs or protecting young. (Helicopters in close proximity)</p> <p>Loss of nest tree after nest building is begun prior to laying eggs.</p> <p>Personnel within 50 yards of nest tree (out of vehicles) for extended periods while birds are on eggs or protecting young that are < 10 days old.</p> <p>Initiating construction activities (machinery and personnel) within 200 yards of the nest after eggs are laid and before young are > 10 days old.</p> <p>Heavy machinery only working within 50 yards of nest.</p> <p>Initiating construction activities within 200 yards of nest before nest building begins or after young > 10 days old.</p> <p>All project activities (personnel and machinery) greater than 200 yards from nest.</p>	<p>Loss of available foraging area.</p> <p>Loss of nest trees.</p> <p>Loss of potential nest trees.</p> <p>Cumulative: Multi-year, multi-site projects with substantial noise/personnel disturbance.</p> <p>Cumulative: Single-season projects with substantial noise/personnel disturbance that is greater than or significantly different from the daily norm.</p> <p>Cumulative: Single-season projects with activities that "blend" well with site's "normal" activities.</p>	<p>Little human-created noise, little human use: nest is well away from dwellings, equipment yards, human access areas, etc. <i>Do not include general cultivation practices in evaluation.</i></p> <p>Substantial human-created noise and occurrence: nest is near roadways, well-used waterways, active airstrips, areas that have high human use. <i>Do not include general cultivation practices in evaluation.</i></p>	<p>MORE</p> 
<p>LOW</p>				<p>LESS</p>

Appendix C

Tree Report

HORTICULTURAL *Associates*

Consultants in Horticulture and Arboriculture

TREE PRESERVATION AND MITIGATION REPORT

Morgan Hill 7 Subdivision
18110 Monterey Street
Morgan Hill, CA

Prepared For:

City Ventures
444 Spear Street, Suite 200
San Francisco, CA 94105

Prepared by:

John C. Meserve
Consulting Arborist and Horticulturist
ISA Certified Arborist, WE #0478A
ISA Qualified Tree Risk Assessor

November 15, 2019

November 15, 2019

Samantha Hauser
Director of Development
City Ventures
444 Spear Street, Suite 200
San Francisco, CA 94105

Re: Revised *Tree Preservation and Mitigation Report*, 18110 Monterey Street, Morgan Hill,
California

Samantha,

Attached you will find our revised *Tree Preservation and Mitigation Report* for the above noted site in Morgan Hill. A total of 60 trees were evaluated, and this includes all trees that are present over 4 inches in trunk diameter per the Morgan Hill Tree Ordinance. Each tree is identified in the field with a numbered aluminum tag placed on the trunk at approximately eye level.

Several modifications to our report were made to address comments provided in the peer review done by Live Oak Associates and dated October 31, 2019.

All trees in this report were evaluated and documented for species, trunk diameter, health, and structural condition. We have also the level of development impact that can be expected, and a recommendation for removal, or preservation, and mitigation. The *Tree Location Plan* shows the location and numbering sequence of all evaluated trees. We have also included *Pruning Standards* and *Tree Protection Guidelines*.

This report is intended to be a basic inventory of trees present at this site, which includes a general review of tree health and structural condition. No in-depth evaluation has occurred, and assessment has included only external visual examination without probing, drilling, coring, root collar examination, root excavation, or dissecting any tree part. Failures, deficiencies, and problems may occur in these trees in the future, and this inventory in no way guarantees or provides a warranty for their condition. The site was not staked, and the boundaries were assumed based on topographical and other features and may not be completely accurate.

No other trees are included in this report. If other trees need to be included it is the responsibility of the client to provide that direction.

EXISTING SITE CONDITION SUMMARY

The project site consists of an empty field, bordered on one side by a City street, one side by a railroad track, and one side a residential property.

EXISTING TREE SUMMARY

Native species present included Coast Live Oak, Valley Oak, Black Walnut, and Elderberry.

Non-native species present included Black Locust, Olive, Ash, English Walnut, Silk Tree, Cherry Plum, Brazilian Pepper, and Red Oak.

Some trees were located on immediately adjacent properties, and overhanging the project property, and these were included as well.


CONSTRUCTION IMPACT SUMMARY

Based on the current development plan that was forwarded to our office the following summary of impacts and recommendations is provided:

- (18) Recommended for preservation
- (19) Recommended for removal due to development
- (14) Recommended for removal due to existing poor condition
- (9) Trees to be preserved and located off site

Please feel free to contact me if you have questions regarding this report, or if further discussion would be helpful.

Regards,


John C. Meserve
ISA Certified Arborist, WE #0478A
ISA Qualified Tree Risk Assessor/TRAQ
ASCA Tree and Plant Appraisal Qualified/TPAQ



TREE INVENTORY CHART

TREE INVENTORY

(Revised)

18110 Monterey Street
Morgan Hill, CA

Tree #	Species	Common Name	Trunk (dbh ± inches)	Height (± feet)	Radius (± feet)	Health 1 - 5	Structure 1 - 4	Development Impact	Recommendations
1	<i>Quercus rubra</i>	Red Oak	19	38	18	3	3	2	1, 6, 7, 8, 9, 10
2	<i>Quercus agrifolia</i>	Coast Live Oak	8+6	20	12	3	3	2	1, 6, 7, 8, 9, 10
3	<i>Quercus agrifolia</i>	Coast Live Oak	20	45	25	3	3	2	1, 6, 7, 8, 9, 10
4	<i>Quercus agrifolia</i>	Coast Live Oak	5.5	20	12	3	3	1	1, 6, 7, 8, 9, 10, 11
5	<i>Quercus rubra</i>	Red Oak	34	60	32	3	2	1	1, 6, 7, 8, 9, 10, 11
6	<i>Quercus rubra</i>	Red Oak	36.5	60	32	3	1	1	1, 6, 7, 8, 9, 10, 11
7	<i>Quercus rubra</i>	Red Oak	16	25	16	2	2	1	1, 6, 7, 8, 9, 10, 11
8	<i>Quercus rubra</i>	Red Oak	33+12+15	50	36	3	1	1	1, 6, 7, 8, 9, 10, 11
9	<i>Quercus agrifolia</i>	Coast Live Oak	22	40	22	3	3	1	1, 6, 7, 8, 9, 10, 11
10	<i>Quercus rubra</i>	Red Oak	15+9	20	14	1	1	1	3
11	<i>Quercus rubra</i>	Red Oak	24+15+13+12	35	24	2	1	1	1, 6, 7, 8, 9, 10, 11
12	<i>Quercus rubra</i>	Red Oak	23+15	30	22	2	1	1	1, 6, 7, 8, 9, 10, 11
13	<i>Quercus lobata</i>	Valley Oak	5+4+5+6	15	12	1	2	1	3
14	<i>Quercus agrifolia</i>	Coast Live Oak	5+multi	14	12	4	3	1	1, 6, 7, 8, 9, 10
15	<i>Quercus agrifolia</i>	Coast Live Oak	9	20	12	3	3	2	1, 6, 7, 8, 9, 10

TREE INVENTORY
(Revised)
18110 Monterey Street
Morgan Hill, CA

Tree #	Species	Common Name	Trunk (dbh ± inches)	Height (± feet)	Radius (± feet)	Health 1 - 5	Structure 1 - 4	Development Impact	Recommendations
16	<i>Quercus agrifolia</i>	Coast Live Oak	6+6.5+7+7+4	30	14	3	3	2	1, 6, 7, 8, 9, 10
17	<i>Quercus agrifolia</i>	Coast Live Oak	8	25	11	3	3	2	1, 6, 7, 8, 9, 10
18	<i>Quercus agrifolia</i>	Coast Live Oak	27	45	28	3	3	2	1, 6, 7, 8, 9, 10
19	<i>Quercus agrifolia</i>	Coast Live Oak	9.5	28	20	3	3	2	1, 6, 7, 8, 9, 10
20	<i>Robinia pseudacacia</i>	Black Locust	12+10+16+15	40	20	3	2	2	3
21	<i>Quercus agrifolia</i>	Coast Live Oak	5.5	25	8	3	3	2	1, 6, 7, 8, 9, 10
22	<i>Robinia pseudacacia</i>	Black Locust	10.5+6.5+9.5+8	35	22	3	2	2	3
23	<i>Quercus agrifolia</i>	Coast Live Oak	23.5	60	28	3	3	2	1, 6, 7, 8, 9, 10
24	<i>Robinia pseudacacia</i>	Black Locust	13+13+10	25	14	3	2	2	3
25	<i>Quercus agrifolia</i>	Coast Live Oak	9+7.5	30	16	4	3	2	1, 6, 7, 8, 9, 10
26	<i>Quercus agrifolia</i>	Coast Live Oak	6+4+5	25	15	4	3	2	1, 6, 7, 8, 9, 10
27	<i>Quercus agrifolia</i>	Coast Live Oak	5.5+9	28	16	4	3	2	1, 6, 7, 8, 9, 10
28	<i>Quercus agrifolia</i>	Coast Live Oak	9+8+9+8	30	22	3	3	2	1, 6, 7, 8, 9, 10
29	<i>Quercus agrifolia</i>	Coast Live Oak	13	34	26	3	3	2	1, 6, 7, 8, 9, 10
30	<i>Quercus agrifolia</i>	Coast Live Oak	15.5+15	45	26	4	3	2	1, 6, 7, 8, 9, 10

TREE INVENTORY

(Revised)

18110 Monterey Street

Morgan Hill, CA

Tree #	Species	Common Name	Trunk (dbh ± inches)	Height (± feet)	Radius (± feet)	Health 1 - 5	Structure 1 - 4	Development Impact	Recommendations
31	<i>Quercus agrifolia</i>	Coast Live Oak	35	50	35	3	3	2	1, 6, 7, 8, 9, 10
32	<i>Albizia julibrissin</i>	Silk Tree	17+21	35	20	1	1	3	3
33	<i>Juglans regia</i>	English walnut	16.5	28	16	1	1	3	2, 3
34	<i>Quercus agrifolia</i>	Coast Live Oak	8.5	12	15	3	3	3	2
35	<i>Quercus agrifolia</i>	Coast Live Oak	22	40	22	3	3	3	2
36	<i>Quercus agrifolia</i>	Coast Live Oak	14	30	16	3	3	3	2
37	<i>Quercus agrifolia</i>	Coast Live Oak	7	25	12	3	3	3	2
38	<i>Quercus agrifolia</i>	Coast Live Oak	8	25	12	3	3	3	2
39	<i>Sambucus sp.</i>	Elderberry	5+5.5+9	18	14	4	3	3	2
40	<i>Olea europaea</i>	Olive	14.5+mult	30	18	4	3	3	2
41	<i>Quercus agrifolia</i>	Coast Live Oak	8.5+6	15	12	4	3	3	2
42	<i>Quercus agrifolia</i>	Coast Live Oak	11+15	40	20	4	3	3	2
43	<i>Quercus agrifolia</i>	Coast Live Oak	17+30.5	38	20	4	3	3	2
44	<i>Quercus agrifolia</i>	Coast Live Oak	4	6	14	3	3	3	2
45	<i>Quercus agrifolia</i>	Coast Live Oak	13+23+11.5	50	24	4	3	3	2

TREE INVENTORY

(Revised)

18110 Monterey Street

Morgan Hill, CA

Tree #	Species	Common Name	Trunk (dbh ± inches)	Height (± feet)	Radius (± feet)	Health 1 - 5	Structure 1 - 4	Development Impact	Recommendations
46	<i>Quercus agrifolia</i>	Coast Live Oak	10.5+5.5+8	30	14	4	3	3	2
47	<i>Schinus terebinthifolius</i>	Brazilian Pepper	8.5	15	14	2	2	3	3
48	<i>Quercus agrifolia</i>	Coast Live oak	11.5+7.5	30	18	4	3	3	2
49	<i>Prunus cerisifera</i>	Wild Plum	8+multi	12	12	1	1	3	3
50	<i>Quercus agrifolia</i>	Coast Live Oak	7+multi	15	11	4	3	3	2
51	<i>Robinia pseudacacia</i>	Black Locust	9.5+multi	35	20	3	2	3	3
52	<i>Robinia pseudacacia</i>	Black Locust	8+multi	30	18	2	2	3	3
53	<i>Robinia pseudacacia</i>	Black Locust	8+multi	25	16	1	1	3	3
54	<i>Quercus agrifolia</i>	Coast Live Oak	20+14+23+22+19.5	45	35	3	2	3	2
55	<i>Quercus agrifolia</i>	Coast Live Oak	12-8	20	28	3	3	3	2
56	<i>Albizia julibrissin</i>	Silk Tree	8+7-6.5	15	10	3	2	3	3
57	<i>Juglans hindsii</i>	Black Walnut	6	12	8	1	1	3	3
58	<i>Juglans hindsii</i>	Black Walnut	50	40	25	4	3	3	2
59	<i>Quercus agrifolia</i>	Coast Live Oak	42	30	15	3	2	1	1, 6, 7, 8, 9, 10, 11
60	<i>Quercus agrifolia</i>	Coast Live Oak	6.5	20	10	4	3	3	2

TREE LOCATION PLAN

GREEN NUMBER = PRESERVE
RED NUMBER = REMOVE

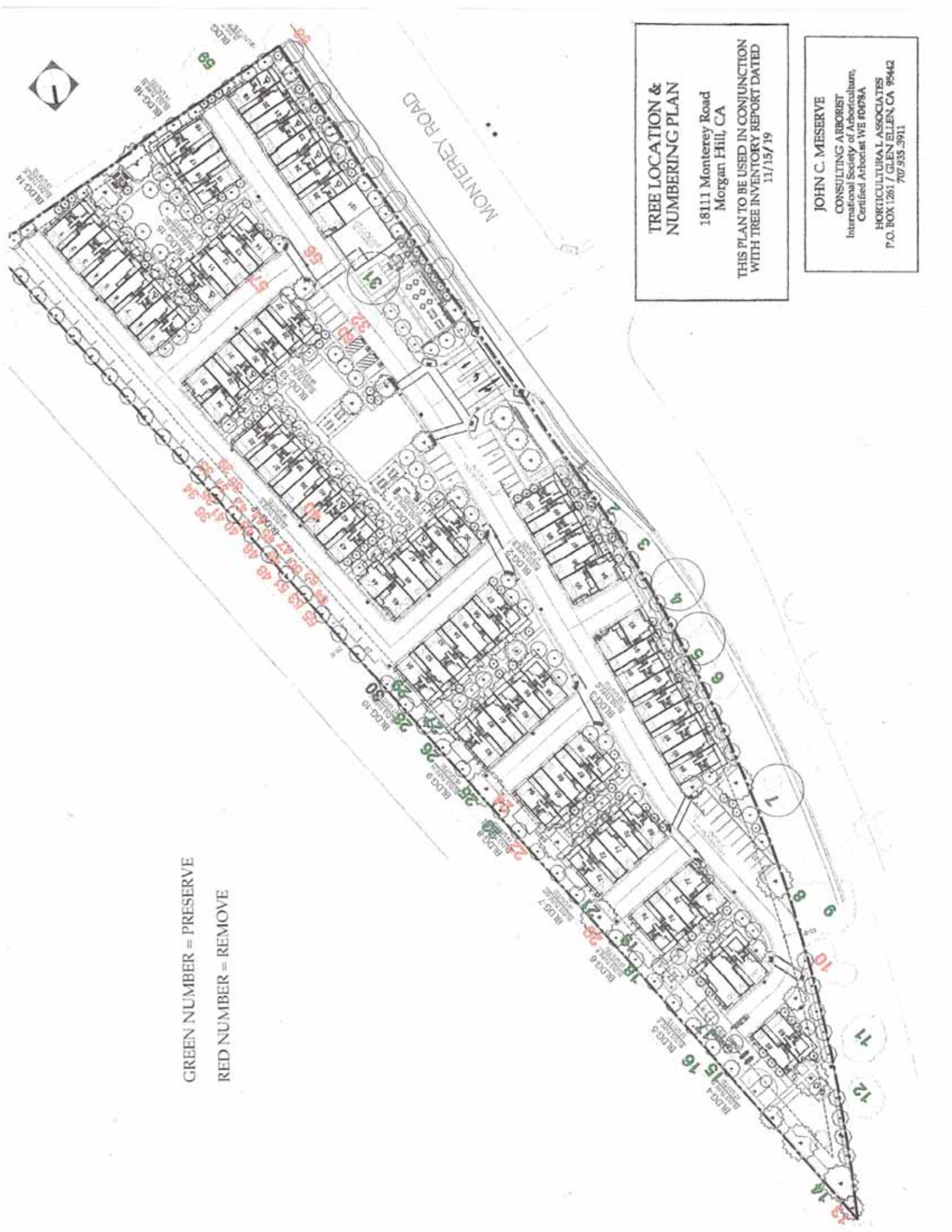
TREE LOCATION & NUMBERING PLAN

18111 Monterey Road
Morgan Hill, CA

THIS PLAN TO BE USED IN CONJUNCTION
WITH TREE INVENTORY REPORT DATED
11/15/19

JOHN C. MESERVE

CONSULTING ARBORIST
International Society of Arboriculture,
Certified Arborist WE #0478A
HORTICULTURAL ASSOCIATES
P.O. BOX 1261 / GLEN ELLEN, CA 95042
707.935.3911



KEY TO TREE
INVENTORY CHART

KEY TO TREE INVENTORY CHART

18111 Monterey Road
Morgan Hill, California

Tree Number

Each tree has been identified in the field with an aluminum tag and reference number. Tags are attached to the trunk at approximately eye level and the *Tree Location Plan* illustrates the location of each numbered tree.

Species

Each tree has been identified by genus, species and common name. Many species have more than one common name.

Trunk

Each trunk has been measured, to the nearest one-half inch, to document its diameter at 24" above adjacent grade. Trunk diameter is a good indicator of age, and is commonly used to determine mitigation replacement requirements.

Height

Height is estimated in feet, using visual assessment.

Radius

Radius is estimated in feet, using visual assessment. Since many canopies are asymmetrical, it is not uncommon for a radius estimate to be an average of the canopy size.

Health

The following descriptions are used to rate the health of a tree. Trees with a rating of 4 or 5 are very good candidates for preservation and will tolerate more construction impacts than trees in poorer condition. Trees with a rating of 3 may or may not be good candidates for preservation, depending on the species and expected construction impacts. Trees with a rating of 1 or 2 are generally poor candidates for preservation.

- (5) Excellent - health and vigor are exceptional, no pest, disease, or distress symptoms.
- (4) Good - health and vigor are average, no significant or specific distress symptoms, no significant pest or disease.
- (3) Fair - health and vigor are somewhat compromised, distress is visible, pest or disease may be present and affecting health, problems are generally correctable.
- (2) Marginal - health and vigor are significantly compromised, distress is highly visible and present to the degree that survivability is in question.
- (1) Poor - decline has progressed beyond the point of being able to return to a healthy condition again. Long-term survival is not expected. This designation includes dead trees.

Structure

The following descriptions are used to rate the structural integrity of a tree. Trees with a rating of 3 or 4 are generally stable, sound trees which do not require significant pruning, although cleaning, thinning, or raising the canopy might be desirable. Trees with a rating of 2 are generally poor candidates for preservation unless they are preserved well away from improvements or active use areas. Significant time and effort would be required to reconstruct the canopy and improve structural integrity. Trees with a rating of 1 are hazardous and should be removed.

- (4) Good structure - minor structural problems may be present which do not require corrective action.
- (3) Moderate structure - normal, typical structural issues which can be corrected with pruning.
- (2) Marginal structure - serious structural problems are present which may or may not be correctable with pruning, cabling, bracing, etc.
- (1) Poor structure - hazardous structural condition which cannot be effectively corrected with pruning or other measures, may require removal depending on location and the presence of targets.

Expected Impacts

Considering the proximity of construction activities, type of activities, tree species, and tree condition - the following ratings are used to estimate the amount of impact on tree health and stability. Most trees will tolerate a (1) rating, many trees could tolerate a (2) rating with careful consideration and mitigation, but trees with a (3) rating are poor candidates for preservation due to their very close proximity to construction or because they are located within the footprint of construction and cannot be preserved.

- (3) A significant impact on long term tree integrity can be expected as a result of proposed development.
- (2) A moderate impact on long term tree integrity can be expected as a result of proposed development.
- (1) A minor impact on long term tree integrity can be expected as a result of proposed development.
- (0) No impact is expected

Recommendations

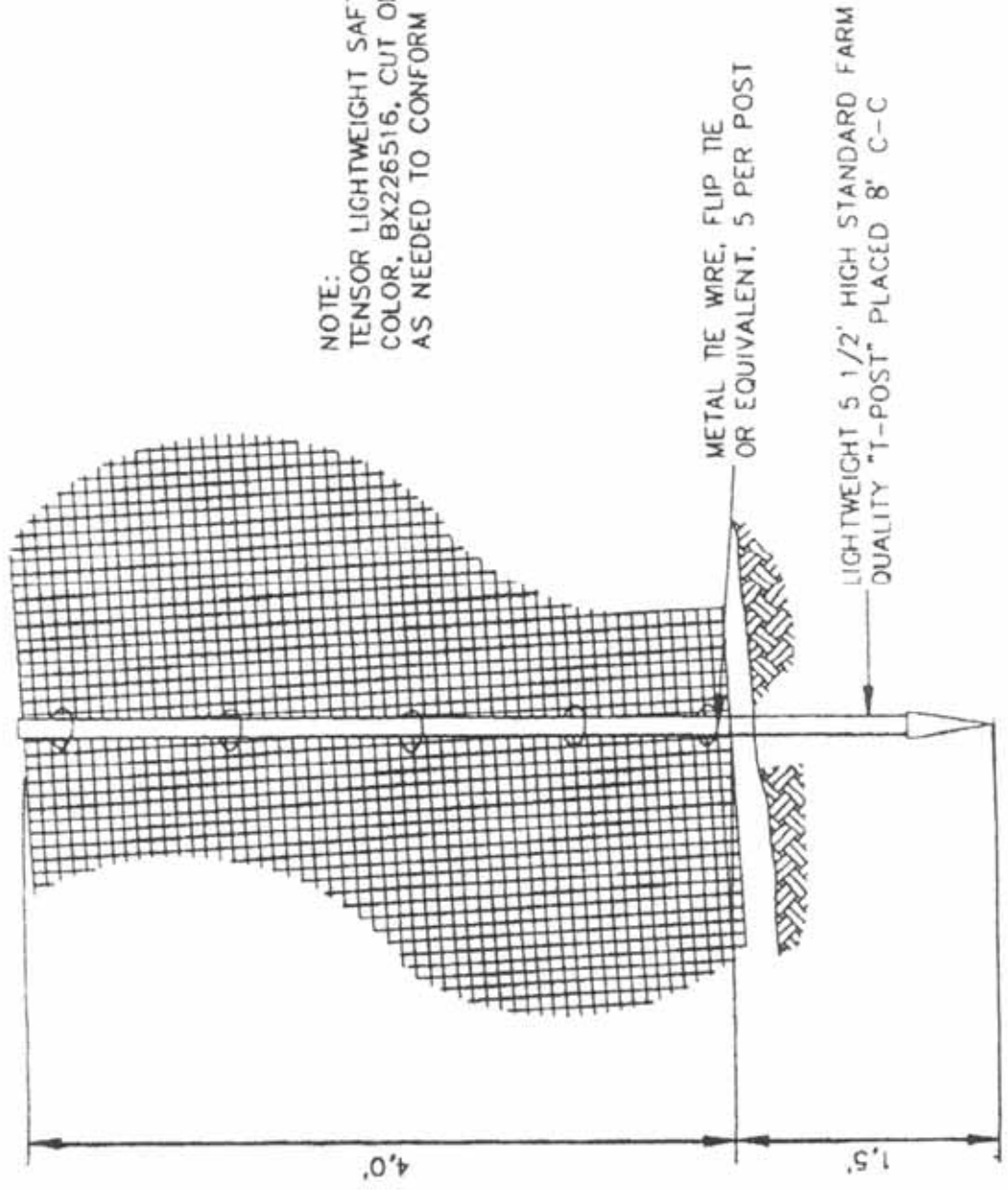
Recommendations are provided for removal or preservation. For those being preserved, protection measures and mitigation procedures to offset impacts and improve tree health are provided.

- (1) Preservation appears to be possible.
- (2) Removal is required due to significant development impacts.
- (3) Removal is recommended due to poor health or hazardous structure.

- (4) Removal is required due to significant development impacts and poor existing condition.
- (5) Removal is recommended due to poor species characteristics.
- (6) Install temporary protective fencing at the edge of the dripline, or edge of approved construction, prior to beginning grading or construction. Maintain fencing in place for duration of all construction activity in the area.
- (7) Maintain existing grade within the fenced portion of the dripline. Route drainage swales and all underground work outside the dripline.
- (8) Place a 4" layer of chipped bark mulch over the soil surface within the fenced dripline prior to installing temporary fencing. Maintain this layer of mulch throughout construction.
- (9) Prune to clean, raise, or provide necessary clearance. Prune to reduce branches that are over-loaded, over-extended, largely horizontal, arching, or have foliage concentrated near the branch ends, per International Society of Arboriculture Pruning Standards.

Pruning to occur by, or under the supervision of, an Arborist certified by the International Society of Arboriculture. Pruning Standards are attached to this report.
- (10) Grading and underground construction may have an impact on this tree. Review again after construction documents are available.
- (11) This tree is located on the adjacent property near the property line.

TREE FENCING DETAIL



NOTE:
TENSOR LIGHTWEIGHT SAFTY GRID, ORANGE
COLOR, BX226516, CUT OR FOLD AT POSTS
AS NEEDED TO CONFORM TO SLOPING TERRAIN.

TREE PRUNING STANDARDS

PRUNING STANDARDS

Purpose:

Trees and other woody plants respond in specific and predictable ways to pruning and other maintenance practices. Careful study of these responses has led to pruning practices which best preserve and enhance the beauty, structural integrity, and functional value of trees.

In an effort to promote practices which encourage the preservation of tree structure and health, the W.C. ISA Certification Committee has established the following Standards of Pruning for Certified Arborists. The Standards are presented as working guidelines, recognizing that trees are individually unique in form and structure, and that their pruning needs may not always fit strict rules. The Certified Arborist must take responsibility for special pruning practices that vary greatly from these Standards.

I. Pruning Techniques

- A. A thinning cut removes a branch at its point of attachment or shortens it to a lateral large enough to assume the terminal role. Thinning opens up a tree, reduces weight on heavy limbs, can reduce a tree's height, distributes ensuing invigoration throughout a tree and helps retain the tree's natural shape. Thinning cuts are therefore preferred in tree pruning.

When shortening a branch or leader, the lateral to which it is cut should be at least one-half the diameter of the cut being made. Removal of a branch or leader back to a sufficiently large lateral is often called "drop crotching."

- B. A heading cut removes a branch to a stub, a bud or a lateral branch not large enough to assume the terminal role. Heading cuts should seldom be used because vigorous, weakly attached upright sprouts are forced just below such cuts, and the tree's natural form is altered. In some situations, branch stubs die or produce only weak sprouts.

- C. When removing a live branch, pruning cuts should be made in branch tissue just outside the branch bark ridge and collar, which are trunk tissue. *(Figure 1)* If no collar is visible, the angle of the cut should approximate the angle formed by the branch bark ridge and the trunk. *(Figure 2)*
- D. When removing a dead branch, the final cut should be made outside the collar of live callus tissue. If the collar has grown out along the branch stub, only the dead stub should be removed, the live collar should remain intact, and uninjured. *(Figure 3)*
- E. When reducing the length of a branch or the height of a leader, the final cut should be made just beyond (without violating) the branch bark ridge of the branch being cut to. The cut should approximately bisect the angle formed by the branch bark ridge and an imaginary line perpendicular to the trunk or branch cut. *(Figure 4)*
- F. A goal of structural pruning is to maintain the size of lateral branches to less than three-fourths the diameter of the parent branch or trunk. If the branch is codominant or close to the size of the parent branch, thin the branch's foliage by 15% to 25%, particularly near the terminal. Thin the parent branch less, if at all. This will allow the parent branch to grow at a faster rate, will reduce the weight of the lateral branch, slow its total growth, and develop a stronger branch attachment. If this does not appear appropriate, the branch should be completely removed or shortened to a large lateral. *(Figure 5)*
- G. On large-growing trees, except whorl-branching conifers, branches that are more than one-third the diameter of the trunk should be spaced along the trunk at least 18 inches apart, on center. If this is not possible because of the present size of the tree, such branches should have their foliage thinned 15% to 25%, particularly near their terminals. *(Figure 6)*
- H. Pruning cuts should be clean and smooth with the bark at the edge of the cut firmly attached to the wood.
- I. Large or heavy branches that cannot be thrown clear, should be lowered on ropes to prevent injury to the tree or other property.
- J. Wound dressings and tree paints have not been shown to be effective in preventing or reducing decay. They are therefore not recommended for routine use when pruning.

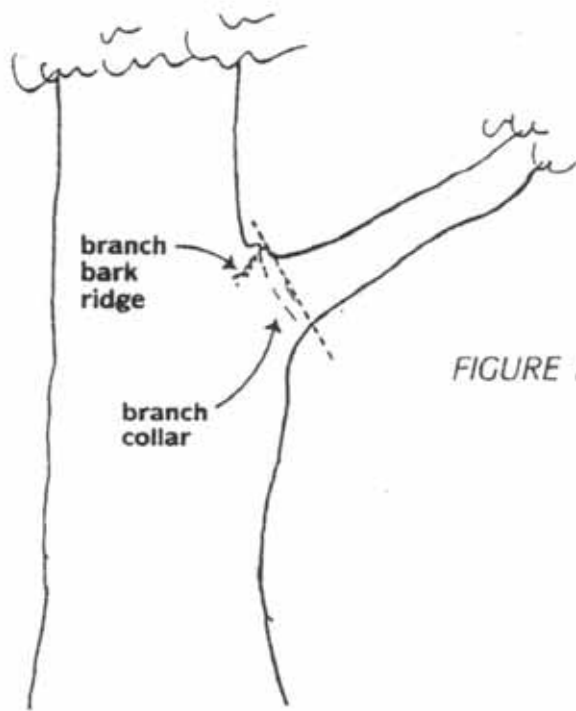


FIGURE 1. When removing a branch, the final cut should be just outside the branch bark ridge and collar.

FIGURE 2. In removing a limb without a branch collar, the angle of the final cut to the branch bark ridge should approximate the angle the branch bark ridge forms with the limb. Angle AB should equal Angle BC.

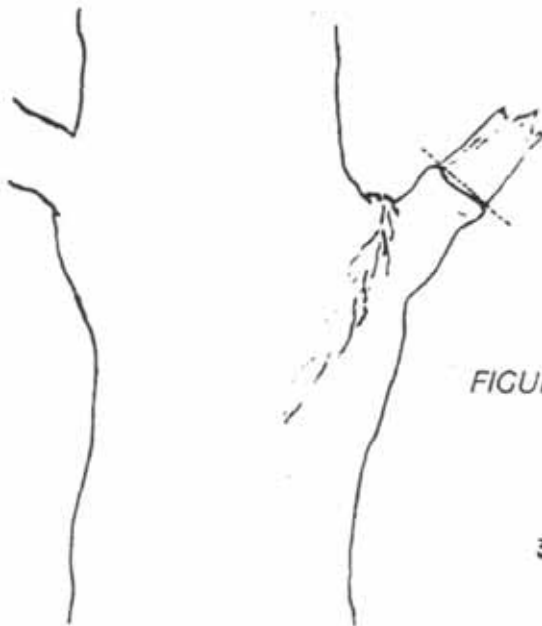
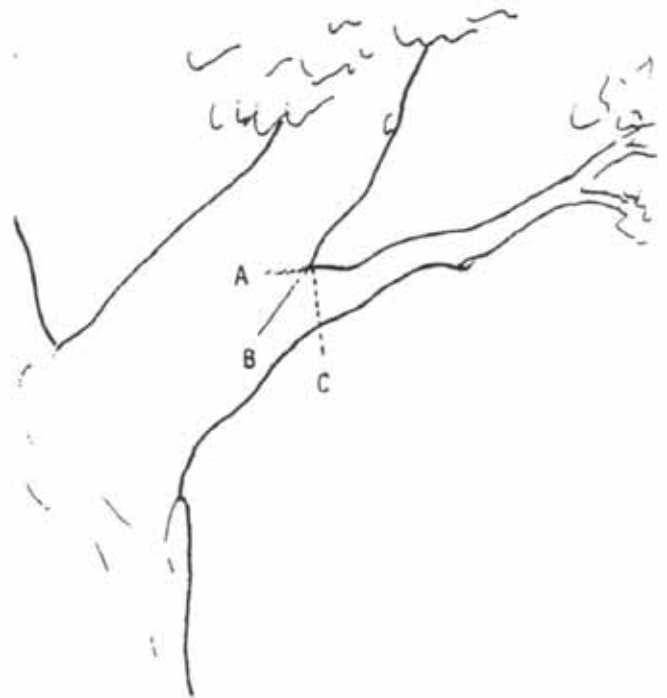


FIGURE 3. When removing a dead branch, cut outside the callus tissue that has begun to form around the branch.

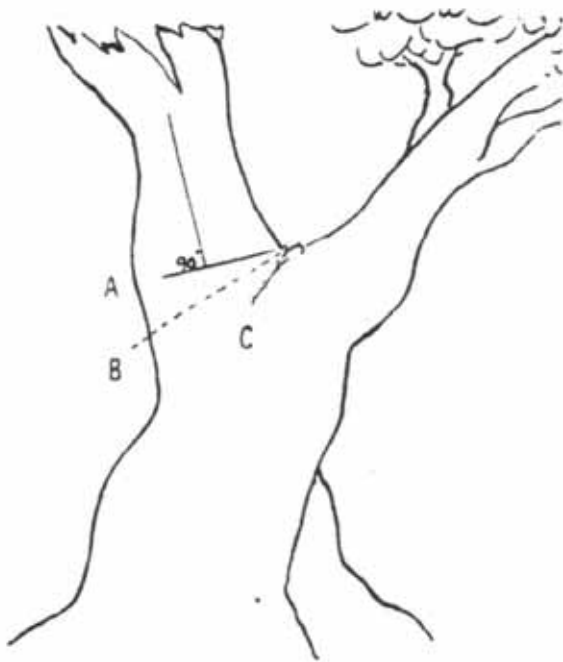
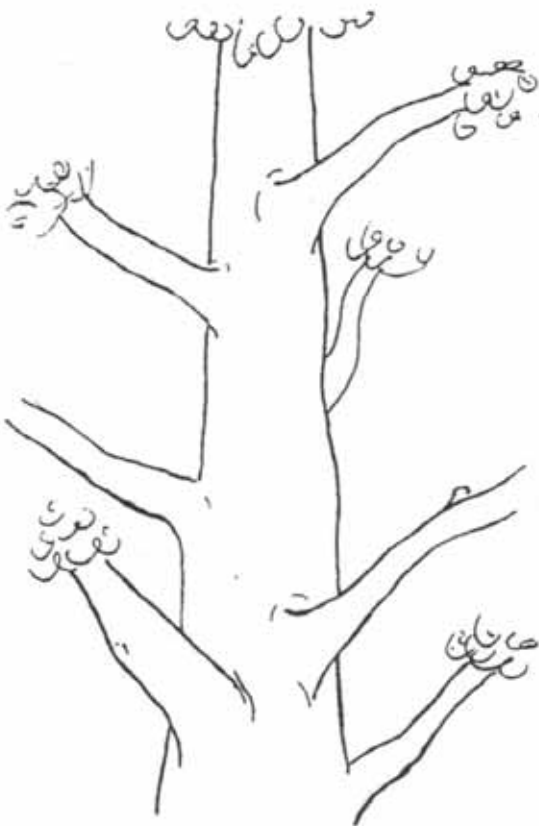


FIGURE 4. In removing the end of a limb to a large lateral branch, the final cut is made along a line that bisects the angle between the branch bark ridge and a line perpendicular to the limb being removed. Angle AB is equal to Angle BC.

FIGURE 5. A tree with limbs tending to be equal-sized, or codominant. Limbs marked B are greater than $\frac{3}{4}$ the size of the parent limb A. Thin the foliage of branch B more than branch A to slow its growth and develop a stronger branch attachment.



FIGURE 6. Major branches should be well spaced both along and around the stem.



II. Types of Pruning — Mature Trees

A. CROWN CLEANING

Crown cleaning or cleaning out is the removal of dead, dying, diseased, crowded, weakly attached, and low-vigor branches and watersprouts from a tree crown.

B. CROWN THINNING

Crown thinning includes crown cleaning and the selective removal of branches to increase light penetration and air movement into the crown. Increased light and air stimulates and maintains interior foliage, which in turn improves branch taper and strength. Thinning reduces the wind-sail effect of the crown and the weight of heavy limbs. Thinning the crown can emphasize the structural beauty of trunk and branches as well as improve the growth of plants beneath the tree by increasing light penetration. When thinning the crown of mature trees, seldom should more than one-third of the live foliage be removed.

At least one-half of the foliage should be on branches that arise in the lower two-thirds of the trees. Likewise, when thinning laterals from a limb, an effort should be made to retain inner lateral branches and leave the same distribution of foliage along the branch. Trees and branches so pruned will have stress more evenly distributed throughout the tree or along a branch.

An effect known as "lion's-tailing" results from pruning out the inside lateral branches. Lion's-tailing, by removing all the inner foliage, displaces the weight to the ends of the branches and may result in sunburned branches, watersprouts, weakened branch structure and limb breakage.

C. CROWN REDUCTION

Crown reduction is used to reduce the height and/or spread of a tree. Thinning cuts are most effective in maintaining the structural integrity and natural form of a tree and in delaying the time when it will need to be pruned again. The lateral to which a branch or trunk is cut should be at least one-half the diameter of the cut being made.

D. CROWN RESTORATION

Crown restoration can improve the structure and appearance of trees that have been topped or severely pruned using heading cuts. One to three sprouts on main branch stubs should be selected to reform a more natural appearing crown. Selected vigorous sprouts may need to be thinned to a lateral, or even headed, to control length growth in order to ensure adequate attachment for the size of the sprout. Restoration may require several prunings over a number of years.

II. Types of Pruning — Mature Trees (*continued*)

E. CROWN RAISING

Crown raising removes the lower branches of a tree in order to provide clearance for buildings, vehicles, pedestrians, and vistas. It is important that a tree have at least one-half of its foliage on branches that originate in the lower two-thirds of its crown to ensure a well-formed, tapered structure and to uniformly distribute stress within a tree.

When pruning for view, it is preferable to develop “windows” through the foliage of the tree, rather than to severely raise or reduce the crown.

III. Size of Pruning Cuts

Each of the Pruning Techniques (Section I) and Types of Pruning (Section II) can be done to different levels of detail or refinement. The removal of many small branches rather than a few large branches will require more time, but will produce a less-pruned appearance, will force fewer watersprouts and will help to maintain the vitality and structure of the tree. Designating the maximum size (base diameter) that any occasional undesirable branch may be left within the tree crown, such as $\frac{1}{2}$ ”, 1” or 2” branch diameter, will establish the degree of pruning desired.

IV. Climbing Techniques

- A. Climbing and pruning practices should not injure the tree except for the pruning cuts.
- B. Climbing spurs or gaffs should not be used when pruning a tree, unless the branches are more than throw-line distance apart. In such cases, the spurs should be removed once the climber is tied in.
- C. Spurs may be used to reach an injured climber and when removing a tree.
- D. Rope injury to thin barked trees from loading out heavy limbs should be avoided by installing a block in the tree to carry the load. This technique may also be used to reduce injury to a crotch from the climber’s line.

TREE PROTECTION GUIDELINES

GENERAL TREE PROTECTION GUIDELINES FOR CONSTRUCTION AROUND PRESERVED TREES

INTRODUCTION

Great care must be exercised when development is proposed in the vicinity of established trees of any type. The trees present at construction sites require specialized protection techniques during all construction activities to minimize negative impact on their long term health and vigor. The area immediately beneath and around canopy driplines is especially critical, and the requirements and procedures that follow are established to protect short and long term tree integrity. The purpose of this protection guideline is therefore to define the procedures that must be followed during any and all phases of development in the immediate vicinity of designated and protected trees.

Established, mature trees respond in a number of different ways to the disruption of their natural conditions. Change of grade within the root system area or near the root collar, damage to the bark of the trunk, soil compaction above the root system, root system reduction or damage, or alteration of summer soil moisture levels may individually or collectively cause physiological stress leading to tree decline and death. The individual impacts of these activities may cause trees to immediately exhibit symptoms and begin to decline, but more commonly the decline process takes many years, with symptoms appearing slowly and over a period of time. Trees may not begin to show obvious signs of decline from the negative impacts of construction until many years after construction is completed. It is not appropriate to wait for symptoms to appear, as this may be too late to correct the conditions at fault and to halt decline.

It is therefore critical to the long-term health of all protected trees that a defined protection program be established before beginning any construction activity where protected trees are found. Once incorporated at the design level, it is mandatory that developers, contractors, and construction personnel understand the critical importance of these guidelines, and the potential penalties that will be levied if they are not fully incorporated at every stage of development.

The following guidelines are meant to be utilized by project managers and those supervising any construction in the vicinity of protected trees including grading contractors, underground contractors, all equipment operators, construction personnel, and landscape contractors. These protection guidelines are presented in a brief outline form to be applied to each individual activity that occurs during development activities. It is left to project managers to implement these protection measures. Questions which arise, or interpretation of guidelines as

they apply to specific site activities, must be referred to the designated project arborist as they occur.

TREE PROTECTION ZONE

1. The canopy dripline is illustrated on the Improvement Plans and represents the area around each tree, or group of trees, which must be protected at all times with tree protection fencing. No encroachment into the dripline is allowed at any time without approval from the project arborist, and unauthorized entry may be subject to civil action and penalties.
2. The dripline will be designated by the project arborist at a location determined to be adequate to ensure long term tree viability and health.

TREE PROTECTION FENCING

1. Prior to initiating any construction activity on a construction project, including demolition or grading, temporary protective fencing shall be installed at each site tree. Fencing shall be located at the dripline designated by the project arborist or illustrated on the Improvement Plans.
2. Fencing shall be minimum 4' height at all locations, and shall form a continuous barrier without entry points around all individual trees, or groups of trees. Barrier type fencing such as *Tensar* plastic fencing is recommended, but any fencing system that adequately prevents entry will be considered for approval by the project arborist. The use of post and cable fencing is not acceptable.
3. Fencing shall be installed in a professional manner with steel fence posts (standard quality farm "T" posts work well) placed no more than 8 feet on center. Fencing shall be attached to each post at 5 locations with plastic electrical ties, metal tie wire, or flip tie. See fencing detail.
4. Fencing shall serve as a barrier to prevent encroachment of any type by construction activities, equipment, materials storage, or personnel.
5. All encroachment into the fenced dripline must be approved in writing and supervised by the project arborist. Approved dripline encroachment may require additional mitigation or protection measures that will be determined by the project arborist at the time of the request.
6. Contractors and subcontractors shall direct all equipment and personnel to remain outside the fenced area at all times until project is complete, and shall

instruct personnel and sub-contractors as to the purpose and importance of fencing and preservation.

7. Fencing shall be upright and functional at all times from start to completion of project. Fencing shall remain in place and not be moved or removed until all construction activities at the site are completed.

TREE PRUNING AND TREATMENTS

1. All recommendations for pruning or other treatments must be completed prior to acceptance of the project. It is strongly recommended that pruning be completed prior to the start of grading to facilitate optimum logistics and access.
- 2.
3. All pruning shall be conducted in conformance with International Society of Arboriculture pruning standards, and all pruning must occur by, or under the direct supervision of, an arborist certified by the International Society of Arboriculture.

GRADING AND TRENCHING

1. Any construction activity that necessitates soil excavation in the vicinity of preserved trees shall be avoided where possible, or be appropriately mitigated under the guidance of the project arborist. All contractors must be aware at all times that specific protection measures are defined, and non conformance may generate stop-work orders.
2. The designated dripline is defined around all site trees to be preserved. Fences protect the designated areas. No grading or trenching is to occur within this defined area unless so designated by the Improvement Plan, and where designated shall occur under the direct supervision of the project arborist.
3. Trenching should be routed around the dripline whenever possible. Where trenching has been designated within the dripline, utilization of underground technology to bore, tunnel or excavate with high-pressure air or water will be specified. Hand digging will be generally discouraged unless site conditions restrict the use of alternate technology.
4. All roots greater than one inch in diameter shall be cleanly hand-cut as they are encountered in any trench or in any grading activity. The tearing of roots by equipment of any type shall not be allowed. Mitigation treatment of pruned roots shall be specified by the project arborist as determined by the

- degree of root pruning, location of root pruning, and potential exposure to desiccation. No pruning paints or sealants shall be used on cut roots.
5. Where significant roots are encountered mitigation measures such as supplemental irrigation and/or organic mulches may be specified by the project arborist to offset the reduction of root system capacity.
 6. Retaining walls are effective at holding grade changes outside the area of the dripline and are recommended where necessary. Retaining walls shall be constructed in post and beam or drilled pier construction styles where they are necessary near or within a dripline.
 7. Placement of fill soils is generally discouraged within the dripline, but in some approved locations may be approved to cover up to 30% of this area. The species and condition of the tree shall be considered, as well as site and soil conditions, and depth of fill. Retaining walls should be utilized to minimize the area of fill within the dripline. Type of fill soil and placement methods shall be specified by the project arborist.
 8. Grade changes outside the dripline, or those necessary in conjunction with retaining walls, shall be designed so that drainage water of any type or source is not diverted toward or around the root crown in any manner. Grade shall drain away from root crown at a minimum of 2%. If grading toward the root collar is unavoidable, appropriate surface and/or subsurface drain facilities shall be installed so that water is effectively diverted away from root collar area.
 9. Approved fill soils within the dripline may also be mitigated using aerated gravel layers and/or perforated aeration tubing systems, as specified by the project arborist.
 10. Tree roots will be expected to grow into areas of soil fill, and quality of imported soil shall be considered. Ideally, fill soil should be site soil that closely matches that present within the root zone area. When import soil is utilized it must be the same or slightly coarser texture than existing site soil, should have a pH range comparable to site soils, and generally should have acceptable chemical properties for appropriate plant growth. A soil analysis is recommended prior to importation to evaluate import soil for these criteria.
 11. Grade reduction within the designated dripline shall be generally discouraged, and where approved, shall be conducted only after careful consideration and coordination with the project arborist.

12. Foundations of all types within the dripline shall be constructed using design techniques that eliminate the need for trenching into natural grade. These techniques might include drilled piers, grade beams, bridges, or cantilevered structures. Building footprints should generally be outside the dripline whenever possible.

DRAINAGE

The location and density of native trees on many sites may be directly associated with the presence of naturally occurring water, especially ephemeral waterways. Project design, especially drainage components, should take into consideration that these trees may begin a slow decline if this naturally present association with water is eliminated.

TREE DAMAGE

Any form of tree damage which occurs during the demolition, grading, or construction process shall be evaluated by the project arborist. Specific mitigation measures will be developed to compensate for or correct the damage. Fines and penalties may also be levied.

Measures may include, but are not limited to, the following:

- pruning to remove damaged limbs or wood
- bark scoring to remove damaged bark and promote callous formation
- alleviation of compaction by lightly scarifying the soil surface
- installation of a specific mulching material
- supplemental irrigation during the growing season for up to 5 years
- treatment with specific amendments intended to promote health, vigor, or root growth
- vertical mulching or soil fracturing to promote root growth
- periodic post-construction monitoring at the developer's expense
- tree replacement, or payment of the established appraised value, if the damage is so severe that long term survival is not expected

Horticultural Associates
P.O. Box 1261
Glen Ellen, CA 95442
707-935-3911

FERTILIZATION

1. Native trees generally do not require supplemental fertilization unless exhibiting a deficiency symptom. Following completion of construction any tree that exhibits symptoms of a specific nutrient deficiency shall be fertilized to compensate for the deficiency. Soil or tissue analysis may be required to identify the deficiency.
2. Distressed trees, or trees damaged by construction in any way, may be detrimentally affected by supplemental fertilization. The decision to fertilize, and with what fertilizers, shall be made by the project arborist based on conditions and appearance observed at the completion of the project.

PEST CONTROL

A close visual examination for tree pests shall be conducted by the pruning contractor as he completes recommended pruning procedures. If a serious infestation is present, that was not apparent from ground observation, then pest control measures may be considered. However, the simple presence of tree pests does not warrant the use of chemical pesticides. Only a serious infestation, capable of causing tree decline, would warrant pesticide use. The use of organic sprays or pesticidal soaps is the preferred method for treating any serious pest infestation.

WEED CONTROL

No specific measures are recommended for weed control, and the presence of weeds should not be considered problematic in relation to continued tree health. However, use of contact weed killers and pre-emergent weed killers are generally not recommended due to their potential for root system damage if improperly applied.

DISEASE CONTROL

No specific measures are recommended for disease control unless noted in the Tree Protection and Preservation Plan. All disease control measures should be based on observation of actual conditions in the tree canopy.

MULCHING

Trees will generally benefit from the application of a 4 inch layer of chipped bark mulch over the soil surface within the greater root zone area. Ideal mulch material is a chipped bark containing a wide range of particle sizes. Bark mulches composed of shredded redwood, bark screened for uniformity of size, or chipped lumber will not function as beneficially. Rock and gravel mulches are generally discouraged due to their minimal benefit.

PLANTING UNDER EXISTING TREES

1. The installation of lawn beneath established native trees is strongly discouraged because it has the potential to initiate serious disease. If planting is required for aesthetic or functional purposes, the use of drought tolerant, woody species is most appropriate. Species should be selected for their ability to survive with minimal or no water through the summer months after the initial establishment period. Only drip irrigation should be utilized within the canopy dripline to minimize summer water in the root zone.
2. Many non-native trees will tolerate summer irrigation well and suitable landscape planting and irrigation may actually be beneficial.

Appendix D

Geotechnical Investigation

DEVELOPMENT
SERVICES
AUG 8 0 2019
CITY OF MORGAN HILL

GEOTECHNICAL INVESTIGATION

On

PROPOSED RESIDENTIAL DEVELOPMENT

At

**18110 Monterey Road
Morgan Hill, California**

For

City Ventures

By

Quantum Geotechnical, Inc.

Project No. F019.G

August 6, 2019

QUANTUM GEOTECHNICAL INC.

Project No. F019.G
August 6, 2019

Mr. Jason Bernstein
Director of Development
City Ventures
444 Spear Street, Suite 200
San Francisco, CA 94105

Subject: Proposed Residential Development
18110 Monterey Road
Morgan Hill, California
GEOTECHNICAL INVESTIGATION

Dear Mr. Bernstein:

In accordance with your authorization, *Quantum Geotechnical, Inc.*, has investigated the geotechnical conditions at the subject site located in Morgan Hill, California

The accompanying report presents the results of our field investigation. Our findings indicate that development of the site for the proposed new residential development is feasible provided the recommendations of this report are carefully followed and are incorporated into the project plans and specifications.

Should you have any questions relating to the contents of this report or should additional information be required, please contact our office at your convenience.

Sincerely,
Quantum Geotechnical, Inc.



Simon Makdessi, P.E., G.E.
President



TABLE OF CONTENTS

LETTER OF TRANSMITTAL

GEOTECHNICAL INVESTIGATION

Purpose and Scope	4
Proposed Construction	4
Site Location and Description	4
General Geologic Conditions	5
Investigation	6
Subsurface Conditions	7
2016 CBC Seismic Design Criteria	7

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

General	9
Demolition/Site Preparation	9
Grading	10
Surface and Subsurface Drainage	11
Bio-Filtration Facilities	11
Foundations	13
Post-Tensioned Slab-On-Grade	13
General Construction Requirements for Post-Tensioned Slabs	13
Miscellaneous Concrete Flatwork	15
Retaining Walls	16
Retaining Wall Foundations - Spread Footings	17
Retaining Wall Foundations- Pier Footings	17
Pavement Areas	18
Utility Trenches	19
Project Review and Construction Monitoring	20

REFERENCES	21
------------------	----

LIMITATIONS AND UNIFORMITY OF CONDITIONS	22
--	----

APPENDIX A

Figure 1, Site Vicinity and Fault Map	24
Figure 2, Regional Geologic Map	25
Figure 3, Site Plan	26
Logs of Test Borings Q-1 to Q-5	27
Key to Boring Logs	32

APPENDIX B

Laboratory Investigation	34
Summary of Laboratory Test Results, Table B-1	35

APPENDIX C

The Grading Specifications	37
Guide Specifications for Rock Under Floor Slabs	42

GEOTECHNICAL INVESTIGATION

PURPOSE AND SCOPE

The purpose of the investigation for the proposed new residential subdivision development located on Monterey Road in Morgan Hill, California, was to determine the surface and subsurface soil conditions at the subject site. Based on the results of the investigation, criteria were established for the grading of the site, the design of foundations for the proposed development, and the construction of other related facilities on the property.

Our investigation included the following:

- a. Field reconnaissance by the Soil Engineer;
- b. Determine the general seismicity of the site in accordance with the 2016 CBC;
- c. Drilling and sampling of five soil borings;
- c. Laboratory testing of soil samples;
- d. Analysis of the data and formulation of conclusions and recommendations; and
- e. Preparation of this written report.

PROPOSED DEVELOPMENT

It is our understanding that the proposed project consists of developing the site for the construction of a subdivision of single family homes, along with new streets, utilities, and other associated improvements. It is assumed that the construction will use wood for the framing of new buildings. Cuts and fills during grading are unknown, but it is anticipated that import fill is needed to raise the site to design grade levels.

SITE LOCATION AND DESCRIPTION

The site is located in northwestern part of Morgan Hill, west of Highway 101 and south of Cochrane Avenue, within level terrain at approximately 90 feet above mean sea level (7), as shown on the "Site Vicinity and Fault Map", Figure 1, attached to Appendix A. The site is triangular in shape, elongated in the north to south direction, and is approximately 4.6 acres in area. The site is bounded by Monterey Road to the west, railroad tracks to the east, and a vacant field on a separate parcel to the south. The site currently consists of vacant, recently tilled field, with one small building on the southeastern corner of the lot. Tall trees line the perimeter of the property.

GENERAL GEOLOGIC CONDITIONS

The site is located within the Coast Ranges Geomorphic Province of California. Throughout the Cenozoic Era, the western part of California has been affected by tectonic forces associated with lateral or transform plate motion between the North American and Pacific crustal plates, which has produced a complex system of northwest-trending faults - the San Andreas, Hayward, and Calaveras Fault systems being the most prominent. Uplift, erosion and subsequent re-deposition of sedimentary rocks within this province have been driven primarily by the northwest-southeast directed strike-slip movement of the tectonic plates and the associated northeast oriented compressional stress. The northwest-trending coastal mountain ranges are the result of an orogeny believed to have been occurring since the Pleistocene epoch (approximately 2-3 million years before present).

The site resides in level terrain at 90 feet above mean sea level (7) within the southern Santa Clara Valley. Based on a review of geologic maps (3), the site is underlain by Pleistocene age alluvial fan deposits. These deposits will generally consist of well consolidated coarser grained material nearer to the crown of the fan and around the area of paleochannels, and finer grained silt and clay deposits nearer to the toe. Site and regional geology are displayed in the "Regional Geologic Map", Figure 2, Appendix A.

The USGS Quaternary Fault database (6) provides a record of quaternary fault surface traces based on historic mapping and observations. Table I, below, lists the USGS Quaternary active fault traces located within 10 miles of the site location. Nearby fault traces are as indicated on Figure 1, "Site Vicinity and Fault Map", attached to Appendix A.

The California Geological Survey seismic hazard zone report for the Morgan Hill quadrangle (2) excludes the site from areas mapped for liquefaction, landslide, and fault surface rupture hazards. According to the California Department of Water Resources, Water Data Library (1), groundwater may be encountered around 20 feet below ground surface within the site vicinity.

Table I
List of Quaternary Faults

Fault ID	Distance from Site (mi)	USGS Activity Level (yrs)
Calaveras	1.0	< 150 ya
Tres Pinos	2.0	<15 kya
Quien Sabe	3.3	< 15 kya
Sargent	3.7	< 15 kya
San Andreas	5.6	< 150 ya
Vergeles	6.1	1.6 mya – 15 kya

Note: mya and kya are abbreviations for million years (mya) and thousand years (kya) ago.

INVESTIGATION

The field investigation was performed over two days on May 7 and May 28, 2019, and included a reconnaissance of the site and the drilling of five exploratory borings at the approximate locations shown on Figure 2, "Site Plan" in Appendix A. The borings extended to depths ranging from 18.5 to 30 feet below current ground surface.

The borings were advanced using truck mounted Mobile B-24 drill rig utilizing 4.5 inch solid flight augers. Visual classifications were made from auger cuttings and the samples in the field. As the drilling proceeded, relatively undisturbed core samples were obtained by means of a 3.0 inch O.D. Modified California split-tube sampler containing 2.5 inch O.D. brass liners, and a 2.0 inch O.D. standard pin split tube sampler. The sampler was advanced into the soils at various depths under the impact of a 140-pound hammer having a free fall of 30 inches. The number of blows required to advance the sampler 12 inches into the soil, after seating the sampler 6 inches, were recorded on the boring logs.

The stratification of the soils, descriptions, location of undisturbed soil samples and blow counts are shown on the respective "Logs of Test Borings" contained within Appendix A.

Laboratory testing was conducted for Atterberg Limits, moisture density, gradation analysis, consolidation, and corrosion potential. The data received from the lab are presented on the boring logs, and summarized in Appendix B.

SUBSURFACE CONDITIONS

The subsurface conditions as encountered in each of the soil borings were generally consistent across the site. The borings generally encountered very stiff and hard, gravelly silt, lean sit and clayey silt with cobbles up to 3 inches within the top several feet. Below this depth, hard sandy to clayey silt material was encountered to the boring termination depths. In boring Q-2, a 7 foot layer of dense silty gravel was encountered and extended to 29 feet where very stiff to hard silty clay was encountered to the termination depth of 30 feet.

The near surface soil registered Plasticity Index (PI) values ranging from 10 to 16, indicating the material to be of low expansion potential.

Groundwater was encountered at 22.5 foot depth in boring Q-2 within the gravel layer, at the time of our exploration. Fluctuations in the groundwater table may occur due to tidal influences, seasonal rainfall and urbanization or nearby development activities.

A more thorough description and stratification of the soil conditions are presented on the respective “Logs of Test Borings” in Appendix A. The approximate locations of the borings are shown on Figure 3, “Site Plan” in Appendix A.

2016 CBC SEISMIC DESIGN CRITERIA

The potential damaging effects of regional earthquake activity should be considered in the design of structures. As a minimum, seismic design should be in accordance with Chapter 16 of the 2016 California Building Code (CBC). The 2016 CBC utilizes the design procedures outlined in the 2010 ASCE 7-10 Standard. Using the criteria in Chapter 20 of ASCE 7-10, in its current condition, the site is classified as Site Class D. The seismic design parameters have been developed using the online “Seismic Design Maps” tool (5) by the Structural Engineering Association (SEA) and Office of Statewide Health Planning and Development (OSHPD) and a site location based on longitude and latitude. The parameters generated for the subject site for a latitude of 37.13835°N, and longitude of 121.66116° W, are presented in the following Table II:

Table II
2016 CBC Seismic Design Criteria

Seismic Parameter	Coefficient	Value
Site Class		D
Peak Ground Acceleration (Site Modified)	PGAM	0.566
Mapped MCE Spectral Acceleration at Short-Period 0.2 secs	S _s	1.500
Mapped MCE Spectral Acceleration at a Period of 1.0s	S ₁	0.600
Adjusted MCE, 5% Damped Spectral Response Acceleration at Short Period of 0.2s	S _{MS}	1.500
Adjusted MCE, 5% Damped Spectral Response Acceleration at Period of 1.0s	S _{M1}	0.900
Design 5% Damped Spectral Response Acceleration at Short Period of 0.2s for Occupancy Category I/II/III	S _{DS}	1.000
Design 5% Damped Spectral Response Acceleration at Period of 1.0s for Occupancy Category I/II/III	S _{D1}	0.600

DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

GENERAL

1. From a geotechnical point of view, the site is suitable for the construction of the proposed residential development provided the recommendations presented in this report are incorporated into the project plans and specifications.
2. The most prominent geotechnical feature of this site is the presence of low expansive silt materials within the upper 10 feet, some of which is gravelly and cemented. The proposed structures may be satisfactorily supported on structural post tensioned slabs. Specific foundation design recommendations are provided under the heading Foundations.

DEMOLITION/SITE PREPARATION

3. Prior to any grading, demolition of the existing structures on the site should be completed. Demolition should include the complete removal of all surface and subsurface structures. If any of the following are encountered: concrete, septic tanks, storm inlets, foundations, asphalt, machinery, equipment, debris, and trash, these should also be removed with the exception of items specified by the owner for salvage. In addition, all known underground structures must be located on the grading plans so that proper removal may be carried out. It is vital that *Quantum Geotechnical Inc.*, intermittently observe the removal of subsurface structures and be notified in ample time to ensure that no subsurface structures are covered. If *Quantum Geotechnical Inc.*, is not contacted to observe the demolition and removal of subsurface structures, further backhoe exploratory investigation will need to be performed prior to the commencement of grading.
4. Excavations made by the removal of the structure should be left open by the contractor for backfill in accordance with the requirements for engineered fill. The removal of underground structures should be done under the observation of the Soil Engineer to verify adequacy of the removal and that subsoils are left in proper condition for placement as engineered fills. Any soil exposed by the removal operations which are deemed soft or unsuitable by the Soil Engineer, shall be excavated as uncompacted fill and be removed as required by the Soil Engineer during grading. Any resulting excavations should be properly backfilled with engineered fill under the observation of the

Soil Engineer. It is important that *Quantum Geotechnical Inc.*, be present during removal activities to verify that **all** excavations created by removal of subsurface structures are left open and located on a grading plan. If any excavations are loosely backfilled without our knowledge and these excavations are not located and backfilled during grading, future settlement of these loosely filled excavations could occur and may cause damage to structures and improvements.

GRADING

5. The grading requirements presented herein are an integral part of the grading specifications presented in Appendix C of this report and should be considered as such.
6. Currently, the site contains little to no vegetation and stripping of vegetation and topsoil may not be required. Vegetation conditions may be different at the time of grading, and the extent of any stripping, mowing or discing as part of site preparation, will be reevaluated at the time of grading. Any strippings will be stockpiled in an approved area that is unaffected by grading operations until their future use. Organically contaminated soil material may be utilized in landscape areas located outside the building footprint.
7. After site preparation, the top 8 inches of exposed ground should be scarified and compacted to a degree of relative compaction of at least 90% at 2 percent above optimum moisture content as determined by ASTM D1557-12 Laboratory Test Procedure.
8. The site may be brought to the desired finished grades by placing engineered fill in lifts of 8 inches in uncompacted thickness and compacting to a minimum relative compaction of 90% at 2 percent above optimum moisture content for lean clay soil as determined by ASTM D1557-12 Laboratory Test Procedure.
9. All soils encountered during our investigation except those within the top few inches of predominantly organic material, are suitable for use as engineered fill when placed and compacted at the recommended moisture content and provided it does not contain any debris.

SURFACE AND SUBSURFACE DRAINAGE

10. All finish grades should be provided with a positive gradient to an adequate discharge point in order to provide rapid removal of surface water runoff away from all foundations. No ponding of water should be allowed on the pad or adjacent to the foundations. Surface drainage must be designed by the project Civil Engineer and maintained by the property owners at all times. The pad should be graded in a manner that surface flow is to a controlled discharge system.

11. Lot slopes and drainage must be provided by the project Civil Engineer to remove all storm water from the pad and to minimize storm and/or irrigation water from seeping beneath the structures. Should surface water be allowed to seep under the structure, foundation movement resulting in structural cracking and damage will occur. Where possible, finished grades around the perimeter of the structures should be compacted and should be sloped at a minimum 2% gradient away from the exterior foundation. Surface drainage requirements constructed by the builder should be maintained during landscaping. In particular, the creation of planter areas confined on all sides by concrete walkways or decks and the residence foundation is not desirable since any surface water due to rain or irrigation becomes trapped in the planter area with no outlet. If such a landscape feature is necessary, surface area drains in the planter area or a subdrain along the foundation perimeter must be installed.

12. Continuous roof gutters are recommended. According to local government requirements, roof downspout and drain flows should be directed to at grade bio-filtration areas, or raised planter boxes next to the building perimeter, where possible. From a geotechnical and maintenance point of view it is undesirable to discharge water into at grade bio-filtration areas near foundations, because of the possibility of water ponding for sustained periods of time.

BIO-FILTRATION FACILITIES

13. As mentioned earlier, it is undesirable to discharge water into at grade bio-filtration areas near foundations, because of the possibility of water ponding for sustained periods of time, potentially creating excessive moisture related issues. However, certain design features could be made to minimize such potential effects. In addition, the property owners must always maintain the bio-

filtration area to ensure that they are performing as designed and that water does not pond in the area for longer than 48 hours.

14. Typically, the bio-filtration areas consist of an 18 inch layer of sandy loam over 18 inches of permeable gravel material. The top of the bio-filtration area is typically approximately 1 foot below pad grade, therefore, the base of the bio-filtration area will be approximately 4 feet below pad grade. The base of the bio-filtration area will typically contain a perforated pipe to drain any water that may collect within 24 hours. In some situations, the bio-filtration areas may be located immediately adjacent the building structure.

15. Where bio-filtration areas are located closer than 5 feet of the building, the section of loose loam and gravel will provide reduced lateral support, and we recommend a deepened footing be constructed along the perimeter the building adjacent to the bio-filtration area and extending 3 feet beyond in plan length. The depth of the deepened footing will depend on how close the bio-filtration area is located to the building perimeter. As a guide, the footing is to be deepened such that when an imaginary line inclined at 45 degrees from the outside edge base of the footings, it extends below the base of the bio-filtration area excavation. Where bio-filtration areas are located further than 5 feet, no special design is required. Provided the bio-filtration facility is lined with an impermeable liner, no waterproofing of the deepened footing is required.

16. Where bio-filtration areas are located closer than 3 feet of street pavements, a deepened curb footing is required. Where bio-filtration areas are located closer than 1 foot of street pavements, because pavements do not have a positive connection to a deepened curb/footing, the deepened curb/footing may need to be designed as a retaining wall rigid enough to create minimal lateral deflections.

17. Where bio-filtration areas are located closer than 2 feet of hardscape areas, a deepened edge footing is required. The deepened edge should extend at least 1 foot below the subgrade. Where the bio-filtration area is immediately adjacent the hardscape, the deepened edge is to extend at least 3 inches below the base of the bio-filtration system.

FOUNDATIONS

13. Provided the site is prepared as recommended in the “Grading” section, a post-tensioned slab foundation may be satisfactorily used.

Post Tensioned Slab on Grade

14. Post-tensioned slabs should be designed using the following criteria which is based on the design method presented in the Post-Tensioning Institute, Standard Requirements for Design and Analysis of Shallow Post-Tensioned Concrete Foundations on Expansive Soils (PTI DC10.5-12), 2012. Using the relevant site soil and climatic parameters, the recommended geotechnical criteria for use in the design of the post-tensioned slabs is as follows;

	<u>Swelling Mode</u>	
	<u>Center Lift</u>	<u>Edge Lift</u>
Edge Moisture Variation Distance (e_m)	9.0 feet	5.1 feet
Differential Soil Movement (y_m)	0.59 inches	1.09 inches

The maximum allowable bearing pressure at the base of the slab and for localized thickened footings should not exceed 2,000 p.s.f. for dead plus sustained live loads.

15. As indicated earlier, bio-filtration areas may be designed close to the foundation. Where bio-filtration areas are located closer than 5 feet of the building, the section of loose loam and gravel, will provide reduced lateral support, and we recommend a deepened footing be constructed along the perimeter the building adjacent to the bio-filtration area and extending 3 feet beyond in plan length. The depth of the deepened footing will depend on how close the bio-filtration area to the building perimeter. As a guide, the footing is to be deepened such that when an imaginary line inclined at 45 degrees from the outside edge base of the footings, it extends below the base of the bio-filtration area excavation.

General Construction Requirements for Post-Tensioned Slab

16. Prior to construction of the slab, the slab subgrade should be observed by the Soil Engineer to verify that all under-slab utility trenches greater than 18 inches in width have been properly backfilled

and compacted, and that no loose or soft soils are present on the slab subgrade.

17. The on site near surface soil is non-expansive and if the on-site soil is used to form the building pads, slab subgrade saturation and moisture conditioning is not required. If clayey import material is used to grade the site the slab subgrade should be soaked to saturation (minimum 5% above optimum) to a depth of 12 inches prior to placement of the capillary break or vapor retarder/barrier. This should be verified and approved by the Soil Engineer. The penetration of a thin metal probe to a depth of 10-12 inches generally indicates sufficient saturation.

18. The four (4) inch (minimum thickness) layer of gravel typically placed to provide a capillary break beneath concrete slab-on-grade floors may be omitted beneath the monolithically poured mat slab foundations provided that the slabs are at least 10 inches thick. If it is desired to use a 4 inch layer or thinner of gravel section, the gravel should consist of broken stone, crushed or uncrushed gravel, quarry waste, or a combination thereof. The aggregate shall be free from deleterious substances. It shall be of such quality that the absorption of water in a saturated dry condition does not exceed 3% of the oven dry weight of the sample. The material shall be $\frac{3}{4}$ " minus material with no more than 3% passing the #200 sieve, as specified in Appendix C.

19. A moisture vapor retarder/barrier is recommended beneath all slabs-on-grade that will be covered by moisture-sensitive flooring materials such as vinyl, linoleum, wood, carpet, rubber, rubber-backed carpet, tile, impermeable floor coatings, adhesives, or where moisture-sensitive equipment, products, or environments will exist. We recommend that design and construction of the moisture vapor retarder/barrier conform to Section 1805 of the 2013 CBC and relevant sections of American Concrete Institute (ACI) guidance documents 302.1R-04, 302.2R-06 and 360R-10.

20. The moisture vapor retarder/barrier can be placed above the 4 inches of gravel or directly on the soil subgrade and should consist of a minimum 10 mils thick polyethylene with a maximum perm rating of 0.1 in accordance with ASTM E 1745. Seams in the moisture vapor retarder/barrier should be overlapped no less than 6 inches or in accordance with the manufacturer's recommendations. Joints and penetrations should be sealed with the manufacturer's recommended adhesives, pressure-sensitive tape, or both. The contractor must avoid damaging or puncturing the moisture vapor retarder/barrier and repair any punctures with additional polyethylene properly lapped and sealed. The installation of the vapor retarder membrane must be in conformance with ASTM E1643.

21. A minimum of two inches of wetted sand should be placed over the vapor retarder membrane to facilitate curing of the concrete and to act as a cushion to protect the membrane. The perimeter of the mat should be thickened to bear on the prepared building pad and to confine the sand. During winter construction, sand may become saturated due to rainy weather prior to pouring. Saturated sand is not desirable because the sand cushion may become over saturated, and boil into the concrete causing undesirable structural monopolies of sand pockets within the slab. As an alternate, a sand-fine gravel mixture that is stable under saturated conditions may be used. However, the material must be approved by the Soil Engineer prior to use.

22. Alternatively, the sand layer may be eliminated provided the concrete has a maximum water/cement ratio of 0.45 and a 10 mil Class A vapor retarder membrane, such as Stego® Wrap. In any case, the vapor retarder/barrier should have a maximum perm rating of 0.3 in accordance with ASTM E 1745. Seams in the moisture vapor retarder/barrier should be overlapped no less than 6 inches or in accordance with the manufacturer's recommendations. Joints and penetrations should be sealed with the manufacturer's recommended adhesives, pressure-sensitive tape, or both. The contractor must avoid damaging or puncturing the vapor retarder/barrier and repair any punctures with additional polyethylene properly lapped and sealed.

23. Any exterior concrete flatwork such as steps, patios, or sidewalks should be designed independently of the slab, and expansion joints should be provided between the flatwork and the structural unit.

MISCELLANEOUS CONCRETE FLATWORK

27. Miscellaneous flatwork, driveways, and walkways may be designed with a minimum thickness of 4.0 inches. Control joints should be constructed to create squares or rectangles with a maximum spacing of 15 feet on large slab areas. Walkways should be separated from foundations with a thick expansion joint filler. Control joints should be constructed into walkways at a maximum of 5 feet spacing.

RETAINING WALLS

28. Retaining walls should be designed to resist lateral pressures exerted from a media having an equivalent fluid weight as follows:

Active Condition	=	45 p.c.f. for horizontal backslope
At-rest Condition	=	65 p.c.f.
Passive Condition	=	300 p.c.f.
Coefficient of Friction	=	0.35

29. For a non-horizontal backslope, the active condition equivalent fluid weight can be increased by 1.5 p.c.f. for each 2 degree rise in slope from the horizontal.

30. Active conditions occur when the top of the wall is free to move outward. At-rest conditions apply when the top of wall is restrained from any movement.

31. It should be noted that the effects of any surcharge, traffic or compaction loads behind the walls must be accounted for in the design of the walls.

32. The above criteria are based on fully drained conditions. If drained conditions are not possible, then the hydrostatic pressure must be included in the design of the wall. An additional linear distribution of hydrostatic pressure of 63 p.c.f. should be adopted, in this case.

33. In order to achieve fully-drained conditions, a drainage filter blanket should be placed behind the wall. The blanket should be a minimum of 12 inches thick and should extend the full height of the wall to within 12 inches of the surface. If the excavated area behind the wall exceeds 12 inches, the entire excavated space behind the 12-inch blanket should consist of compacted engineered fill or blanket material. The drainage blanket material may consist of either granular crushed rock and drain pipe fully encapsulated in geotextile filter fabric or Class II permeable material that meets CalTrans Specification, Section 68, with drainage pipe but without fabric. A 4-inch perforated drain pipe should be installed in the bottom of the drainage blanket and should be underlain by at least 4 inches of filter type material. A 12-inch cap of clayey soil material should be placed over the drainage blanket. All back drains should be outlet to suitable drainage devices. Retaining wall less than 3 feet in height should be provided with backdrains or weep holes.

34. As an alternate to the 12-inch drainage blanket, a pre-fabricated strip drain (such as Miradrain) may be used between the wall and retained soil. In this case, the wall must be designed to resist an additional lateral hydrostatic pressure of 30 p.c.f.

35. Piping with adequate gradient shall be provided to discharge water that collects behind the walls to an adequately controlled discharge system away from the structure foundation.

36. The retaining walls or soundwalls may be founded on a friction pier foundation or on spread footing foundations. Spread footing and pier design criteria are given below.

RETAINING WALL/SOUNDWALL FOUNDATION - SPREAD FOOTINGS

37. Spread footings should have a minimum depth of eighteen (18) inches below lowest adjacent pad grade (i.e., trenching depth) for soil subgrade. At this depth, the recommended design bearing pressure for continuous footings should not exceed 2,500 p.s.f. due to dead plus sustained live loads and 3,300 p.s.f. due to all loads which include wind and seismic.

38. To accommodate lateral loads, the passive resistance of the foundation soil can be utilized. The passive soil pressures can be assumed to act against the front face of the footing below a depth of one foot below the ground surface. It is recommended that a passive pressure equivalent to that of a fluid weighing 300 p.c.f. be used. The weight of the soil above the footing can be used in the frictional calculations. For design purposes, an allowable friction coefficient of 0.35 can be assumed at the base of the spread footing.

RETAINING WALL/SOUNDWALL FOUNDATION - PIER FOOTINGS

39. The piers should be designed on the basis of skin friction acting between the soil and the pier. For the soils at the site, an allowable skin friction value of 500 p.s.f. can be used for combined dead and live loads, below a depth of 1 foot. This value can be increased by one-third for total loads which include wind or seismic forces. The size, depth and spacing of the piers is to be determined by the structural engineer.

40. To resist lateral loads, the passive resistance of the soil can be used. The soil passive pressures can be assumed to act against the lateral projected area twice the pier diameter. It is recommended

that a passive pressure equivalent to that of a fluid weighing 300 p.c.f be used below 1 foot of final pad grade.

PAVEMENT AREAS

41. R-value tests were not performed as part of this investigation, as the soil expected at subgrade level is not known and depends on the planned grading. Assuming the subgrade material will consist of on site silty or imported low expansive clay material, we will assume an R-value of 10 for preliminary design.

42. Based on an R-Value of 10, the following flexible pavement sections are recommended.

Traffic Index	AC (inches)	Class II¹ AB (inches)
4.5	4.0	7.5
5.0	4.0	8.5
6.0	4.0	11.0

Notes: ¹Minimum R-Value = 78

R-Value = Resistance Value

All Layers in compacted thickness to Cal-Trans Standard Specifications

43. After underground facilities have been placed in the areas to receive pavement and removal of excess material has been completed, the upper 6 inches of the sub-grade soil shall be scarified, moisture conditioned, and compacted to a minimum relative compaction of 95% in accordance with the grading recommendations specified in this report.

44. All aggregate base material placed subsequently should be compacted to a minimum relative compaction of 95% based on the ASTM Test Procedure of D1557-12 (latest edition). The construction of the pavement areas should conform to the requirements set forth by the latest

Standard Specifications of the Department of Transportations of the State of California and/or City of Morgan Hill, Department of Public Works.

45. If planter areas are provided within or immediately adjacent to the pavement areas, or if permeable pavers are used for some areas of pavement, provisions should be made to control irrigation and surface water from entering the pavement subgrade. Water entering the pavement section at subgrade level, which does not have a means for discharge, could cause softening of this zone and lead to pavement failure. We recommend that for areas of permeable pavers, the subgrade be graded to a low point where a subdrain is constructed to discharge any accumulated water.

UTILITY TRENCHES

46. Applicable safety standards require that trenches in excess of 5 feet must be properly shored or that the walls of the trench slope back to provide safety for installation of lines. If trench wall sloping is performed, the inclination should vary with the soil type. The underground contractor should request an opinion from the Soil Engineer as to the type of soil and the resulting inclination.

47. With respect to state-of-the-art construction or local requirements, utility lines are generally bedded with granular materials. These materials can convey surface or subsurface water beneath the structures. It is, therefore, recommended that all utility trenches which possess the potential to transport water be sealed with a compacted impervious cohesive soil material or lean concrete where the trench enters/exits the building perimeter.

48. Utility trenches extending underneath all traffic areas must be backfilled with native or approved import material and compacted to a relative compaction of 90% to within 6 inches of the subgrade. The upper 6 inches should be compacted to 95% relative compaction in accordance with Laboratory Test Procedure ASTM D1557 (latest edition). Backfilling and compaction of these trenches must meet the requirements set forth by the City of Morgan Hill, Department of Public Works. Utility trenches within landscape areas may be compacted to a relative compaction of 85%.

PROJECT REVIEW AND CONSTRUCTION MONITORING

49. All grading and foundation plans for the development must be reviewed by the Soil Engineer prior to contract bidding or submitted to governmental agencies so that plans are reconciled with soil conditions and sufficient time is allowed for suitable mitigative measures to be incorporated into the final grading specifications.

50. *Quantum Geotechnical, Inc.* should be notified at least two working days prior to site clearing, grading, and/or foundation operations on the property. This will give the Soil Engineer ample time to discuss the problems that may be encountered in the field and coordinate the work with the contractor.

51. Field observation and testing during the demolition and/or foundation operations must be provided by representatives of *Quantum Geotechnical, Inc.* to enable them to form an opinion regarding the adequacy of the site preparation, the acceptability of fill materials, and the extent to which the earthwork construction and the degree of compaction comply with the specification requirements. Any work related to the grading and/or foundation operations performed without the full knowledge and under the direct observation of the Soil Engineer will render the recommendations of this report invalid. This does not imply full-time observation. The degree of observation and frequency of testing services would depend on the construction methods and schedule, and the item of work.

REFERENCES

1. California Department of Water Resources. Water Resources Library. Accessed on May 31, 2019 via website: <http://wdl.water.ca.gov/waterdatalibrary/>.
2. California Geological Survey. 2004. "Seismic Hazard Zone Report for the Morgan Hill 7.5-Minute Quadrangle, Santa Clara County, California". Seismic Hazard Zone Report 096.
3. Graymer, R.W., Moring, B.C., Saucedo, G.J., Wentworth, C.M., Brabb, E.E., and Knudsen, K.L. 2006. "Geologic Map of the San Francisco Bay Region". U.S. Geological Survey. Scientific Investigations Map 2918.
4. Nationwide Environmental Title Research, LLC. 2019. Historic Aerials. Accessed on May 31, 2019 from website: <https://www.historicaerials.com/viewer>.
5. Structural Engineers Association and Office of Statewide Health Planning and Development. 2018. "Seismic Design Maps". Accessed May 31, 2019 from web site: <https://seismicmaps.org/>.
6. U.S. Geological Survey. 2019. "Quaternary fault and fold database for the United States". Accessed May 31, 2019 from USGS web site: <http://earthquakes.usgs.gov/regional/qfaults/>.
7. U.S. Geological Survey. 2019. "TNM Elevation Map". Accessed on May 31, 2019 from website: <https://viewer.nationalmap.gov/theme/elevation/##bottom>.

LIMITATIONS AND UNIFORMITY OF CONDITIONS

1. It should be noted that it is the responsibility of the owner or his representative to notify *Quantum Geotechnical, Inc.*, in writing, a minimum of two working days before any clearing, grading, or foundation excavations can commence at the site.
2. The recommendations of this report are based upon the assumption that the soil conditions do not deviate from those disclosed in the borings and from a reconnaissance of the site. Should any variations or undesirable conditions be encountered during the development of the site, *Quantum Geotechnical*, will provide supplemental recommendations as dictated by the field conditions.
3. This report is issued with the understanding that it is the responsibility of the owner, or his representative, to ensure that the information and recommendations contained herein are brought to the attention of the Architect and Engineer for the project and incorporated into the plans and the necessary steps are taken to see that the Contractor and Subcontractors carry out such recommendations in the field.
4. At the present date, the findings of this report are valid for the property investigated. With the passage of time, significant changes in the conditions of a property can occur due to natural processes or works of man on this or adjacent properties. In addition, legislation or the broadening of knowledge may result in changes in applicable standards. Changes outside of our control may render this report invalid, wholly or partially. Therefore, this report should not be considered valid after a period of two (2) years without our review, nor should it be used, or is it applicable, for any properties other than those investigated.
5. Notwithstanding all the foregoing, applicable codes must be adhered to at all times.

APPENDIX A

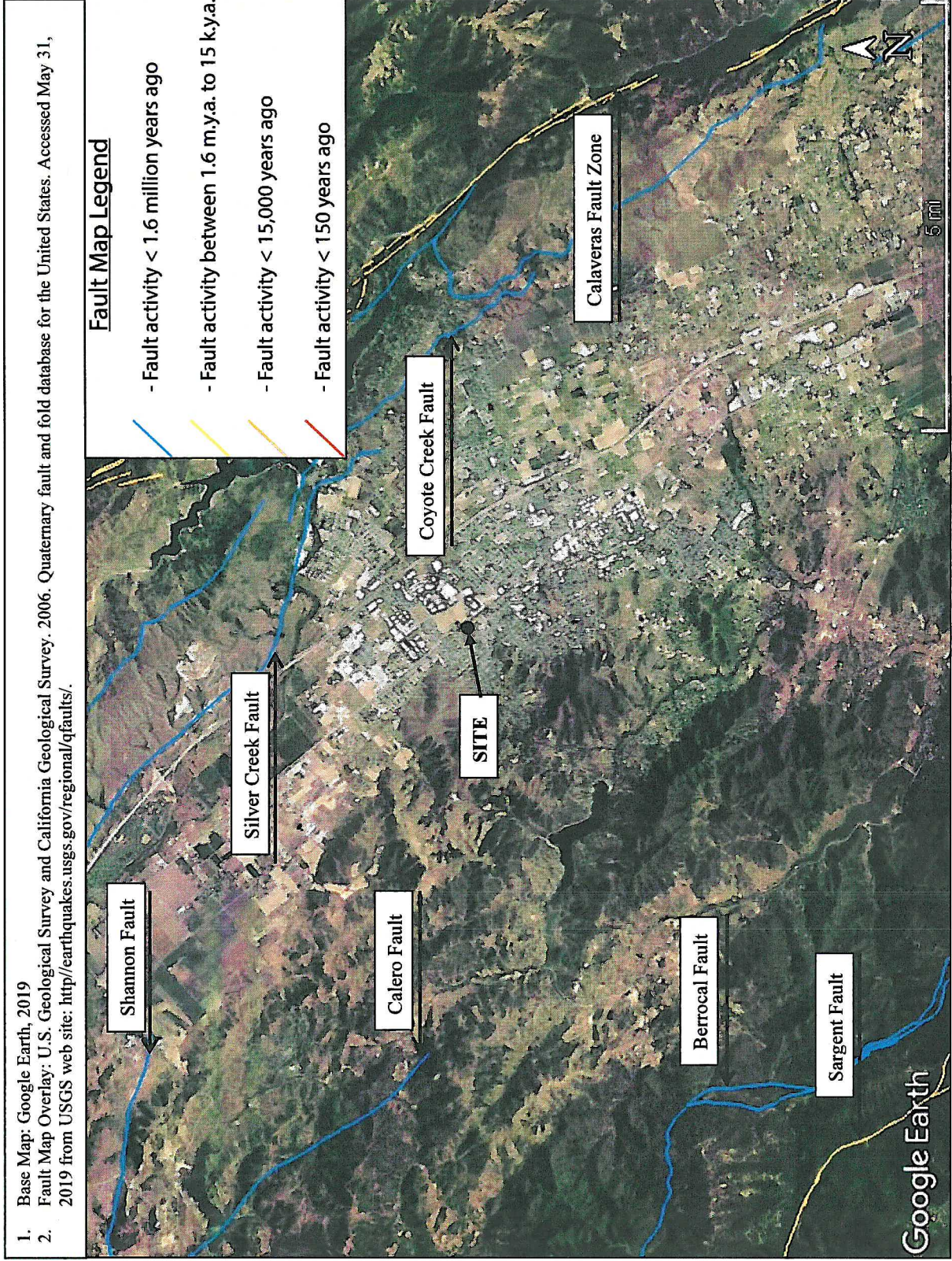
Figure 1, Site Vicinity and Fault Map

Figure 2, Regional Geology Map

Figure 3, Site Plan

Logs of Test Borings

Key to Boring Logs

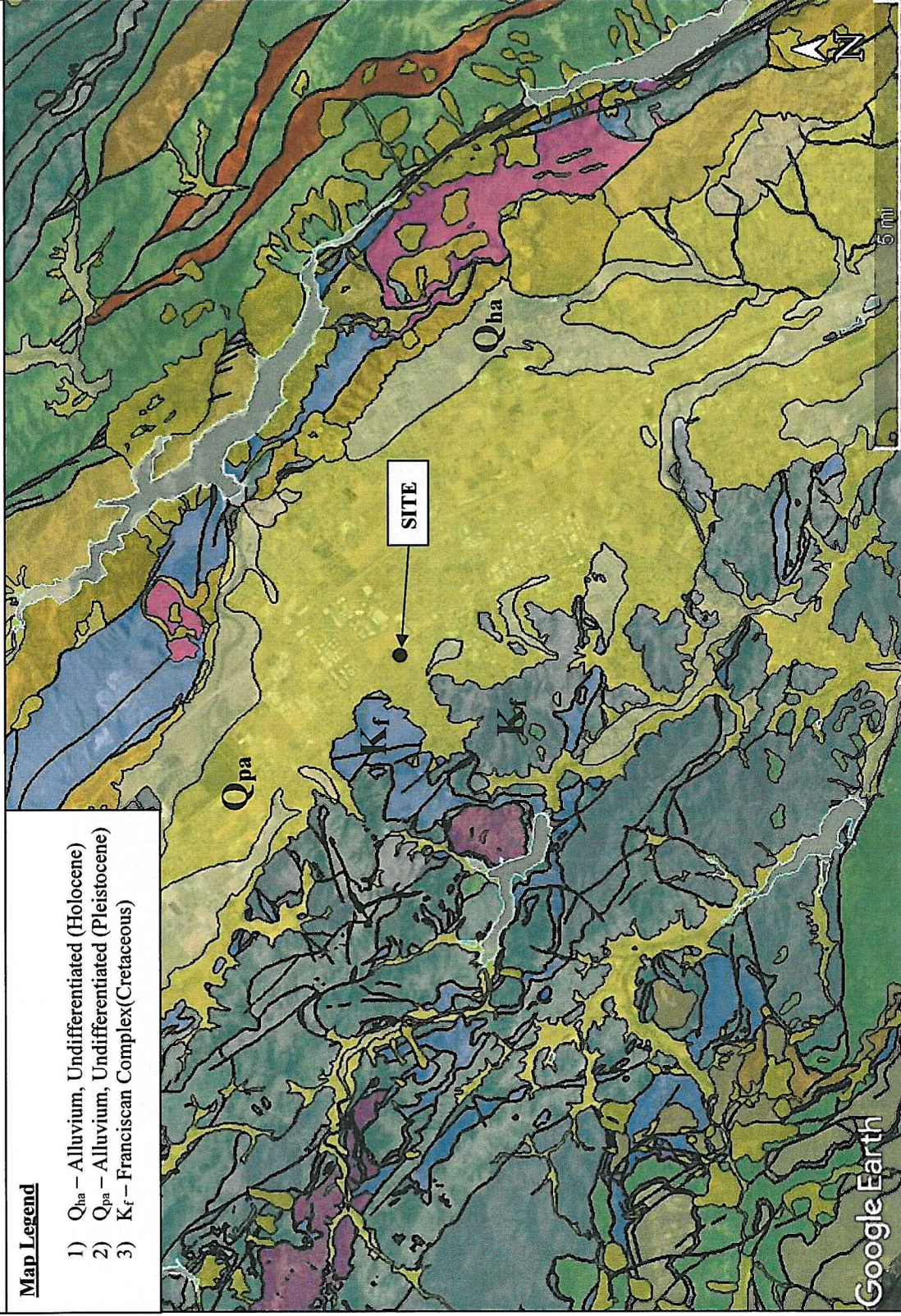


<div>QUANTUM GEOTECHNICAL, INC.</div>	<div>SITE VICINITY AND FAULT MAP</div>		
	<div>Proposed Residential Subdivision 18110 Monterey Road, Morgan Hill</div>	<div>Project No.</div> <div>F019.G</div>	<div>Drawn by:</div> <div>D.T.</div>
		<div>Figure No.</div> <div>1</div>	

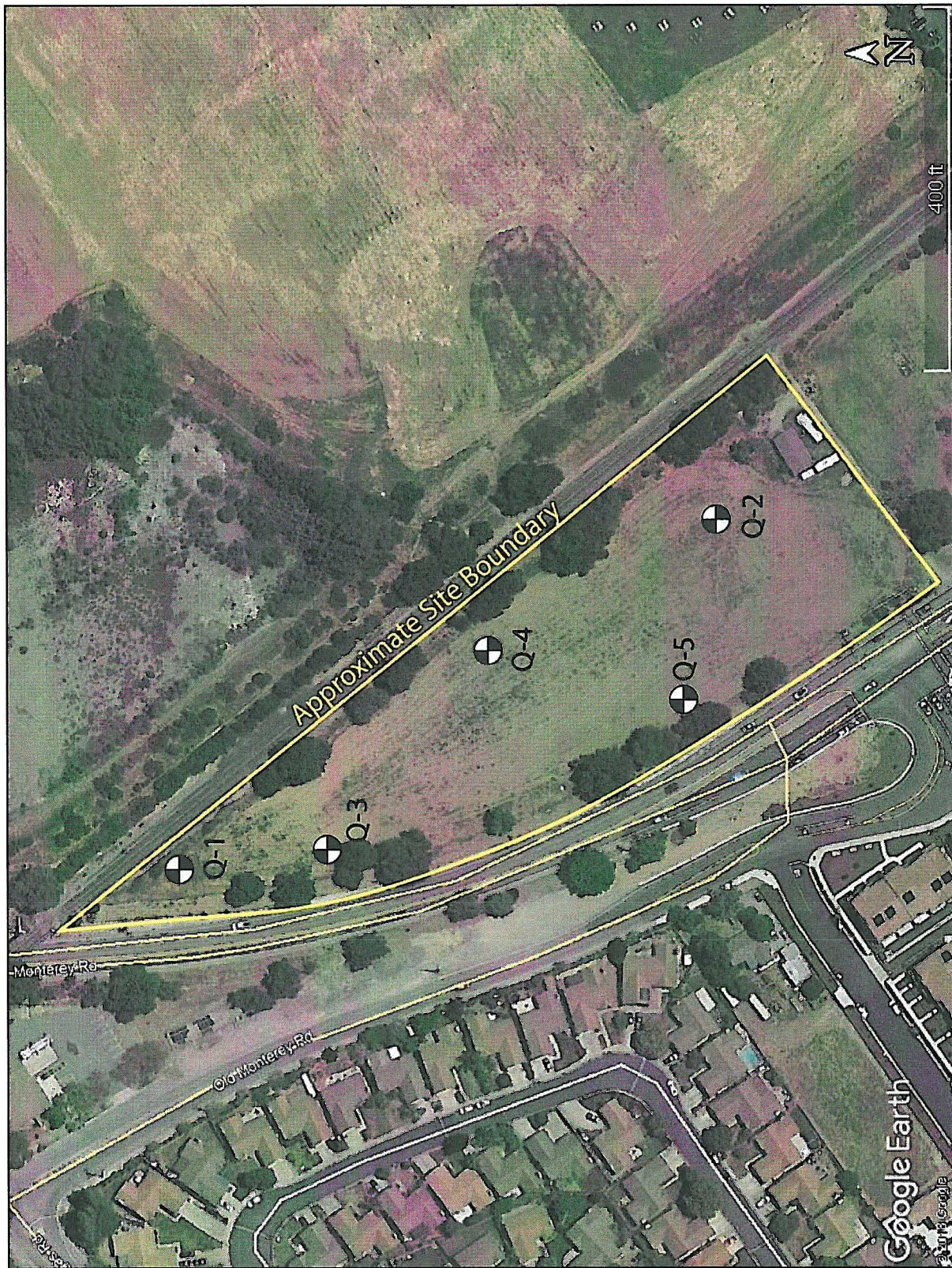
1. Base Map: Google Earth, 2019
2. Geologic Map Overlay: Graymer, R.W., Moring, B.C., Saucedo, G.J., Wentworth, C.M., Brabb, E.E., and Knudsen, K.L. 2006. "Geologic Map of the San Francisco Bay Region". USGS. Scientific Investigations Map 2918.

Map Legend

- 1) Q_{ha} – Alluvium, Undifferentiated (Holocene)
- 2) Q_{pa} – Alluvium, Undifferentiated (Pleistocene)
- 3) K_f – Franciscan Complex (Cretaceous)



QUANTUM GEOTECHNICAL, INC.		REGIONAL GEOLOGIC MAP		
Proposed Residential Subdivision 18110 Monterey Road, Morgan Hill		Project No. F019.G	Drawn by: D.T.	Figure No. 2



SITE PLAN				
QUANTUM GEOTECHNICAL, INC.	Proposed Residential Subdivision 18110 Monterey Road., Morgan Hill	Project No. F019.G	Drawn by: D.T.	Figure No. 3







Project: Monterey Road	Log of Boring Q-1	Quantum Geotechnical, Inc.
Project Location: 18110 Monterey Rd., Morgan Hill	Sheet 1 of 1	1110 Burnett Ave., Ste B
Project Number: F019.G		Concord, CA 94520

Date(s) Drilled 05/07/19	Logged By DT	Checked By SM
Drilling Method Solid Flight	Drill Bit Size/Type 4 in.	Total Depth of Borehole 18.5 ft.
Drill Rig Type Mobile B-24	Drilling Contractor Hillside Drilling	Approximate Surface Elevation 90 ft. amsl.
Groundwater Level and Date Measured None Encountered	Sampling Method(s) Modified California, SPT	Hammer Data Rope and Cathead
Borehole Backfill Soil	Location See Site Plan	

Elevation (feet)	Depth (feet)	Sample Type	Sample Number	Sampling Resistance, blows/ft	Material Type	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	Percent Fines (-#200)	LL, %	PI, %
90	0				ML		Lean SILT: Dark orange brown with mottled black; dry; hard; minor fine, subrounded gravel.					
			1-1	15								
			1-2	67								
85	5				ML		At 5 ft.: Minor medium sand content.	13.4	122.5		31	14
			1-3	31								
80	10				ML		At 10 ft.: Increase in clay content; decrease in sand content.	18.4	112.2			
			1-4	29								
75	15				ML		At 18.5 ft.: Drill rig malfunctioned; no sample was collected at this depth.					
							Bottom of Boring at 18.5 ft.					
							No groundwater was encountered.					
70	20											
65	25											
60	30											

Project: Monterey Road	Log of Boring Q-2	Quantum Geotechnical, Inc.
Project Location: 18110 Monterey Rd., Morgan Hill	Sheet 1 of 1	1110 Burnett Ave., Ste B
Project Number: F019.G		Concord, CA 94520

Date(s) Drilled 05/28/19	Logged By DT	Checked By SM
Drilling Method Solid Flight	Drill Bit Size/Type 4 in.	Total Depth of Borehole 30 ft.
Drill Rig Type Mobile B-24	Drilling Contractor Hillside Drilling	Approximate Surface Elevation 90 ft. amsl.
Groundwater Level and Date Measured 22.5 ft.	Sampling Method(s) Modified California, SPT	Hammer Data Rope and Cathead
Borehole Backfill Soil	Location See Site Plan	

Elevation (feet)	Depth (feet)	Sample Type	Sample Number	Sampling Resistance, blows/ft	Material Type	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	Percent Fines (-#200)	LL, %	PI, %
90	0				CL		Silty CLAY: Dark orange brown; slightly moist; hard; minor fine, subangular gravel.					
			2-1	44				10.2	121.9		27	10
			2-2	60	ML		Gravelly SILT: Dark reddish brown; slightly moist; hard; coarse to fine, subangular to subrounded gravel; minor medium sand.	10.9	120.2			
85	5											
			2-3	16	ML		Clayey SILT: Dark orange to olive brown; slightly moist; hard; minor coarse (to 1") to fine, subrounded gravel.	18.1				
80	10											
			2-4	31	ML		Sandy SILT: Dark olive brown; slightly moist; hard; medium to fine sand; trace fine, subrounded gravel.					
75	15											
			2-5	42								
70	20											
			2-6	38	GP		Silty GRAVEL: Dark olive brown; wet; coarse to fine gravel; dense.	11.5		15		
65	25											
			2-7	29	CL		Silty CLAY: Dark olive brown; moist; hard.					
60	30						Bottom of Boring at 30 ft.					

Project: Monterey Road	Log of Boring Q-3	Quantum Geotechnical, Inc.
Project Location: 18110 Monterey Rd., Morgan Hill	Sheet 1 of 1	1110 Burnett Ave., Ste B
Project Number:		Concord, CA 94520

Date(s) Drilled 05/28/19	Logged By DT	Checked By SM
Drilling Method Solid Flight	Drill Bit Size/Type 4 in.	Total Depth of Borehole 20 ft.
Drill Rig Type Mobile B-24	Drilling Contractor Hillside Drilling	Approximate Surface Elevation 90 ft. amsl.
Groundwater Level and Date Measured None Encountered	Sampling Method(s) Modified California	Hammer Data Rope and Cathead
Borehole Backfill Soil	Location See Site Plan	

Elevation (feet)	Depth (feet)	Sample Type	Sample Number	Sampling Resistance, blows/ft	Material Type	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	Percent Fines (-#200)	LL, %	PI, %
90	0				ML		Clayey SILT: Dark orange brown; dry; hard; minor subrounded gravel.					
			3-1	26				13.2	89.3			
			3-2	52	ML		Sandy SILT: Dark reddish brown; dry; hard; coarse to fine sand; coarse to fine gravel.	12.4	114.4			
85	5				ML		Lean SILT: Olive brown; dry; hard; trace fine, subrounded gravel.					
			3-3	49				13.4	112.0			
80	10											
			3-4	64								
75	15											
			3-5	31	ML		At 19 ft.: Increase to minor medium sand.					
70	20						Bottom of Boring at 20 ft. No groundwater was encountered.					
65	25											
60	30											

Project: Monterey Road	Log of Boring Q-4	Quantum Geotechnical, Inc.
Project Location: 18110 Monterey Rd., Morgan Hill	Sheet 1 of 1	1110 Burnett Ave., Ste B
Project Number: F019.G		Concord, CA 94520

Date(s) Drilled 05/28/19	Logged By DT	Checked By SM
Drilling Method Solid Flight	Drill Bit Size/Type 4 in.	Total Depth of Borehole 20 ft.
Drill Rig Type Mobile B-24	Drilling Contractor Hillside Drilling	Approximate Surface Elevation 90 ft. amsl.
Groundwater Level and Date Measured None Encountered	Sampling Method(s) Modified California, SPT	Hammer Data Rope and Cathead
Borehole Backfill Soil	Location See Site Plan	

Elevation (feet)	Depth (feet)	Sample Type	Sample Number	Sampling Resistance, blows/ft	Material Type	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	Percent Fines (-#200)	LL, %	Pl, %
90	0				ML		Sandy to Clayey SILT: Dark reddish brown; dry; hard; coarse, subangular gravel.					
			4-1	22				11.5	115.1		33	16
			4-2	38				11.3	121.7			
85	5				ML		At 5 ft.: Minor coarse to fine, subrounded gravel.					
			4-3	27	ML		Lean SILT: Dark olive brown with mottled black and orange; moist; hard; trace fine, subrounded gravel.	17.3				
80	10											
			4-4	32								
75	15											
			4-5	27								
70	20						Bottom of Boring at 20 ft. No groundwater was encountered.					
65	25											
60	30											

Project: Monterey Road	Log of Boring Q-5	Quantum Geotechnical, Inc.
Project Location: 18110 Monterey Rd., Morgan Hill	Sheet 1 of 1	1110 Burnett Ave., Ste B
Project Number: F019.G		Concord, CA 94520

Date(s) Drilled 05/28/19	Logged By DT	Checked By SM
Drilling Method Solid Flight	Drill Bit Size/Type 4 in.	Total Depth of Borehole 20 ft.
Drill Rig Type Mobile B-24	Drilling Contractor Hillside Drilling	Approximate Surface Elevation 90 ft. amsl.
Groundwater Level and Date Measured None Encountered	Sampling Method(s) Modified California, SPT	Hammer Data Auto.
Borehole Backfill Soil	Location See Site Plan	

Elevation (feet)	Depth (feet)	Sample Type	Sample Number	Sampling Resistance, blows/ft	Material Type	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	Percent Fines (-#200)	LL, %	PI, %
90	0				ML		Lean SILT with Gravel: Dark olive brown; slightly moist to dry; hard; coarse to fine, subrounded gravel.					
85	5		5-1	37				10.3	121.1			
80	10		5-2	36				18.5	108.3			
75	15		5-3	30				12.0				
70	20		5-4	21	CL		Silty CLAY: Dark olive brown; moist; stiff.					
65	25						Bottom of Boring at 20 ft. No groundwater was encountered.					
60	30											

Project: Monterey Road Project Location: 18110 Monterey Rd., Morgan Hill Project Number: F019.G	Key to Log of Boring Sheet 1 of 1	Quantum Geotechnical, Inc. 1110 Burnett Ave., Ste B Concord, CA 94520
---	--	--

Elevation (feet)	Depth (feet)	Sample Type	Sample Number	Sampling Resistance, blows/ft	Material Type	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	Percent Fines (-#200)	LL, %	PI, %
1	2	3	4	5	6	7	8	9	10	11	12	13
<div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p>COLUMN DESCRIPTIONS</p> <p>1 Elevation (feet): Elevation (MSL, feet).</p> <p>2 Depth (feet): Depth in feet below the ground surface.</p> <p>3 Sample Type: Type of soil sample collected at the depth interval shown.</p> <p>4 Sample Number: Sample identification number.</p> <p>5 Sampling Resistance, blows/ft: Number of blows to advance driven sampler one foot (or distance shown) beyond seating interval using the hammer identified on the boring log.</p> <p>6 Material Type: Type of material encountered.</p> <p>7 Graphic Log: Graphic depiction of the subsurface material encountered.</p> <p>8 MATERIAL DESCRIPTION: Description of material encountered. May include consistency, moisture, color, and other descriptive text.</p> </div> <div style="width: 48%;"> <p>9 Water Content, %: Water content of the soil sample, expressed as percentage of dry weight of sample.</p> <p>10 Dry Unit Weight, pcf: Dry weight per unit volume of soil sample measured in laboratory, in pounds per cubic foot.</p> <p>11 Percent Fines (-#200): The percent fines (soil passing the No. 200 Sieve) in the sample. WA indicates a Wash Sieve, SA indicates a Sieve Analysis.</p> <p>12 LL, %: Liquid Limit, expressed as a water content.</p> <p>13 PI, %: Plasticity Index, expressed as a water content.</p> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="width: 48%;"> <p>FIELD AND LABORATORY TEST ABBREVIATIONS</p> <p>CHEM: Chemical tests to assess corrosivity</p> <p>COMP: Compaction test</p> <p>CONS: One-dimensional consolidation test</p> <p>LL: Liquid Limit, percent</p> </div> <div style="width: 48%;"> <p>PI: Plasticity Index, percent</p> <p>SA: Sieve analysis (percent passing No. 200 Sieve)</p> <p>UC: Unconfined compressive strength test, Qu, in ksf</p> <p>WA: Wash sieve (percent passing No. 200 Sieve)</p> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="width: 48%;"> <p>MATERIAL GRAPHIC SYMBOLS</p> <div style="display: flex; align-items: center; margin-bottom: 10px;"> <p>Lean CLAY, CLAY w/SAND, SANDY CLAY (CL)</p> </div> </div> <div style="width: 48%;"> <div style="display: flex; align-items: center; margin-bottom: 10px;"> <p>Poorly graded GRAVEL (GP)</p> </div> <div style="display: flex; align-items: center;"> <p>SILT, SILT w/SAND, SANDY SILT (ML)</p> </div> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="width: 48%;"> <p>TYPICAL SAMPLER GRAPHIC SYMBOLS</p> <div style="display: flex; align-items: center; margin-bottom: 10px;"> <p>2.5-inch-OD Modified California w/ brass liners</p> </div> <div style="display: flex; align-items: center;"> <p>2-inch-OD unlined split spoon (SPT)</p> </div> </div> <div style="width: 48%;"> <p>OTHER GRAPHIC SYMBOLS</p> <div style="display: flex; align-items: center; margin-bottom: 10px;"> <p>Water level (at time of drilling, ATD)</p> </div> <div style="display: flex; align-items: center; margin-bottom: 10px;"> <p>Water level (after waiting)</p> </div> <div style="display: flex; align-items: center; margin-bottom: 10px;"> <p>Minor change in material properties within a stratum</p> </div> <div style="display: flex; align-items: center; margin-bottom: 10px;"> <p>Inferred/gradational contact between strata</p> </div> <div style="display: flex; align-items: center;"> <p>Queried contact between strata</p> </div> </div> </div> <div style="margin-top: 10px;"> <p>GENERAL NOTES</p> <p>1: Soil classifications are based on the Unified Soil Classification System. Descriptions and stratum lines are interpretive, and actual lithologic changes may be gradual. Field descriptions may have been modified to reflect results of lab tests.</p> <p>2: Descriptions on these logs apply only at the specific boring locations and at the time the borings were advanced. They are not warranted to be representative of subsurface conditions at other locations or times.</p> </div>												

Figure B-1

APPENDIX B

Laboratory Investigation

Summary of Laboratory Test Results

LABORATORY INVESTIGATION

The laboratory testing program was directed towards providing sufficient information for the determination of the engineering characteristics of the site soils so that the recommendations outlined in this report could be formulated.

Moisture content and dry unit weight tests were performed on relatively undisturbed soil samples in order to determine the consistency of the soil and moisture variation throughout the explored soil profile and to estimate the compressibility of the underlying soils.

Sieve analysis testing was performed to determine the fine grained content within a representative soil stratum.

The strength parameters of the foundation soils were obtained by evaluating the penetration resistance (blow counts) during sample recovery.

A summary of all laboratory test results is presented on Table B-I of this appendix and on the respective "Logs of Test Borings", Appendix A.

SUMMARY OF LABORATORY TESTS**TABLE B-1**

Sample Number	Depth (ft)	Dry Density (p.c.f.)	Moisture Content (% Dry Wt.)	Sieve Analysis (% passing No. 200 sieve)	Liquid Limit (%)	Plasticity Index
1-2	5.0	122.5	13.4	--	31	14
1-3	10.0	122.2	18.4	--	--	--
2-1	2.0	121.9	10.2	--	27	10
2-2	5.0	120.2	10.9	--	--	--
2-3	10.0	--	18.1	--	--	--
2-6	25.0	--	11.5	14.5	--	--
3-1	3.0	89.3	13.2	--	--	--
3-2	5.0	114.4	12.4	--	--	--
3-3	10.0	112.0	13.4	--	--	--
4-1	3.0	115.1	11.5	--	33	16
4-2	5.0	121.7	11.3	--	--	--
4-3	10.0	--	17.3	--	--	--
5-1	5.0	121.1	10.3	--	--	--
5-2	10.0	108.3	18.5	--	--	--
5-3	15.0	--	12.0	--	--	--

Appendix C

The Grading Specification

Guide Specifications for Rock Under Floor Slabs

THE GRADING SPECIFICATIONS

on

**Proposed Residential Development
18110 Monterey Road
Morgan Hill, California**

1. General Description

1.1 These specifications have been prepared for the grading and site development of the subject residential development. *Quantum Geotechnical Inc.*, hereinafter described as the Soil Engineer, should be consulted prior to any site work connected with site development to ensure compliance with these specifications.

1.2 The Soil Engineer should be notified at least two working days prior to any site clearing or grading operations on the property in order to observe the stripping of organically contaminated material and to coordinate the work with the grading contractor in the field.

1.3 This item shall consist of all clearing or grubbing, preparation of land to be filled, filling of the land, spreading, compaction and control of fill, and all subsidiary work necessary to complete the grading of the filled areas to conform with the lines, grades, and slopes as shown on the accepted plans. The Soil Engineer is not responsible for determining line, grade elevations, or slope gradients. The property owner, or his representative, shall designate the person or organizations who will be responsible for these items of work.

1.4 The contents of these specifications shall be integrated with the soil report of which they are a part, therefore, they shall not be used as a self-contained document.

2. Tests

The standard test used to define maximum densities of all compaction work shall be the ASTM D1557-12 Laboratory Test Procedure. All densities shall be expressed as a relative compaction in terms of the maximum dry density obtained in the laboratory by the foregoing standard procedure.

3. Clearing, Grubbing, and Preparing Areas To Be Filled

3.1 If encountered, all vegetable matter, trees, root systems, shrubs, debris, and organic topsoil shall be removed from all structural areas and areas to receive fill.

3.2 If encountered, any soil deemed soft or unsuitable by the Soil Engineer shall be removed. Any existing debris or excessively wet soils shall be excavated and removed as required by the Soil Engineer during grading.

3.3 All underground structures shall be removed from the site such as old foundations, abandoned pipe lines, septic tanks, and leach fields.

3.4 The final stripped excavation shall be approved by the Soil Engineer during construction and before further grading is started.

3.5 After the site has been cleared, stripped, excavated to the surface designated to receive fill, and scarified, it shall be disked or bladed until it is uniform and free from large clods. The native subgrade soils shall be moisture conditioned and compacted to the requirements as specified in the grading section of this report. Fill can then be placed to provide the desired finished grades. The contractor shall obtain the Soil Engineer's approval of subgrade compaction before any fill is placed.

4. Materials

4.1 All fill material shall be approved by the Soil Engineer. The material shall be a soil or soil-rock mixture which is free from organic matter or other deleterious substances. The fill material shall not contain rocks or lumps over 6 inches in greatest dimension and not more than 15% larger than 2-1/2 inches. Materials from the site below the stripping depth are suitable for use in fills provided the above requirements are met.

4.2 Materials existing on the site are suitable for use as compacted engineered fill after the removal of all debris and organic material. All fill soils shall be approved by the Soil Engineer in the field.

4.3 Should import material be required, it should be approved by the soil Engineer before it is brought to the site.

5. Placing, Spreading, and Compacting Fill Material

5.1 The fill materials shall be placed in uniform lifts of not more than 8 inches in uncompacted thickness. Each layer shall be spread evenly and shall be thoroughly blade mixed during the spreading to obtain uniformity of material in each layer. Before compaction begins, the fill shall be brought to a water content that will permit proper compaction by either (a) aerating the material if it is too wet, or (b) spraying the material with water if it is too dry.

5.2 After each layer has been placed, mixed, and spread evenly, either import material or native material shall be compacted to a relative compaction designated for engineered fill.

5.3 Compaction shall be by footed rollers or other types of acceptable compacting rollers. Rollers shall be of such design that they will be able to compact the fill to the specified density. Rolling shall be accomplished while the fill material is within the specified moisture content range. Rolling of each layer shall be continuous over its entire area and the roller shall make sufficient trips to ensure that the required density has been obtained. No ponding or jetting shall be permitted.

5.4 Field density tests shall be made in each compacted layer by the Soil Engineer in accordance with Laboratory Test Procedure ASTM D1556-15 or D6938-10. When footed rollers are used for compaction, the density tests shall be taken in the compacted material below the surface disturbed by the roller. When these tests indicate that the compaction requirements on any layer of fill, or portion thereof, has not been met, the particular layer, or portion thereof, shall be reworked until the compaction requirements have been met.

5.5 No soil shall be placed or compacted during periods of rain nor on ground which contains free water. Soil which has been soaked and wetted by rain or any other cause shall not be compacted until completely drained and until the moisture content is within the limits hereinbefore described or approved by the Soil Engineer. Approval by the Soil Engineer shall be obtained prior to continuing the grading operations.

6. Pavement

6.1 The proposed subgrade under pavement sections, native soil, and/or fill shall be compacted to a minimum relative compaction of 95% at 2% above optimum moisture content for a depth of 12 inches.

6.2 All aggregate base material placed subsequently should also be compacted to a minimum relative compaction of 95% based on the ASTM Test Procedure D1557-12. The construction of the pavement in the parking and traffic areas should conform to the requirements set forth by the latest Standard Specifications of the Department of Transportation of the State of California and/or City of Morgan Hill, Department of Public Works.

6.3 It is recommended that soils at the proposed subgrade level be tested for a pavement design after the preliminary grading is completed and the soils at the site design subgrade levels are known.

7. Utility Trench Backfill

7.1 The utility trenches extending under concrete slabs-on-grade shall be backfilled with native on-site soils or approved import materials and compacted to the requirements pertaining to the adjacent soil. No ponding or jetting will be permitted.

7.2 Utility trenches extending under all pavement areas shall be backfilled with native or approved import material and properly compacted to meet the requirements set forth by the City of Morgan Hill, Department of Public Works.*

7.3 Where any opening is made under or through the perimeter foundations for such items as utility lines and trenches, the openings must be resealed so that they are watertight to prevent the possible entrance of outside irrigation or rain water into the underneath portion of the structures.

8. Subsurface Line Removal

8.1 The methods of removal will be designated by the Soil Engineer in the field depending on the depth and location of the line. One of the following methods will be used.

8.2 Remove the pipe and fill and compact the soil in the trench according to the applicable portions of sections pertaining to compaction and utility backfill.

8.3 The pipe shall be crushed in the trench. The trench shall then be filled and compacted according to the applicable portions of Section 5.

8.4 Cap the ends of the line with concrete to prevent entrance of water. The length of the cap shall not be less than 5 feet. The concrete mix shall have a minimum shrinkage.

9. Unusual Conditions

9.1 In the event that any unusual conditions not covered by the special provisions are encountered during the grading operations, the Soil Engineer shall be immediately notified for additional recommendations.

10. General Requirements**Dust Control**

10.1 The contractor shall conduct all grading operations in such a manner as to preclude windblown dirt and dust and related damage to neighboring properties. The means of dust control shall be left to the discretion of the contractor and he shall assume liability for claims related to windblown material.

GUIDE SPECIFICATIONS FOR ROCK UNDER FLOOR SLABS

Definition

Graded gravel or crushed rock for use under slabs-on-grade shall consist of a minimum thickness of mineral aggregate placed in accordance with these specifications and in conformance with the dimensions shown on the plans. The minimum thickness is specified in the accompanying report.

Material

The mineral aggregate shall consist of broken stone, crushed or uncrushed gravel, quarry waste, or a combination thereof. The aggregate shall be free from deleterious substances. It shall be of such quality that the absorption of water in a saturated dry condition does not exceed 3% of the oven dry weight of the sample.

Gradation

The mineral aggregate shall be of such size that the percentage composition by dry weight, as determined by laboratory sieves (U.S. Sieves) will conform to the following gradation:

<u>Sieve Size</u>	<u>Percentage Passing</u>
$\frac{3}{4}$ "	90-100
No. 4	25-60
No. 8	18-45
No. 200	0-3

Placing

Subgrade, upon which gravel or crushed rock is to be placed, shall be prepared as outlined in the accompanying soil report.

Appendix E

Phase I and Phase II Environmental Site Assessment

DEVELOPMENT
SERVICES

AUG 30 2019

CITY OF MORGAN HILL

**Phase I and II Environmental Site
Assessment, Morgan Hill D
18110 Monterey Drive
Morgan Hill, California**



Prepared for:
City Ventures
444 Spear Street, Suite 200
San Francisco, California 94105

Prepared by:
Stantec Consulting Services Inc.
25864-F Business Center Drive
Redlands, California 92374

Project No.: 185804012

September 11, 2017

Sign-off Sheet and Signatures of Environmental Professionals

This Phase I and II Environmental Site Assessment was prepared by Stantec Consulting Services Inc. (Stantec) for City Ventures. The material in it reflects Stantec's best judgment in light of the information available to it at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. Stantec accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

All information, conclusions, and recommendations provided by Stantec in this document regarding the Phase I ESA have been prepared under the supervision of and reviewed by the professionals whose signatures appear below.

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in § 312.10 of 40 CFR 312. I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the Property. I have developed and performed all the appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Prepared by


(signature)


Matt Sapp
Staff Scientist

Reviewed by


(signature)

Alicia Jansen
Associate Scientist

Approved by


(signature)

Kyle Emerson, C.E.G. 1271
Managing Principal Geologist



PHASE I AND II ENVIRONMENTAL SITE ASSESSMENT,

Table of Contents

ABBREVIATIONS	1
1.0 SUMMARY	1.1
2.0 INTRODUCTION	2.1
2.1 PROPERTY DESCRIPTION	2.2
2.2 SPECIAL TERMS, CONDITIONS, AND SIGNIFICANT ASSUMPTIONS	2.2
2.3 EXCEPTIONS AND LIMITING CONDITIONS	2.3
2.4 PERSONNEL QUALIFICATIONS	2.3
3.0 USER-PROVIDED INFORMATION	3.1
3.1 SPECIALIZED KNOWLEDGE OR EXPERIENCE	3.1
3.2 PURCHASE PRICE VS. PROPERTY VALUE	3.2
4.0 RECORDS REVIEW	4.1
4.1 PHYSICAL SETTING	4.1
4.1.1 Property Topography and Surface Water Flow	4.1
4.1.2 Regional and Property Geology	4.1
4.1.3 Regional and Property Hydrogeology	4.2
4.2 FEDERAL, STATE AND TRIBAL ENVIRONMENTAL RECORDS	4.2
4.2.1 Listings for Property	4.2
4.2.2 Listings for Nearby Sites with Potential to Impact Property	4.2
4.3 LOCAL/REGIONAL ENVIRONMENTAL RECORDS	4.3
4.3.1 Santa Clara County Department of Environmental Health Services	4.4
4.3.2 County of Santa Clara Fire Department	4.4
4.3.3 Local Building and/or Planning Department Records	4.5
4.3.4 Regional Water Quality Control Board, Region 3	4.5
4.4 HISTORICAL RECORDS REVIEW	4.5
4.4.1 Land Title Records/Deeds	4.5
4.4.2 Aerial Photographs	4.5
4.4.3 City Directories	4.6
4.4.4 Historical Fire Insurance Maps	4.7
4.4.5 Historical Topographic Maps	4.8
4.4.6 Other Historical Sources	4.8
5.0 SITE RECONNAISSANCE	5.1
5.1 SITE RECONNAISSANCE METHODOLOGY	5.1
5.2 GENERAL DESCRIPTION	5.1
5.3 HAZARDOUS SUBSTANCES AND PETROLEUM PRODUCTS	5.2
5.4 INTERIOR OBSERVATIONS	5.2
5.5 EXTERIOR OBSERVATIONS	5.2
5.6 UNDERGROUND STORAGE TANKS/STRUCTURES	5.3
5.7 ABOVEGROUND STORAGE TANKS	5.3
5.8 ADJOINING PROPERTIES	5.3
5.8.1 Current Uses of Adjoining Properties	5.3
5.8.2 Observed Evidence of Past Uses of Adjoining Properties	5.4

PHASE I AND II ENVIRONMENTAL SITE ASSESSMENT,

5.8.3	Pits, Ponds or Lagoons on Adjoining Properties.....	5.4
5.9	OBSERVED PHYSICAL SETTING	5.4
6.0	POTENTIAL FOR VAPOR ENCROACHMENT.....	6.1
7.0	INTERVIEWS.....	7.1
8.0	LIMITED SUBSURFACE INVESTIGATION.....	8.1
8.1	PRE-ASSESSMENT ACTIVITIES.....	8.1
8.2	FIELD INVESTIGATION	8.1
8.3	SAMPLING PROCEDURES	8.2
8.3.1	Hand Auger Soil Sampling	8.2
8.4	BORING ABANDONMENT PROCEDURES	8.2
8.5	DECONTAMINATION PROCEDURES	8.2
8.6	RESULTS	8.2
9.0	EVALUATION.....	9.1
9.1	FINDINGS AND OPINIONS	9.1
9.2	DATA GAPS	9.2
9.3	CONCLUSIONS	9.2
10.0	NON-SCOPE CONSIDERATIONS	10.1
11.0	REFERENCES.....	11.1

LIST OF FIGURES

Figure 1 Site Location Map
Figure 2 Site Map

LIST OF TABLES

Table 1 Summary of Soil Analytical Results - Pesticides, Arsenic, and Lead

LIST OF APPENDICES

APPENDIX A	PHOTOGRAPHS OF THE PROPERTY AND VICINITY
APPENDIX B	STANTEC RESUMES
APPENDIX C	USER PROVIDED DOCUMENTS
APPENDIX D	ENVIRONMENTAL AGENCY DATABASE SEARCH REPORT
APPENDIX E	AGENCY RECORDS
APPENDIX F	HISTORICAL DOCUMENTS
APPENDIX G	LABORATORY ANALYTICAL REPORT

PHASE I AND II ENVIRONMENTAL SITE ASSESSMENT,

Abbreviations

AAI	All Appropriate Inquiry
ACM	Asbestos containing material
AST	Aboveground Storage Tank
ASTM	American Society for Testing and Materials
BER	Business Environmental Risk
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulation
CREC	Controlled Recognized Environmental Conditions
CWA	Clean Water Act
ELUC	Environmental Land Use Control
EP	Environmental Professional
EPA	Environmental Protection Agency
ESA	Environmental Site Assessment
FEMA	Federal Emergency Management Agency
ft msl	Feet above mean sea level
HREC	Historical Recognized Environmental Conditions
HWMU	Hazardous Waste Management Unit
LBP	Lead-based Paint
LUST	Leaking Underground Storage Tank
NESHAP	National Emissions Standard for Hazardous Air Pollutants
PAHs	Polynuclear Aromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
pVEC	Potential Vapor Encroachment Condition
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Conditions
SWMU	Solid Waste Management Unit
TSCA	Toxic Substance Control Act
USDA	United States Department of Agriculture
USGS	United States Geological Survey
UST	Underground Storage Tank
VOCs	Volatile Organic Compounds

PHASE I AND II ENVIRONMENTAL SITE ASSESSMENT,

SUMMARY

September 11, 2017

1.0 SUMMARY

Stantec has completed a Phase I Environmental Site Assessment (ESA) report of the property located at 18110 Monterey Drive in Morgan Hill, California (the "Property" or the "Site"), on behalf of City Ventures (the "Client"). The work was performed in conformance with the requirements of American Society for Testing and Materials (ASTM) Designation E 1527-13 and All Appropriate Inquiries (AAI) Final Rule 40 CFR Part 312, except as may have been modified by the scope of work, and terms and conditions, requested by the Client. Any exceptions to, or deletions from, the ASTM practice are described in Section 2.3.

The Property consists of approximately 6 acre of land located at the northeast corner of Old Monterey Road and Monterey Road in the City of Morgan Hill, California. Surrounding properties are a mix of residential structures, vacant land and a rail line to the east. A Property location map is illustrated on Figure 1. A Property map illustrating the main features of the Property is provided as Figure 2. Photographs taken during the site reconnaissance visit are provided in Appendix A.

The Property is composed of vacant land. A mobile home and several parked trailers and a motor home are located along the southern boundary of the Site. The remainder of the Property has been tiled for weed control or is native vegetation. An active rail line borders the Property's eastern boundary. Figure 2 provides a photographic layout of the property.

During the Phase I Environmental Site Assessment, Stantec identified the following issues of concern:

Historical Agricultural Use. Stantec's review of historic aerial photographs indicated that the Property was used for agricultural purposes (*i.e.* dry land farmed) from the mid-1950s up to the 1990s. Due to the potential for residual pesticides or heavy metals associated with historical herbicide application to be present above regulatory screening levels, human health risk criteria or California hazardous waste levels, Stantec performed a Phase II subsurface investigation to sample and analyze soil at the Property, the results of which are described below.

Adjacent Rail Line. The subject Property is bounded along its eastern side with an active rail line. The rail line has been present at that location prior to 1950 (earliest aerial photograph available). The application of metal containing herbicides are common along rail lines for weed control. Therefore, Stantec performed shallow soil sampling to evaluate if lead or arsenic exist in the Site soils above risk based or hazardous waste screening levels, the results of which investigation are discussed below.

Stantec completed the field work for the recommended Phase II ESA on August 28, 2017. The Phase II ESA included collection of shallow (one foot in depth) soil samples across the Property to assess the presence of residual pesticides and the heavy metals arsenic and lead, which are commonly associated with herbicide application. Stantec concludes that this scope of work was sufficient for evaluating the issues identified above.



PHASE I AND II ENVIRONMENTAL SITE ASSESSMENT,

SUMMARY

September 11, 2017

Soils encountered during this investigation generally consisted of silty sand. No hydrocarbon odors or staining was observed in any of the boreholes advanced during this investigation.

The Results of the Limited Subsurface Investigation

Stantec completed a limited subsurface investigation to address historical agricultural use and the adjacent rail line on the Property. The results of this investigation are summarized as follows:

A total of six (6) shallow soil samples were collected throughout the Property as shown on figure 2. A soil sample was collected from a depth of one foot at each location. Each soil sample was analyzed for the presence of organochlorine pesticides and the heavy metals (arsenic and lead) commonly associated with herbicide application. Organochlorine pesticides were detected in a single soil sample (HA-2-1) at concentrations below residential screening criteria. Based on these results, pesticides do not appear to represent an environmental concern to the Site. Stantec recommends no further investigation regarding this issue.

With respect to heavy metals, lead was detected in five (5) of the six (6) soil samples at concentrations within naturally occurring background levels. Arsenic was detected in all six (6) soil samples within naturally occurring background levels. Based on these sample results, lead and arsenic do not represent an environmental concern to the Site and recommends no further investigation regarding this issue.

Conclusions

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM E-1527-13 (and Final Rule 40 CFR Part 312 et seq.) with respect to the Site. Any exceptions to, or deletions from, this practice are described in Section 2.3 of this report. This assessment has revealed no evidence of recognized environmental conditions in connection with the Property. Stantec recommends no further investigation regarding the environmental condition of the Property.

The following non-ASTM issues were identified with the Property:

- Due to the Property structure being constructed circa 1960s, the presence of lead-based paint and asbestos containing materials (ACM) is considered likely. Therefore, Stantec recommends conducting a comprehensive asbestos and lead based paint survey prior to the disturbance or demolition of the structures in accordance with local and federal regulations and that any identified ACM be abated accordingly.

PHASE I AND II ENVIRONMENTAL SITE ASSESSMENT,

INTRODUCTION

September 11, 2017

2.0 INTRODUCTION

The objective of this Phase I ESA was to perform appropriate inquiry into the past ownership and uses of the Property consistent with good commercial or customary practice as outlined by the ASTM in "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process", Designation E1527-13. The purpose of this Phase I ESA was to identify adverse environmental conditions including recognized environmental conditions ("RECs") of the Property.

The ASTM E1527-13 standard indicates that the purpose of the Phase I ESA is to identify RECs, including historical recognized environmental conditions ("HRECs"), and controlled recognized environmental conditions ("CRECs") that may exist at a property. The term "recognized environmental conditions" means the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property:

- (1) Due to any 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.

ASTM defines a "HREC" as a REC that has occurred in connection with the property, but has been addressed to the satisfaction of the applicable regulatory authority and meets unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls). Before calling the past release a HREC, the environmental professional must determine whether the past release is a REC when the current Phase I ESA is conducted (for example, if there has been a change in the regulations). If the EP considers the past release to be a REC at the time the Phase I ESA is conducted, the condition shall be included in the conclusions section of the report as a REC.

ASTM defines a "CREC" as a REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), but with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls).

De minimis conditions are not RECs. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. As indicated, the term REC does not include *de minimis* conditions, which generally do not present a material risk to human health and would not likely be subject to enforcement action if brought to the attention of governmental agencies.

PHASE I AND II ENVIRONMENTAL SITE ASSESSMENT,

INTRODUCTION

September 11, 2017

This ESA was conducted in accordance with the Master Environmental Consulting Services Agreement between Stantec and to City Ventures (the "MSA"). In the event of any conflict between the terms and conditions of this report and the terms and conditions of the MSA, the MSA shall control. The scope of work conducted during this Phase I ESA consisted of a visual reconnaissance of the Property, interviews with key individuals, and review of reasonably ascertainable documents. The scope of work did not include an assessment for environmental regulatory compliance of any facility ever operated at the Property (past or present), or sampling and analyzing of environmental media. Stantec was not contracted to perform any independent evaluation of the purchase or lease price of the Property and its relationship to current fair market value. The conclusions presented in this ESA Report are professional opinions based on data described herein. The opinions are subject to the limitations described in Section 2.3.

ASTM E1527-13 notes that the availability of record information varies from source to source. The User or Environmental Professional is not obligated to identify, obtain, or review every possible source that might exist with respect to a property. Instead, ASTM identifies record information that is reasonably ascertainable from standard sources. "Reasonably ascertainable" means:

- (1) Information that is publicly available;
- (2) Information that is obtainable from its source within reasonable time and cost constraints; and
- (3) Information that is practicably reviewable.

2.1 PROPERTY DESCRIPTION

The Site consists of a block along Depot Street between East Second Street and East Third Street, within the City of Morgan Hill, Santa Clara County, California. The Property is a redevelopment project and all former structures were recently demolished in preparation of grading activities. A small asphalt area remains in the north-northwestern portion of the Property. A Property location map is illustrated on Figure 1. A Property map illustrating the main features of the Property is provided as Figure 2. Photographs taken during the site reconnaissance visit are provided in Appendix A.

2.2 SPECIAL TERMS, CONDITIONS, AND SIGNIFICANT ASSUMPTIONS

It is assumed that the purpose of this Phase I ESA is to qualify the User, in part, for landowner protection to CERCLA liability and to facilitate the purchase of the Property. The possible contaminants of concern considered in this assessment include without limitation those hazardous compounds listed under CERCLA, petroleum products, pesticides and heavy metals.

There were no special terms, conditions, or significant assumptions associated with the Phase I ESA.

PHASE I AND II ENVIRONMENTAL SITE ASSESSMENT,

INTRODUCTION

September 11, 2017

2.3 EXCEPTIONS AND LIMITING CONDITIONS

This report documents work that was performed in accordance with the MSA. No other representations, warranties or guarantees are made concerning the accuracy or completeness of the data or conclusions contained within this report.

This report provides an evaluation of specified environmental conditions associated with the identified property that was assessed at the time the work was conducted and is based on information obtained by and/or provided to Stantec at that time. 40 CFR 312.20(f)(2) requires that the Environmental Professional evaluate the thoroughness and reliability of provided information. Stantec can neither warrant nor guarantee such thoroughness or reliability, however.

Conclusions made within this report consist of Stantec's professional opinion as of the time of the preparation of this report, and are based solely on the scope of work described in the report, the limited data available and the results of the work. They are not a certification of the property's environmental condition. Project Specific limiting conditions are provided in Section 2.2.

The conclusions are based on the site conditions encountered by Stantec at the time of the work. Accordingly, additional studies and actions may be required. The identification of non-environmental risks to structures or people on the Property is beyond the scope of this assessment.

Stantec specifically disclaims any responsibility to update the conclusions in this report if new or different information later becomes available or if the conditions or activities on the property subsequently change. In the event of any conflict between the terms and conditions of this report and the terms and conditions of the MSA, the MSA shall control.

2.4 PERSONNEL QUALIFICATIONS

This Phase I ESA was conducted by, or under the supervision of, an individual that meets the ASTM definition of an Environmental Professional (EP). The credentials of the EP and other key Stantec personnel involved in conducting this Phase I ESA are provided in Appendix B.

PHASE I AND II ENVIRONMENTAL SITE ASSESSMENT,

USER-PROVIDED INFORMATION
September 11, 2017

3.0 USER-PROVIDED INFORMATION

ASTM E1527-13 describes responsibilities of the User to complete certain tasks in connection with the performance of "All Appropriate Inquiries" into the Property. The ASTM standard requires that the Environmental Professional request information from the User on the results of those tasks because that information can assist in the identification of RECs, CRECs, HRECs, or *de minimis* conditions in connection with the Property. Towards that end, Stantec requested that the User provide the following documents and information:

Description of Information	Provided (Yes / No)	Description and/or Key Findings
User Questionnaire	Yes	The user is aware of a former underground storage tank (UST) on the Property.
Environmental Liens or Activity Use Limitations	Yes	No environmental liens were identified in the title report provided by City Ventures.
Previous Environmental Permits or Reports Provided by User	No	No information was provided
Purpose of the Phase I ESA	Yes	Environmental due diligence.

Stantec forwarded the ASTM recommended User Questionnaire to Mr. Jason Bernstein, Development Manager with City Ventures. The completed User Questionnaire returned to us by Mr. Bernstein is included in Appendix C. The significant information provided by Mr. Bernstein is summarized below.

1. Information on Environmental Cleanup Liens on Site? **No**
2. Information on Site Activity or Use Limitations (including Institutional and Engineering Controls)? **None**
3. Specialized knowledge or experience of the User: **No**
4. Does the purchase price being paid for this property reasonably reflect the fair market value of the property? **Yes**
5. Commonly known or reasonably ascertainable information about the Site? **Vacant land with a single mobile home on property.**
6. The degree of obviousness or the presence or likely presence of contamination at the property, and the ability to detect the contamination by appropriate investigation? **No**

3.1 SPECIALIZED KNOWLEDGE OR EXPERIENCE

The Federal AAI rule (40 CFR §312.28) and ASTM E1527-13 require that all appropriate inquiry must take into account relevant and applicable specialized knowledge and experience on the part of the User regarding the Site, the area surrounding the Site, the conditions of adjoining properties, and any other experience relevant to identifying RECs on the Site.



PHASE I AND II ENVIRONMENTAL SITE ASSESSMENT,

USER-PROVIDED INFORMATION

September 11, 2017

Mr. Bernstein does not have any specialized knowledge or experience with the Property.

3.2 PURCHASE PRICE VS. PROPERTY VALUE

The Federal AAI rule (40 CFR §312.29) and ASTM E1527-13 require that persons seeking defense to or protection from liability under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) must take into account the relationship of the purchase price to the fair market value of the property if it were not contaminated to assess whether or not the differential is due to the presence of releases or threatened releases of hazardous substances. This portion of the inquiry is the responsibility of the User, and the User has the option of sharing or not sharing this information with the EP performing the Phase I ESA.

Stantec has not performed an independent evaluation of the purchase price of the property and its relationship to fair market value. Stantec submitted a written questionnaire to the User (identified in Section 3.14) inquiring about the User's knowledge regarding the relationship of the purchase price to the fair market value of the property if it were not contaminated.

Mr. Bernstein believes that the purchase price of the Site reasonably reflects the fair market value and has not been reduced due to any environmental issues.

PHASE I AND II ENVIRONMENTAL SITE ASSESSMENT,

RECORDS REVIEW
September 11, 2017

4.0 RECORDS REVIEW

The objective of consulting historical sources of information is to develop the history of the Property and surrounding area, in order to evaluate if past uses may have resulted in RECs. Physical setting records are evaluated to determine if the physical setting may have contributed to adverse environmental conditions in connection with the Property. During the review of historical records, Stantec attempted to identify uses of the Property from the present to the Property's first developed use. Stantec's research included the reasonably ascertainable and useful records described in this section.

4.1 PHYSICAL SETTING

A summary of the physical setting of the Property is provided in the table below with additional details in the following subsections

Topography:	The Property is at an elevation of approximately 357 feet above mean sea level. The regional topographic gradient is to the northeast (USGS, 1955).
Soil/Bedrock Data:	San Ysidro loam underlain with clay / sandy clay loam.
Estimated Depth to Groundwater/ Estimated Direction of Gradient:	According to information located in the CRWQCB's Geotracker website, groundwater in this area is estimated to be between 15 and 45 feet bgs as based on facilities located in the vicinity (CRWQCB, 2011) and groundwater flow direction in the area is expected to follow topography and flow to the northeast.
<i>Note: Site-specific groundwater direction and depth can only be determined by conducting site-specific testing, which Stantec has not conducted.</i>	

4.1.1 Property Topography and Surface Water Flow

The Site is at an elevation of approximately 357 feet above mean sea level. Based on the topography, surface water on the Property flows to the rear of the property toward the rail line and toward the west to Monterey Drive.

4.1.2 Regional and Property Geology

The Site is located in Santa Clara County. The area is located within the Coast Ranges Geomorphic Province, which includes northwest-southeast trending mountain ranges and valleys that have been developed by the San Andreas Fault system (California Geological Survey [CGS], 2002). The Site sits in a valley between the Santa Cruz Mountains to the west and the Diablo Range to the east. The stratigraphy underlying the Site consists primarily of recent-age alluvium (CDMG, 1961).

PHASE I AND II ENVIRONMENTAL SITE ASSESSMENT,

RECORDS REVIEW
September 11, 2017

The closest mapped recently active fault is the Calaveras Fault located approximately 4 miles northeast (CGS, 2011). According to official maps of California, the Site is not located within an Alquist-Priolo (AP) Earthquake Fault Zone boundary (CDMG, 2000).

4.1.3 Regional and Property Hydrogeology

The Site is located within the South Santa Clara Valley Basin (305.30), within the Pajaro River Hydrologic Unit (305.00) (California Regional Water Quality Control Board [CRWQCB], 1995). According to information located in the CRWQCB's Geotracker website, groundwater in this area is estimated to be between 15 and 45 feet bgs as based on facilities located in the vicinity (CRWQCB, 2011) and groundwater flow direction in the area is expected to follow topography and flow to the northeast.

4.2 FEDERAL, STATE AND TRIBAL ENVIRONMENTAL RECORDS

A regulatory agency database search report was obtained from Environmental Data Resources, a third-party environmental database search firm. A complete copy of the database search report, including the date the report was prepared, the date the information was last updated, and the definition of databases searched, is provided in Appendix D.

Stantec evaluated the information listed within the database relative to potential impact to the Property, assessing the potential for impacts based in part on the physical setting. As part of this process, inferences have been made regarding the likely groundwater flow direction at or near the Property. As described in 4.1.3, the inferred shallow groundwater flow direction is likely to be towards the northeast. Observations about the Property and surrounding properties made during the Property reconnaissance are provided in more detail in Section 5.

4.2.1 Listings for Property

The Site addresses are not listed in any environmental databases.

4.2.2 Listings for Nearby Sites with Potential to Impact Property

Stantec assessed data presented in the environmental agency database search report to evaluate the potential for conditions to pose a REC, CREC, or HREC for the Property.

Based on this evaluation, the following individual facilities were identified as the most likely potential sources of impact to the Property. The basis for why each of the following listed databases creates or does not create a REC for the property is also provided.

Listed Facility Name/Address	Database Listing	Distance/Direction from Property	REC? (YES / NO)
Abbott Services, 18055 Monterey Morgan Hill, CA 95037	Hist Auto	147 feet south	No

PHASE I AND II ENVIRONMENTAL SITE ASSESSMENT,

RECORDS REVIEW
September 11, 2017

Listed Facility Name/Address	Database Listing	Distance/Direction from Property	REC? (YES / NO)
The site is listed as an historic gasoline service station. The property is located across Monterey Drive and there are no reported releases from this facility. Stantec does not consider this facility to represent an environmental concern to the Property.			
Roccis Body Shop, 17995 N. Monterey Morgan Hill, CA 95037	Hist Auto	467 feet south	No
The site is listed as an historic gasoline service station. The property is located across Monterey Drive and there are no reported releases from this facility. Stantec does not consider this facility to represent an environmental concern to the Property.			
Velodyne Acoustics Inc., 345 Digital Drive, Morgan Hill, CA 95037	CUPA Listings, Haznet	523 feet East-southeast	No
This facility is listed as having chemicals onsite but no releases or violations are reported. Because of the lack of reported releases, Stantec does not consider this facility to represent an environmental concern to the Property.			
Tony Gaither Auto Repair 17995 N. Monterey Road Morgan Hill, CA 95037	Hist Auto, hist Lust, Lust	545 feet east southeast	No
The site is listed as an historic automotive repair facility. The property is had a reported UST release that has been closed. Given the closed status and the distance from the Subject Site, Stantec does not consider this facility to represent an environmental concern to the Property.			

The remaining listings in the database search report provided in Appendix D do not constitute a REC for the Property.

4.3 LOCAL/REGIONAL ENVIRONMENTAL RECORDS

Stantec checked the following sources to obtain information pertaining to Property use and/or indications of RECs in connection with the Property:

PHASE I AND II ENVIRONMENTAL SITE ASSESSMENT,

RECORDS REVIEW
September 11, 2017

4.3.1 Santa Clara County Department of Environmental Health Services

Agency Name Contact Information	Finding
Santa Clara County Department of Environmental Health Services http://lustop.sccgov.org/ September 7, 2017	Stantec submitted a records request to the Santa Clara County Department of Environmental Health (SCCDEH) to research whether any documents were on file for the addresses for the Site. According to the website, all documents submitted to the SCCDEH are uploaded to the Regional Water Quality Control Board's online database Geotracker. Additionally, according to an email dated September 9, 2017 from Ms. Somira Pech there are no records for the Property. A copy of the correspondence is provided in Appendix E. There are no records listed for the Property address on Geotracker.

4.3.2 County of Santa Clara Fire Department

Agency Name Contact Information	Finding
Santa Clara County Fire Department 14700 Winchester Boulevard Los Gatos, California Phone (408) 378-4010	On August 7, 2017, Stantec submitted a file review request to the Santa Clara County Fire Department. At the time of this report, Stantec has not received a response from the City of Morgan Hill regarding the request. Should any pertinent files become available, Stantec will review the files and provide an addendum to the Phase I ESA. Based on its review of other sources, however, Stantec considers it unlikely that any records from this agency would alter the conclusions or recommendations of this report. The lack of this information does not represent a significant data gap.

PHASE I AND II ENVIRONMENTAL SITE ASSESSMENT,

RECORDS REVIEW
September 11, 2017

4.3.3 Local Building and/or Planning Department Records

Agency Name, Contact Information	Findings
City of Morgan Hill Community Development 17575 Peak Avenue Morgan Hill, CA 95037	On August 7, 2017, Stantec submitted a file review request to the City of Morgan Hill Community Development. At the time of this report, Stantec has not received a response from the City of Morgan Hill regarding the request. Should any pertinent files become available, Stantec will review the files and provide an addendum to the Phase I ESA. Based on its review of other sources, however, Stantec considers it unlikely that any records from this agency would alter the conclusions or recommendations of this report. The lack of this information does not represent a significant data gap.

4.3.4 Regional Water Quality Control Board, Region 3

Agency Name, Contact Information	Findings
Central Coast Regional Water Quality Control Board (RWQCB) Online database: http://geotracker.waterboards.ca.gov/search	Stantec searched for available records for the Property on the RWQCB's online database Geotracker. No records were listed for the Property address.

4.4 HISTORICAL RECORDS REVIEW

4.4.1 Land Title Records/Deeds

No environmental liens were identified in the title report provided by City Ventures.

4.4.2 Aerial Photographs

Stantec reviewed historical aerial photographs provided by EDR. The general type of activity on a property and land use changes can often be discerned from the type and layout of structures visible in the photographs. However, specific elements of a facility's operation usually cannot be discerned from aerial photographs alone. The following table summarizes Stantec's observations of the reviewed historical aerial photographs. Stantec had identified two potential issues based on its review of the historical aerial photographs as discussed below (and which were addressed by the Phase II subsurface investigation performed by Stantec). The historical aerial photographs are presented in Appendix F.

Year	Scale	Observations, Property and Adjoining Properties
1939	1:500	The Property is developed with a single structure in the southeastern corner of the Site. Railroad tracks are shown just east of the Property. The entire area east of the railroad tracks is agricultural, as well as to the north, west

PHASE I AND II ENVIRONMENTAL SITE ASSESSMENT,

RECORDS REVIEW
September 11, 2017

Year	Scale	Observations, Property and Adjoining Properties
		and south of the Property. The Property appears to have been plowed, but not in agricultural use at that time.
1940	1:500	The Property and vicinity appear the similar as the previous photograph. Except a group of trees appear in row, like citrus in the eastern central portion of the site.
1949	1:500	The Property is completely vacant, with no signs of use. The vicinity appears to be similar as the previous photograph.
1950	1:500	The Property and vicinity appear the similar as the previous photograph, except a structure is not present in the southeastern portion of the site.
1956, 1963, 1968, 1973	1:500	The Property and surrounding area appear similar to the previous photograph. There is a building located across the rail line to the east of the Site and farm related activities noticed in that direction. The Site appears to be farmed given the plow markings.
1982; 1998; 2005; 2006; 2009; 2010, and 2012	1:500	The Property appears similar to previous photographs. The surrounding properties appear to be increasingly residential to the north, west, and south. The properties to the east contain increasing commercial structures and vacant fields.

Name of aerial photograph source: EDR, USGS, DOQQ, USDA, NAIP

The historic aerial photographs depict agricultural use of the Site throughout its history dating back to the 1930s and as well as the surrounding properties. In addition, the rail line appears on the photographs dating back prior to the 1930s. To assess these potential environmental issues, Stantec performed a Phase II subsurface investigation, the results of which are discussed below.

4.4.3 City Directories

Stantec retained a third party to research available reverse city directories for the Property, in approximately five year intervals. No RECs were noted during our review of the city directories. The City Directory Report is presented in Appendix F.

The following is a summary of Stantec's review of the city directory listings:

Subject/Adjoining Property	Year	Listed Occupants
Subject Property – no listing	2013	18110: not listed 18055: Acacia mobile home Park 18060: Occupant Unknown 18105: Ron Perry 18502 : Occupant Unknown 18502: Occupant Unknown 18510: Occupant Unknown

PHASE I AND II ENVIRONMENTAL SITE ASSESSMENT,

RECORDS REVIEW
September 11, 2017

Subject/Adjoining Property	Year	Listed Occupants
Subject Property – Multiple Addresses	2008	18110: Not listed 18025 Axion & Associates Investigating 18055: Acacia mobile home Park 18060: Occupant Unknown
Subject Property – Multiple Addresses	2000	18110: Not listed 18025 Axion & Associates Investigating 18055: Acacia mobile home Park 18060: Nancy Sutter 18625: Guillermo Andrade
Subject Property – Multiple Addresses	1999	18110: Not listed 18025 overland Plaza self storage 18055: Acacia mobile home Park 18105: Carolyn Perry 18625: El Capri Restaurant
Subject Property – Multiple Addresses	1995	18110: Not listed 18025 overland Plaza self storage 18055: Acacia mobile home Park 18105: Carolyn Perry 18625: El Capri Restaurant
Subject Property – Multiple Addresses	1992	18110: Not listed 18025 overland Plaza self storage 18055: Acacia mobile home Park 18455: S G Mayne Termite 18625: El Capri Restaurant

Name of city directories and source: EDR, Haines Criss-Cross Directory

4.4.4 Historical Fire Insurance Maps

Fire insurance maps were developed for use by insurance companies to depict facilities, properties, and their uses for many locations throughout the United States. These maps provide information on the history of prior land use and are useful in assessing whether there may be potential environmental contamination on or near the Property. These maps, which have been periodically updated since the late 19th century, often provide valuable insight into historical Property uses.

PHASE I AND II ENVIRONMENTAL SITE ASSESSMENT,

RECORDS REVIEW
September 11, 2017

Stantec contracted with a third party to search for copies of historical fire insurance maps covering the subject and immediately adjacent properties. The Sanborn® Map Search Report is presented in Appendix F. Historical Sanborn Fire Insurance Maps were not available for the site.

4.4.5 Historical Topographic Maps

Stantec reviewed historical USGS 7.5-Minute Topographic Maps of the Morgan Hill, California Quadrangle (scale 1:24,000) and Mount Madonna, California Quadrangle (scale 1:24,000) to help identify past Property usage and areas of potential environmental concern.

No RECs were noted during our review of the topographic maps. Copies of the historical maps are provided in Appendix F. The following table summarizes the maps reviewed and our observations.

Year	Scale	Observations, Property and Adjoining Properties
1917	1:62500	The site vicinity appears to be generally undeveloped, but no site detail is visible
1939/ 1955 / 1968 / 1973 / 1980	1:24000	The Site and vicinity appear largely undeveloped and used for agricultural purposes. The railroad tracks are shown just to the east of the Site.
1980	1:24000	The Property and surrounding vicinity appear similar to the previous topographic map with a decrease in agricultural land east of the railroad tracks.

Name of maps and source: EDR

4.4.6 Other Historical Sources

None were identified.

PHASE I AND II ENVIRONMENTAL SITE ASSESSMENT,

SITE RECONNAISSANCE
September 11, 2017

5.0 SITE RECONNAISSANCE

A visit to the Property and its vicinity was conducted by Mr. Mathew Sapp on August 28, 2017. Access to the Property was provided by Mr. Jason Bernstein of City Ventures. Stantec was not accompanied during the Property visit. Figure 2 provides information about the Property and adjoining properties and the location of potential areas of environmental concern. Photographs collected during the Property visit are included in Appendix A.

5.1 SITE RECONNAISSANCE METHODOLOGY

The Property reconnaissance focused on observation of current conditions and observable indications of past uses and conditions that may indicate the presence of RECs. The Property reconnaissance was conducted on foot and Stantec utilized the following methodology to observe the Property:

- Traverse the outer Property boundary.
- Traverse transects across the Property.

Weather conditions during the visit to the Property were clear and sunny. There were no weather related property access restrictions encountered during the reconnaissance visit.

5.2 GENERAL DESCRIPTION

Property and Area Description:	The Property consists of approximately 6 acres of land located at the northeast corner of Old Monterey Road and Monterey road in the City of Morgan Hill, California. Surrounding properties are a mix of residential development to the north, west, and south of the site with some vacant land. The property to the east across the rail road tracks is increasing in commercial development.
Property Operations:	Vacant land with some weed control disking evident. A single mobile home is present in the southeast corner of the Site. Two RVs are parked near the home. No other site structures were noted.
Structures, Roads, Other Improvements:	None.
Property Size (acres):	Approximately 6 acre
Estimated % of Property Covered by Buildings and/or Pavement:	<5%
Observed Current Property Use/Operations:	Vacant land with a single mobile home on the property.
Observed Evidence of Past Property Use(s):	None.

PHASE I AND II ENVIRONMENTAL SITE ASSESSMENT,

SITE RECONNAISSANCE

September 11, 2017

Sewage Disposal Method (and age):	Unknown, could be septic given the rural use.
Potable Water Source:	Unknown
Electric Utility:	PG&E

5.3 HAZARDOUS SUBSTANCES AND PETROLEUM PRODUCTS

The following table summarizes Stantec's observations during the Property reconnaissance.

Observations	Description/Location
Hazardous Substances and Petroleum Products as Defined by CERCLA 42 U.S.C. § 9601(14):	None observed.
Drums (≥ 5 gallons):	None observed.
Strong, Pungent, or Noxious Odors:	None observed.
Pools of Liquid:	None observed.
Unidentified Substance Containers:	None observed.
PCB-Containing Equipment:	None observed.
Other Observed Evidence of Hazardous Substances or Petroleum Products:	None observed.

5.4 INTERIOR OBSERVATIONS

There is one mobile home on the property. Access was not provided to this structure.

Observations	Description
Heating/Cooling Method:	Unknown.
Surface Stains or Corrosion:	Unknown
Floor Drains and Sumps:	Unknown
Other Interior Observations:	Unknown

5.5 EXTERIOR OBSERVATIONS

Stantec made the following observations during the site reconnaissance of exterior areas of the Property and/or identified the following information during the interview or records review portions of the assessment:

Observations	Description
On-site Pits, Ponds, or Lagoons:	None observed.
Stained Soil or Pavement:	None observed.
Stressed Vegetation:	None observed.
Waste Streams and Waste Collection Areas:	Solid waste is collected into trash containers and reportedly removed from the Property by an off-site disposal service.



PHASE I AND II ENVIRONMENTAL SITE ASSESSMENT,

SITE RECONNAISSANCE
September 11, 2017

Observations	Description
Solid Waste Disposal:	No areas indicative of solid waste disposal were observed.
Potential Areas of Fill Placement:	No mounds, piles or depressions suggesting the placement of fill material were observed on the Property.
Wastewater:	No exterior wastewater discharge was observed.
Stormwater:	Stormwater discharge flows towards the Property boundaries.
Wells:	No wells were observed. In addition, a review of the Division of Oil, Gas, and Geothermal Resources Well Finder website reported no oil wells within the immediate vicinity of the Property (DOGGR, 2015).
Septic Systems:	No visible evidence of the existence of a septic system was observed. However, given the rural natural of the area a septic system could be in use for the existing residence.
Other Exterior Observations:	The structure is a mobile home. The remainder of the property is vacant.

5.6 UNDERGROUND STORAGE TANKS/STRUCTURES

Existing USTs:	No visible evidence (fill pipes, vent pipes, dispensers, surface patches), which would indicate the presence of USTs, was discovered during the site reconnaissance.
Former USTs:	No visible evidence (fill pipes, vent pipes, dispensers, surface patches), which would indicate the presence of former USTs, was discovered during the site reconnaissance.
Other Underground Structures:	None observed.

5.7 ABOVEGROUND STORAGE TANKS

Existing ASTs:	None observed.
Former ASTs:	No visible evidence (fill pipes, vent pipes, dispensers, surface stains), reports, or other evidence of the former presence of ASTs was discovered during this Phase I ESA.

5.8 ADJOINING PROPERTIES

5.8.1 Current Uses of Adjoining Properties

As viewed from the Property and/or from public rights-of-way, Stantec made the following observations about use and activities on adjoining properties:

NORTH	Monterey Road followed by residences
SOUTH	Vacant land followed by a residence.
EAST	Rail road tracks followed by vacant land
WEST	Monterey Road followed by residential structures.

PHASE I AND II ENVIRONMENTAL SITE ASSESSMENT,

SITE RECONNAISSANCE

September 11, 2017

5.8.2 Observed Evidence of Past Uses of Adjoining Properties

Observations of adjoining properties providing indications of past use and activities, if any, are described below.

NORTH	None observed.
SOUTH	None observed.
EAST	Agricultural uses.
WEST	None observed.

5.8.3 Pits, Ponds or Lagoons on Adjoining Properties

As viewed from the Property and/or from public rights-of-way, Stantec made the following observations about the presence of pits, ponds and lagoons on adjoining properties:

NORTH	None observed.
SOUTH	None observed.
EAST	None observed.
WEST	None observed.

5.9 OBSERVED PHYSICAL SETTING

Topography of the Property and Surrounding Area:	The Property is at an elevation of approximately 357 feet above mean sea level. The regional topographic gradient very flat but generally slopes to the west (USGS, 1980).
---	--

PHASE I AND II ENVIRONMENTAL SITE ASSESSMENT,

POTENTIAL FOR VAPOR ENCROACHMENT

September 11, 2017

6.0 POTENTIAL FOR VAPOR ENCROACHMENT

Additionally, consideration of the migration of hazardous substances and petroleum products in all phases including solid, liquid, or vapor is required by the ASTM E1527-13 standard. As stated in Section 2.1 of ASTM E1527-13:

Vapor migration must be considered no differently than contaminated groundwater migration in the Phase I investigation. While E2600-10 provides an industry consensus methodology to assess vapor migration, use of E2600-10 methodology is not required to achieve compliance with AAI – an EP may use alternative methodology as deemed appropriate, but this must be documented in the Phase I report (i.e., it must be "capable of being reconstructed by an EP other than the EP responsible for the Phase I ESA").

As presented below, analysis of the potential for onsite or offsite releases to have affected the Site via migration through soil, groundwater or soil vapor was performed with consideration given to media affected, distance from the Site, remedial actions taken, type of contaminants, subsurface conditions, and location of the source relative to groundwater gradient.

Based on the site inspection, review of adjacent properties, and available environmental records, the likelihood for vapor intrusion at the Property is considered low based on the following:

- No releases are reported for adjacent sites or sites within a quarter mile up-gradient relative to groundwater flow;
- No indication of manufacturing operations or use of hazardous materials was identified for neighboring properties;
- Depth to groundwater is estimated between 24 and 68 feet bgs; and
- No VOCs were detected in soil samples collected from the Property during the UST removal activities.

Therefore, Stantec recommends no investigation of soil vapor at the Property.

PHASE I AND II ENVIRONMENTAL SITE ASSESSMENT,

INTERVIEWS

September 11, 2017

7.0 INTERVIEWS

Stantec was not provided with any names of individual to interview concerning the site.

PHASE I AND II ENVIRONMENTAL SITE ASSESSMENT,

LIMITED SUBSURFACE INVESTIGATION
September 11, 2017

8.0 LIMITED SUBSURFACE INVESTIGATION

8.1 PRE-ASSESSMENT ACTIVITIES

Prior to the commencement of fieldwork activities Stantec made the following preparations:

- As required by law, Stantec visited the Property to mark the proposed boring locations and acquired a current Underground Service Alert (USA) ticket number (A71381442) prior to commencement of drilling activities.
- In accordance with federal OSHA regulations (29 CFR, Section 1910.120), Stantec developed a site-specific Health and Safety Plan (HASP) for the subject property. All Stantec personnel and subcontractors associated with the project were required to be familiar with, and comply with, all provisions of the HASP.

8.2 FIELD INVESTIGATION

Stantec provided the services of a field engineer to supervise and direct all onsite activities. All field work was conducted on August 28, 2017 under the supervision of a State of California registered professional geologist and included the activities described below:

Potential Application of Heavy Metals Along the Rail Tracks

- Two (2) hand auger borings (HA-1 and HA-6) were advanced along the rail line to evaluate the potential for residual lead and arsenic from historical herbicidal application. Soil samples were collected at 1 foot in depth at each location. Soil samples were analyzed for total lead and arsenic by EPA method 6010b

Potential for Pesticide and Herbicide Application

- A total of six (6) hand auger borings (HA-1 and HA-6) were advanced along the rail line and the remaining property to evaluate the potential for organochlorine pesticides and residual lead and arsenic from historical herbicidal application. Soil samples were collected at 1 foot in depth at each location. Soil samples were analyzed for organochlorine pesticides by EPA test method 8081b and total lead and arsenic by EPA method 6010b.

The approximate soil sampling locations are depicted on Figure 2.

PHASE I AND II ENVIRONMENTAL SITE ASSESSMENT,

LIMITED SUBSURFACE INVESTIGATION

September 11, 2017

8.3 SAMPLING PROCEDURES

8.3.1 Hand Auger Soil Sampling

A hand auger was used to collect depth discrete soil samples from borings HA-01 through HA-06 (see Figure 2). Upon reaching the prescribed soil sampling depth (1-foot) the sampler was removed from the borehole and the soil was tightly packed in glass jars with Teflon lined lids. The sample jars were sealed, logged on a chain-of-custody form, and placed in an ice-filled cooler for transport to the laboratory.

The laboratory analytical results and COC records for the soil samples collected during this investigation are attached as Appendix G.

8.4 BORING ABANDONMENT PROCEDURES

Following the completion of drilling and soil sampling, borings were abandoned by removing the sampling equipment from the borehole and subsequently backfilling with native soil.

8.5 DECONTAMINATION PROCEDURES

To maintain quality control during soil sampling, prior to each sampling interval, the sampling equipment was decontaminated in an Alconox scrub solution and double-rinsed, first with tap water followed by a final rinse using distilled water.

8.6 RESULTS

Organochlorine pesticides were detected in a single soil sample (HA-2-1) at concentrations below residential screening criteria. Based on these results pesticides do not appear to be an environmental concern to the Site and does not represent a REC. Stantec recommends no further investigation regarding this issue.

Lead was detected in five (5) of the six (6) soil samples at concentrations w below the regulatory screening level. Arsenic was detected in all six (6) soil samples within naturally occurring background levels. Based on these sample results, lead and arsenic do not represent an environmental concern to the Site and Stantec recommends no further investigation regarding this issue. Analytical results are summarized in Table 1.

PHASE I AND II ENVIRONMENTAL SITE ASSESSMENT,

EVALUATION
September 11, 2017

9.0 EVALUATION

This section provides a summary overview of or Findings, Opinions, and Conclusions.

9.1 FINDINGS AND OPINIONS

Information gathered from interviews, reviews of existing data review, and a property inspection was evaluated to determine if RECs are present in connection with the Property. Based on this information, Stantec made the following findings and developed the following opinions.

- Finding 1: Stantec's review of historic aerial photographs indicate that the Property was used for agriculture (i.e. dry land farmed) from the mid-1950s up to the 1990s. Accordingly, Stantec recommends performing a shallow soil assessment at the Property to evaluate whether residual pesticides or heavy metals associated with historical herbicide applications are present above regulatory screening levels, human health risk criteria or California hazardous waste levels.
- Opinion 1: Organochlorine pesticides were detected in a single soil sample (HA-2-1) at concentrations below residential screening criteria. Based on these results pesticides do not represent a REC and Stantec recommends no further investigation regarding this issue.
- Finding 2: The subject Property is bounded along its eastern side with an active rail line. The rail line has been present at that location prior to 1950 (earliest aerial photograph available). The application of metal containing herbicides are common along rail lines for weed control. Accordingly, Stantec performed shallow soil sampling to evaluate if lead or arsenic exist in the Site soils above risk based or hazardous waste screening levels.
- Opinion 2: Lead was detected in five (5) of the six (6) soil samples at concentrations below regulatory screening levels. Arsenic was detected in all six (6) soil samples within naturally occurring background levels. Based on these sampling results, lead and arsenic do not represent an environmental concern to the Site. Stantec recommends no further investigation regarding this issue.
- Finding 3: An environmental records search was performed and identified sites of concern within their respective ASTM E 1527-13 search radii of the Property.
- Opinion 3: Based on one or more of the following reasons: distance from the Property, position of sites with respect to assumed groundwater flow direction, the native soils, and regulatory status, none of the sites identified in the in the environmental records search report represent an environmental concern to the Property. The environmental records search identified no RECs, HRECs or de minimis conditions at or near the Property.

PHASE I AND II ENVIRONMENTAL SITE ASSESSMENT,

EVALUATION

September 11, 2017

Finding 4: Due to the Property structure being constructed circa 1960s, the presence of lead-based paint and asbestos containing materials (ACM) is considered likely.

Opinion 4: Stantec recommends conducting a comprehensive asbestos and lead based paint survey prior to the disturbance or demolition of the structures in accordance with local and federal regulations and that any identified ACM be abated accordingly

9.2 DATA GAPS

The federal AAI rule [40 CFR 312.10(a)] and ASTM E1527-13 identify a "data gap" as the lack or inability to obtain information required by the standards and practices of the rule despite good faith efforts by the Environmental Professional or the User.

Any data gaps resulting from the Phase I ESA described in this report are listed and discussed below.

Gap	Discussion
Deletions or Exceptions From Scope of Work Referenced in Section 1.4:	None
Weather-Related Restrictions To Site Reconnaissance:	None
Facility Access Restrictions to Site Reconnaissance:	None
Other Site Reconnaissance Restrictions:	None
Data Gaps From Environmental Records Review:	None
Data Gaps From Historical Records Review:	None
Data Gaps From Interviews:	None
Other Data Gaps:	None

9.3 CONCLUSIONS

During the Phase I Environmental Site Assessment, Stantec identified the following issues of concern:

Historical Agricultural Use. Stantec's review of historic aerial photographs indicated that the Property was used for agricultural purposes (*i.e.* dry land farmed) from the mid-1950s up to the 1990s. Due to the potential for residual pesticides or heavy metals associated with historical herbicide application to be present above regulatory screening levels, human health risk criteria or California hazardous waste levels, Stantec performed a Phase

PHASE I AND II ENVIRONMENTAL SITE ASSESSMENT,

EVALUATION

September 11, 2017

II subsurface investigation to sample and analyze soil at the Property, the results of which are described below.

Adjacent Rail Line. The subject Property is bounded along its eastern side with an active rail line. The rail line has been present at that location prior to 1950 (earliest aerial photograph available). The application of metal containing herbicides are common along rail lines for weed control. Therefore, Stantec performed shallow soil sampling to evaluate if lead or arsenic exist in the Site soils above risk based or hazardous waste screening levels, the results of which investigation are discussed below.

Stantec completed the field work for the recommended Phase II ESA on August 28, 2017. The Phase II ESA included collection of shallow (one foot in depth) soil samples across the Property to assess the presence of residual pesticides and the heavy metals arsenic and lead, which are commonly associated with herbicide application. Stantec concludes that this scope of work was sufficient for evaluating the issues identified above.

Soils encountered during this investigation generally consisted of silty sand. No hydrocarbon odors or staining was observed in any of the boreholes advanced during this investigation.

The Results of the Limited Subsurface Investigation

Stantec completed a limited subsurface investigation to address historical agricultural use and the adjacent rail line on the Property. The results of this investigation are summarized as follows:

A total of six (6) shallow soil samples were collected throughout the Property as shown on figure 2. A soil sample was collected from a depth of one foot at each location. Each soil sample was analyzed for the presence of organochlorine pesticides and the heavy metals (arsenic and lead) commonly associated with herbicide application. Organochlorine pesticides were detected in a single soil sample (HA-2-1) at concentrations below residential screening criteria. Based on these results, pesticides do not appear to represent an environmental concern to the Site. Stantec recommends no further investigation regarding this issue.

With respect to heavy metals, lead was detected in five (5) of the six (6) soil samples at concentrations within naturally occurring background levels. Arsenic was detected in all six (6) soil samples within naturally occurring background levels. Based on these sample results, lead and arsenic do not represent an environmental concern to the Site and recommends no further investigation regarding this issue.

Conclusions

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM E-1527-13 (and Final Rule 40 CFR Part 312 et seq.) with respect to the Site. Any exceptions to, or deletions from, this practice are described in Section 2.3 of this report. This assessment has revealed no evidence of recognized environmental conditions in connection

PHASE I AND II ENVIRONMENTAL SITE ASSESSMENT,

EVALUATION

September 11, 2017

with the Property. Stantec recommends no further investigation regarding the environmental condition of the Property.

The following non-ASTM issues were identified with the Property:

- Due to the Property structure being constructed circa 1960s, the presence of lead-based paint and asbestos containing materials (ACM) is considered likely. Therefore, Stantec recommends conducting a comprehensive asbestos and lead based paint survey prior to the disturbance or demolition of the structures in accordance with local and federal regulations and that any identified ACM be abated accordingly.

PHASE I AND II ENVIRONMENTAL SITE ASSESSMENT,

NON-SCOPE CONSIDERATIONS

September 11, 2017

10.0 NON-SCOPE CONSIDERATIONS

No ASTM E1527-13 non-scope services were performed as part of this Phase I ESA with the following exceptions:

10.1 LEAD-BASED PAINT

Concern for lead-based paint (LBP) is primarily related to residential structures. The EPA's Final Rule on Disclosure of Lead-Based Paint in Housing (40 CFR Part 745) defines LBP as paint or other surface coatings that contain lead equal to or in excess of 1.0 milligram per square centimeter or 0.5 percent by weight.

The risk of lead toxicity in LBP varies based upon the condition of the paint and the year of its application. The U.S. Department of Housing and Urban Development (HUD) has identified the following risk factors:

The age of the dwelling as follows: maximum risk is from paint applied before 1950.

There is severe risk from paint applied before 1960.

There is moderate risk from deteriorated paint applied before 1970.

There is slight risk from the paint that is intact but applied before 1977.

The condition of the painted surfaces.

The presence of children and certain types of households in the building.

Previously reported cases of lead poisoning in the building or area.

Due to the Property structure being constructed circa 1960s, the presence of lead-based paint is considered likely. Therefore, Stantec recommends conducting a lead based paint survey prior to the disturbance of these painted surfaces in accordance with local and federal regulations.

10.2 ASBESTOS

Asbestos can be found in many applications, including sprayed-on or blanket-type insulation, pipe wraps, mastics, floor and ceiling tiles, wallboard, mortar, roofing materials, and a variety of other materials commonly used in construction. The greatest asbestos-related human health risks are associated with friable asbestos, which is an asbestos containing material (ACM) that can be reduced to powder by hand pressure. Friable asbestos can become airborne and be inhaled, and has been associated with specific types of respiratory disease. The manufacturing and use of asbestos in most building products was curtailed during the late 1970s.

PHASE I AND II ENVIRONMENTAL SITE ASSESSMENT,

NON-SCOPE CONSIDERATIONS

September 11, 2017

Stantec makes no warranty as to the possible existence or absence of inaccessible materials or to their evaluation with respect to asbestos content. Samples of suspect ACM should be collected for laboratory analysis of asbestos prior to any renovation or building demolition, in order to determine the need for compliance with EPA National Emission Standard for Hazardous Air Pollutants (NESHAP) regulations.

Due to the Property structure being constructed circa 1960s, the presence of ACM is considered likely. Therefore, Stantec recommends conducting a ACM survey prior to the disturbance and/or removal of the structure in accordance with local and federal regulations and that any identified ACM be abated accordingly.

10.3 RADON

Radon is a colorless, tasteless radioactive gas with an EPA-specified action level of 4.0 PicoCuries per liter of air (pCi/L) for residential properties. Radon gas has a very short half-life of 3.8 days. The health risk potential of radon is primarily associated with its rate of accumulation within confined areas near or in the ground, such as basements, where vapors can readily transfer to indoor air from the ground through foundation cracks or other pathways. Large, adequately ventilated rooms generally present limited risk for radon exposure. The radon concentrations in buildings and homes depend on many factors, including soil types, temperature, barometric pressure, and building construction (EPA, 1993).

Stantec reviewed regional data published by the EPA (<http://www.epa.gov/radon/zonemap.html>) on average indoor radon concentrations in the vicinity of the Property.

The Property is located in zip code 95037, in which 100% of the 21 tested sites reported radon below 4 pCi/L. The average first floor radon reading in Santa Clara County was reported at -0.300 pCi/L. Based on this data, the Property lies within an area of low radon risk, radon is unlikely to represent an environmental concern to the Site, and Stantec recommends no further investigation regarding this issue.

10.4 FLOOD ZONES

According to the Physical Setting summary portion of the EDR report, the Property is located within a 100-year flood plain. The nearest Surface Water is a small pond adjacent to the site to the east.

PHASE I AND II ENVIRONMENTAL SITE ASSESSMENT,

REFERENCES

September 11, 2017

11.0 REFERENCES

American Society for Testing and Materials, Standard Practice for Environmental Site Assessments: Phase 1 Environmental Site Assessment Process, Designation: E 1527-13, November 2013.

California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR), 2016, website <http://www.conservation.ca.gov/dog/Pages/Wellfinder.aspx>

California Division of Mines and Geology (CDMG), 1966, Geologic Map of California, San Jose Sheet, scale 1:250,000.

_____, 2000, Digital Images of Alquist-Priolo Earthquake Fault Zones of California, Central Coastal Region, CD 2000-004.

California Geological Survey (CGS), 2002, California Geomorphic Provinces, Note 36.

_____, 2010, Fault Activity Map of California, adjustable scale, <http://www.quake.ca.gov/gmaps/FAM/faultactivitymap.html>.

California Regional Water Quality Control Board (CRWQCB), 1995, Water Quality Control Plan, Central Coast Region – Region 3.

Environmental Data Resources, Inc. (EDR), EDR Radius Map, Inquiry Number 4780884_2, dated November 14, 2016.

_____, Environmental Data Resources, Inc. (EDR), EDR Radius Map with Geocode, Inquiry Number 4563962.2s, dated March 14, 2016.

_____, Certified Sanborn Map Report, Inquiry Number 4259161.3, dated April 13 2015.

_____, Historical Topographic Map Report, Inquiry Number 4259161.4, dated April 13 2015.

_____, City Directory Abstract, Inquiry Number 42591615, dated April 16, 2015.

_____, Aerial Photo Decade Package, Inquiry Number 4259161.12, dated April 13 2015.

Geare Group, 2004, Transaction Screen Report, dated June 21.

Stantec Consulting Services, Inc., 2011, Phase I Environmental Site Assessment, dated November 3.

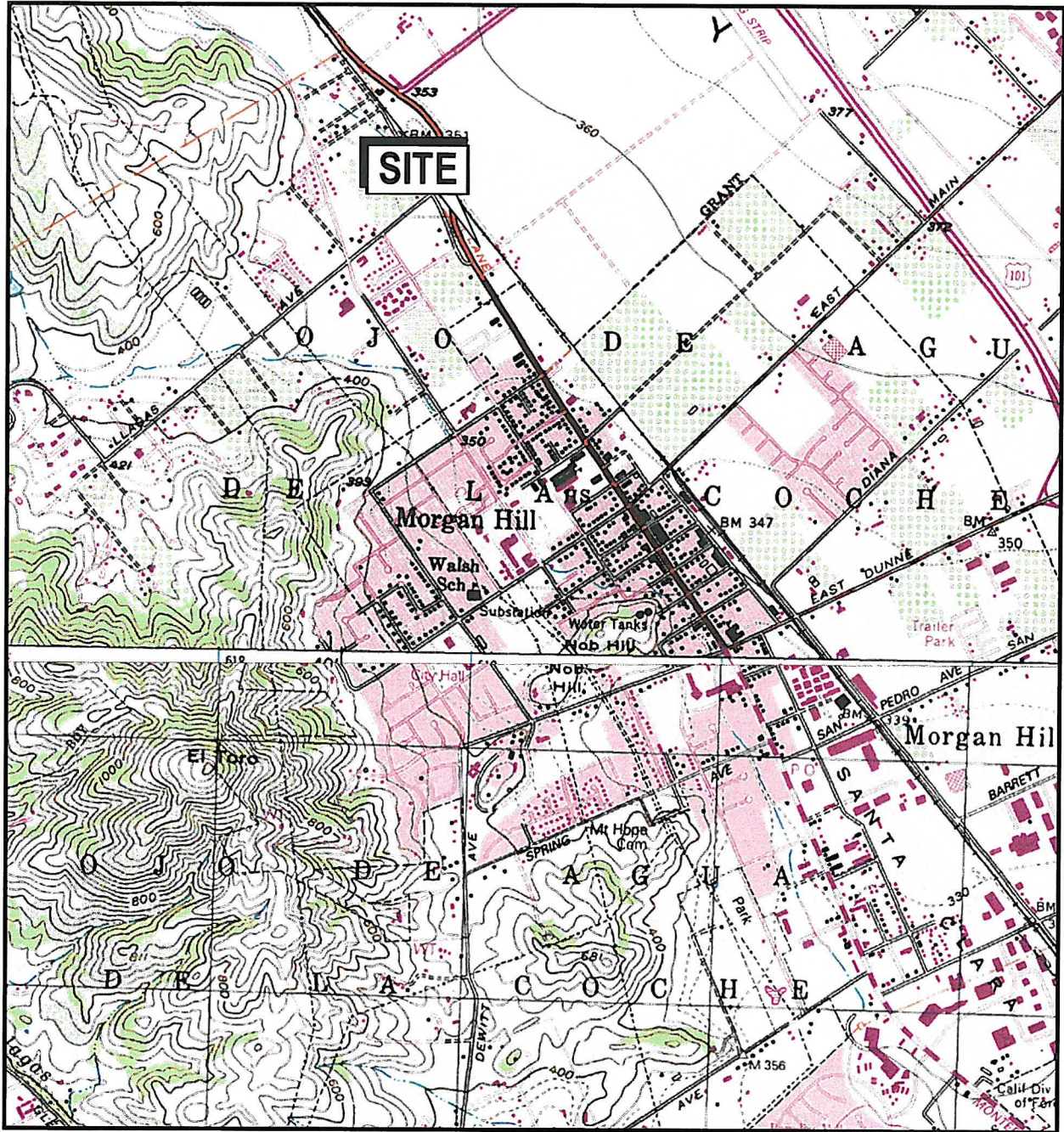
_____, 2015, Phase I Environmental Site Assessment, dated May 27.

_____, 2016, Phase I Environmental Site Assessment Multiple Parcels (Site 3) Southeast corner of Depot Street and East Second Street, Morgan Hill, dated March 31.

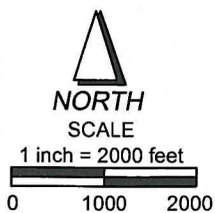
_____, 2016, Draft Underground Storage Tanks Closure Report, 30 East Second Street, Morgan Hill, dated November 8.

United States Geological Survey (USGS), 1980, Morgan Hill Quadrangle, 7.5 Minute Topographic Map, Scale 1 inch = 2,400 feet.


FIGURES

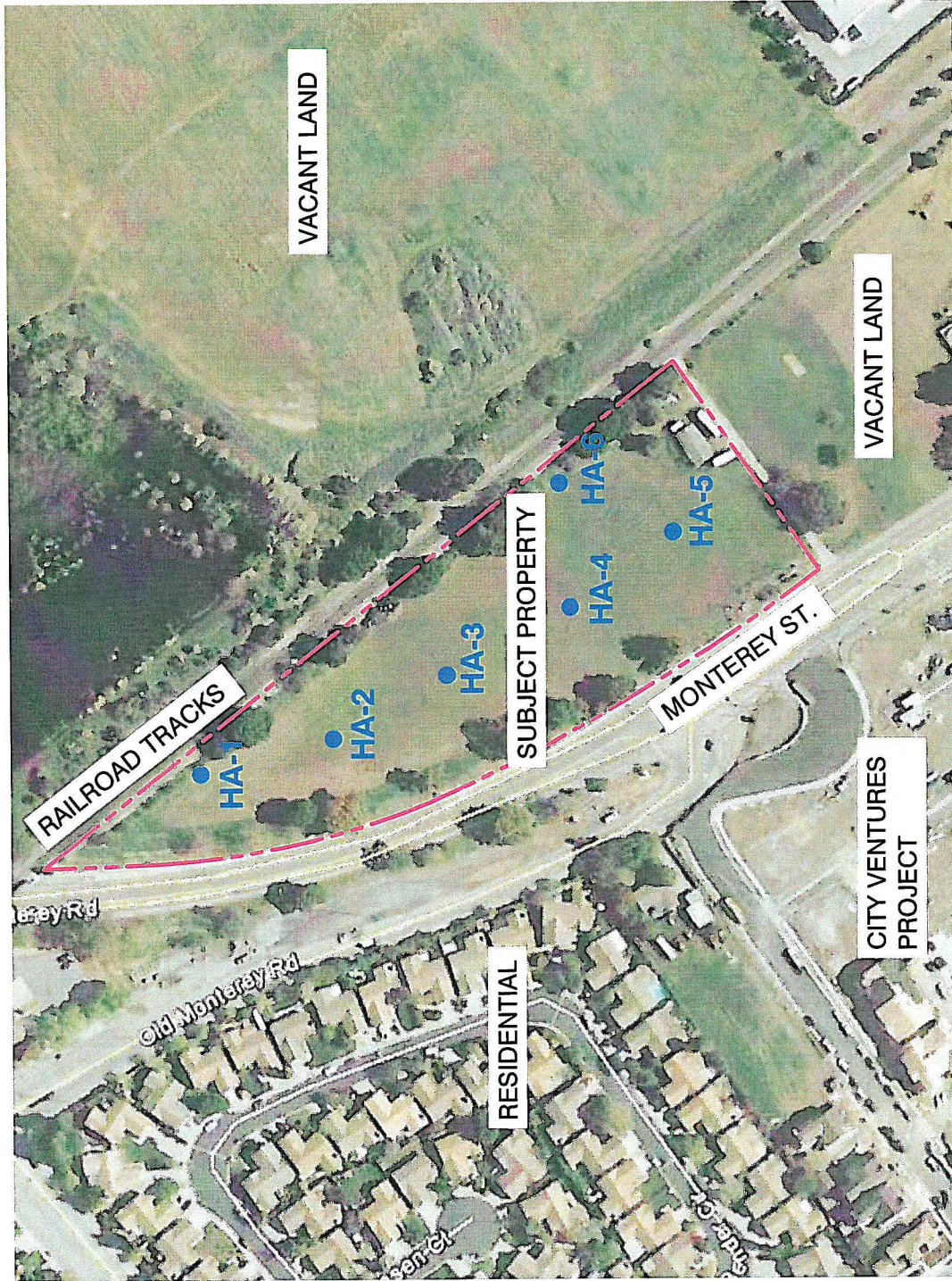


Reference: U.S.G.S., 1955, Morgan Hill and Mount Madonna Quadrangles California - Santa Clara County. 7.5' Series Topographic.



QUADRANGLE LOCATION

 <p>25864-F BUSINESS CENTER DRIVE REDLANDS, CALIFORNIA PH (909) 335-6116 FAX (909) 335-6120</p>	FOR: CITY VENTURES MORGAN HILL D 18110 MONTEREY DRIVE MORGAN HILL, CALIFORNIA		SITE LOCATION MAP		FIGURE: 1
	JOB NUMBER: 185804012	DRAWN BY: MS	CHECKED BY: KE	APPROVED BY: KE	DATE: 04/20/2015



LEGEND:



PROPERTY BOUNDARY



SHALLOW SOIL SAMPLE
LOCATION



APPROXIMATE SCALE (FEET)



25864-F BUSINESS CENTER DRIVE
REDLANDS, CALIFORNIA
PH (909) 335-6116 FAX (909) 335-6120

FOR:

CITY VENTURES
MORGAN HILL D
18110 MONTEREY ROAD
MORGAN HILL, CALIFORNIA

JOB NUMBER:

185804012

DRAWN BY:

MS

CHECKED BY:

KE

APPROVED BY:

KE

FIGURE:

2

DATE:

09/05/2017

Appendix A

PHOTOGRAPHS OF THE PROPERTY AND VICINITY



Photo #1 View of the Property facing northwest.

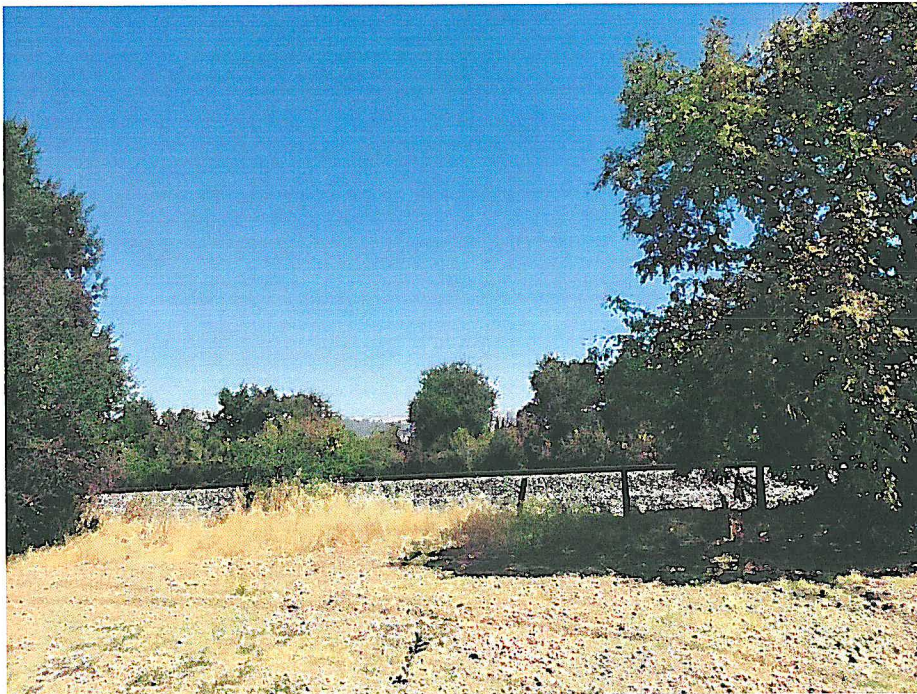


Photo #2 View of the adjacent railroad tracks along the northeastern the Property boundary.



Photo #3 View of the adjacent properties across Monterey Road looking South.



Photo #4 View of the Property facing southeast.



Photo #5 View of the residential structure and RVs on the southeastern portion of the Property.



Photo #6 View of the residential properties across Monterey Road to the south of the Property.



Photo #7 View of the construction materials and debris piled up between the residence and the railroad at the southeastern portion of the Property.



Photo #8 View of the adjacent vacant lot to the south.

Appendix B

STANTEC RESUMES

Matthew is a geological designer with a degree in civil engineering. He has field experience in subsurface exploration techniques and Phase I and II Environmental Assessment field work and report preparation. His field experience includes concrete and asphalt core sampling, moisture and density testing, soldier pile and soil nail testing, soil logging and collection, soil vapor collection, and surface and groundwater collection with basic flow measurements and parameter stabilization. He is proficient in the Microsoft Office, Google Earth GIS, HEC-HMS, gINT, AutoCAD, and MicroStation. Matthew's environmental consulting experience includes performing Phase I Environmental Site Assessments in accordance with the practices identified in the American Society for Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, ASTM Designation E 1527-13, and the collection and interpretation of Phase II Environmental Assessment data.

During his time at Cal Poly Pomona, Matthew did extensive research in the area of Rock Mechanics. He studied the application of block theory in the stability analysis of rock slopes.

Matthew was also heavily involved in CPP Engineers Without Borders student chapter, where he lead an assessment trip to Nicaragua in preparation of designing a system to bring clean drinking water to the rural community near the town of Totogalpa, Nicaragua.

EDUCATION

BS, Civil Engineering, California State Polytechnic University, Pomona, CA, 2015

AA, General Education, San Bernardino Valley Community College, San Bernardino, CA, 2012

CERTIFICATIONS & TRAINING

First Aid and CPR Certification, Red Cross, Long Beach, California, 2016

8-Hour Supervisor Trainer Course Certification, OSHA, Gardena, California, 2016

REGISTRATIONS

Engineer-In-Training, California Board for Professional Engineers, Land Surveyors, and Geologists

MEMBERSHIPS

Member, Engineers Without Borders, USA

PROJECT EXPERIENCE

Environmental Site Assessments Phase I, II, III Various Masters Service Agreements, Various Locations, California (Project Engineer)

As part of Master Service Agreements, Matthew performs Phase I and II environmental site assessments for commercial and industrial property transfers in California. Matthew performs on-site reconnaissance survey, historical records investigation, and formulates the report deliverable. The reports provide a thorough review of the property history and defined present environmental concerns for the client. Clients include BP West Coast Products, LLC, Chevron Environmental Management Company, The Olson Company, CT Realty, City Ventures, and G&L Commercial.

Geotechnical Engineering Analysis and Design Phillips 66 Los Angeles Terminal, Los Angeles, California (Field Engineer)

Matthew completed geotechnical drilling and sampling; completed and coordinated geotechnical laboratory analyses; completed boring logs using gINT; developed figures to present locations of borings. In addition, he coordinated materials laboratory testing including soils and concrete in accordance with the project specifications. Matthew completed these tasks to assist his PM to prepare a report of findings and recommendations for geotechnical design of the new skid mounted additive tank.

Matthew Sapp

Geological Designer

Recurrent Energy Gaskell West, Rosamond, California (Field Engineer)

Matthew completed pile testing of various sizes and lengths for the required design loads for the solar fields. The loading was to reflect the short term, dynamic nature of the wind loading expected to generate the design uplift and lateral loads. In addition, he coordinated materials laboratory testing of soils in accordance with the project specifications. He also provided subcontractor oversight for geophysical soil resistivity surveying. The results were reported as uplift and lateral loads based on pile dimensions along with the corrosion study.

Materials Engineering / Testing

MCLB Barstow, Barstow, California (Field Engineer)

Matthew performed concrete core sampling services in order to provide insight to reverse engineer the mat foundation. In addition, he coordinated materials laboratory testing of concrete core samples in accordance with the project specifications. He also provided subcontractor oversight for geophysical survey to detect the rebar spacing of the mat foundation. Matthew completed these tasks to assist his PM to prepare a memo of findings and recommendations for geotechnical design of the replication of the mat foundation.

Alicia is an Associate Scientist with over ten years of experience in Phase I and II Environmental Assessments, with strong emphasis in water quality and environmental research. She is experienced in California Environmental Quality Act (CEQA) compliance and the preparation of initial studies. Alicia has managed the preparation of environmental documents, training programs, and environmental compliance during large environmental monitoring projects. Alicia's environmental consulting experience includes performing asbestos and lead-based paint surveys, oversight of contractors during asbestos abatement, hazardous materials surveys, and Phase I Environmental Site Assessments in accordance with the practices identified in the American Society for Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, ASTM Designation E 1527-13.

EDUCATION

BA, Environmental Studies, San Jose State University,
San Jose, California, 2004

CERTIFICATIONS & TRAINING

Residential Measurement Provider, 108212, National
Radon Proficiency Program, Anaheim, California,
2015

REGISTRATIONS

Certified Asbestos Consultant #CAC #15-5379,
State of California Division of Occupational Safety
and Health

Lead Related Construction Inspector Assessor
#19526, California Department of Public Health

MEMBERSHIPS

Member, Groundwater Resources Association of
California

PROJECT EXPERIENCE

Health, Safety & Industrial Hygiene

Confidential Health Care Company, Asbestos,
Lead-Based Paint, and Hazardous Materials Survey,
Northern California (Staff)

Alicia assisted with site inspections for asbestos, lead-based paint, and hazardous materials at multiple occupied hospitals and office spaces. The scope of work involved sample collection for asbestos and lead-based paint in addition to the quantification of universal wastes (PCBs, mercury containing equipment, refrigerants, etc.) that would require special handling and disposal. She assisted with the preparation of reports summarizing findings.

State of California General Services, Asbestos,
Lead-Based Paint, and Hazardous Materials Survey,
Northern California (Project Lead)

Alicia assisted with site inspections for asbestos, lead-based paint, and hazardous materials at multiple communication towers in remote areas. The scope of work involved sample collection for asbestos and lead-based paint in addition to the quantification of universal wastes (PCBs, mercury containing equipment, refrigerants, etc.) that would require special handling and disposal. She assisted with the preparation of reports summarizing findings.

Indoor Air Quality Assessments*, San Jose, California
(Staff)

Alicia performed site inspections, interviews, and collected air samples to be analyzed for various air pollutants and molds including formaldehyde, penicillium, aspergillus, cladosporium, and stachybotry. She prepared reports summarizing findings and made recommendations.

Veteran's Administration of Puget Sound, Asbestos
and Lead-Based Paint Survey, Seattle, Washington
(Project Scientist)

Alicia served as the Project Scientist responsible for hazardous building material assessments, specifically asbestos and lead-based paint. These services were required as part of the pre-design tasks for this project. Over 300 samples were collected over the span of four days culminating in a final hazardous building materials report to be incorporated into the facility design as well as demolition activities once the construction phase of the project commences.

* denotes projects completed with other firms

Alicia R Jansen CAC, LRCST

Environmental Scientist

Interim Remedial Action, Indoor Air Sampling, and Sub-Slab Soil Gas Sampling, Sunnyvale, California (Staff)

Alicia conducted an indoor air sampling survey using air sampling pumps, dosimeter badges, and flame ionization detector (FID) during a sump excavation. She performs semi-annual sub-slab soil vapor sampling and indoor air quality surveys using summa canisters. She assists with the preparation and submittal of reports summarizing the findings and provides recommendations to the RWQCB.

Lead Dust Assessment and Abatement Oversight, Fremont, California (Project Scientist)

Alicia assisted with the evaluation of lead dust in an industrial facility. A total of 307 dust wipe samples were collected in order to evaluate the potential presence of lead dust throughout the two-story, 500,000 square foot manufacturing building.

Former Tesoro Coke Facility, Asbestos, Lead-Based Paint Survey, Pittsburg, California (Project Scientist)

Alicia assisted with an asbestos and lead paint survey of 20 structures at the facility ultimately scheduled for demolition. More than 200 samples were collected over the span of two days. A report was prepared that will stand up to regulatory scrutiny for demolition while providing the information needed for worker safety during demolition activities at the facility.

Permitting, Compliance, Auditing

Tesoro Refinery, Initial Study*, Benicia, California (Staff)

Alicia assisted with the background research and preparation of applicant-prepared initial study for the upgrade of a refinery.

Transmission Line Upgrade*, San Mateo to San Francisco, California (Staff)

Alicia supported the environmental compliance program for the construction of a 27-mile 230 kV underground and overhead transmission line. She assisted with the preparation and submittal of variance requests, extra work space requests, and daily and weekly reports for submittal to the California Public Utilities Commission. She also conducted research and assisted with training and report preparation.

Remedial Investigations & Assessments

Hewlett-Packard Company Phase I ESAs, Cupertino, Palo Alto, and Mountain View, California

Alicia performed Phase I Environmental Site Assessments (ESA) in accordance with the practices identified in the American Society for Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, ASTM Designation E 1527-05 to achieve compliance with requirements of the "All Appropriate Inquiries" rule required to obtain protection from liability under the federal Comprehensive Environmental Response, Cleanup and Liability Act (CERCLA). She reviewed topographic maps, Sanborn Fire Insurance Maps, and files at local regulatory agencies. She interviewed present and former property owners and performed site and adjacent property reconnaissance.

California Department of Transportation Portfolio, Multiple Sites, Northern California (Project Lead)

Alicia prepared quarterly groundwater monitoring reports, subsurface investigation reports, sensitive receptor surveys, and preferential pathway studies for various California Department of Transportation locations throughout northern California. She assisted with the utility locating, work plan preparation, field coordination, archived data onto the State Water Resource Control Board's (RWQCB) Geotracker electronic filing system.

City Ventures, Soil Gas Sampling and Human Health Risk Assessment, San Jose, California (Project Lead)

Alicia performed a soil vapor survey in conformance with the DTSC, Advisory Active Soil Gas Investigations, using a low-dead volume soil vapor sampling device and a mobile laboratory for onsite chemical analysis. She also assisted with the report preparation summarizing the findings and providing recommendations for further assessment, if applicable.

* denotes projects completed with other firms

Alicia R Jansen CAC, LRCST

Environmental Scientist

City Ventures, Phase I Environmental Site

Assessments, Multiple Sites, California (Project Lead)

Alicia performs Phase I ESA in accordance with the practices identified in the American Society for Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, ASTM Designation E 1527-13 to achieve compliance with requirements of the "All Appropriate Inquiries" rule required to obtain protection from liability under the federal Comprehensive Environmental Response, Cleanup and Liability Act (CERCLA). Previous sites include large industrial warehouses, multi-tenant commercial buildings, and residential properties. She reviews topographic maps, Sanborn Fire Insurance Maps, and files at local regulatory agencies. She interviews present and former property owners and performed site and adjacent property reconnaissance. She prepares reports summarizing the findings and provides recommendations for further assessment if applicable.

Confidential Client, Phase I Environmental Site

Assessments, Multiple Sites, California (Project Lead)

Alicia performed Phase I ESAs for multiple research and development facilities in Silicon Valley. She reviewed topographic maps, Sanborn Fire Insurance Maps, and files at local regulatory agencies. She interviewed present and former property owners and performed site and adjacent property reconnaissance.

Goodyear Portfolio, Northern California and Hawaii (Project Lead)

Alicia performed Phase I Environmental Site Assessments (ESA) and Phase II Site Assessments for various Goodyear Tire & Rubber Company locations throughout California and Hawaii. She assisted with the installation of monitoring wells and exploratory borings; underground storage tank removals; site restoration; product removal with passive recovery system; archived data onto the State Water Resource Control Board's Geotracker electronic filing system; and assisted with the preparation of quarterly groundwater monitoring reports, sensitive receptor surveys, site conceptual models, and subsurface investigation reports.

* denotes projects completed with other firms

Kyle has more than 28 years of professional experience—17 of those years with Stantec—providing geotechnical and environmental consulting. During the course of his experience, he has been involved with a wide variety of geological and engineering projects. He has been in direct charge of quality control/quality assurance (QA/QC) work for Stantec and previous firms for geological, engineering geological, and environmental services primarily in California. Additionally, Kyle has been a primary contact for Stantec with many different clients (including multi-party actions) and regulatory bodies involving contracting, workplan approvals, site assessments and closures, permitting, remedial action, and litigation support. With regard to litigation services, Kyle has extensive experience providing expert witness testimony, second-party review, and litigation support and analysis.

Kyle's extensive experience includes assessment and remediation of property-specific and regional issues involving soil and groundwater contaminated with petroleum hydrocarbons, chlorinated solvents, heavy metals, pesticides, and PCBs.

He currently serves as the managing principal geologist in Stantec's Redlands, California office.

EDUCATION

Engineering Geology/Hydrogeology, California State University, Los Angeles, California, 1984

AS, General Science, Crafton Hills College, Yucaipa, California, 1975

BS, Geological Sciences, California State University, Long Beach, California, 1982

REGISTRATIONS

Certified Engineering Geologist #1271, State of California

Professional Geologist #4066, State of California

PROJECT EXPERIENCE

Bioremediation

Excavation and Treatment of Petroleum-Contaminated Soil

Kyle designed the excavation and treatment of 45,000 cubic yards of petroleum-contaminated soil. Soil treatment included utilizing vapor extraction, combined with bioremediation.

Chemicals & Polymers

Two Former Chemical Plants, Environmental Site Assessments and Remediation, Vernon, California

Mr. Emerson was part of the team for conducting Phase I and Phase II Environmental Site Assessments (ESA) and developing remedial action plans for two former chemical plant sites with 80-year industrial histories. Phase I ESAs used historical files, maps, aerial photographs, available documents, and data from public agencies and historical directories for identifying recognized environmental concerns. Extensive Phase II ESA survey activities aided in identifying below-grade structures such as vaults/USTs, as well as assessing the extent of influence and nature of the contamination. These investigations confirmed the presence of heavy metals, petroleum hydrocarbons, volatile organic compounds, polychlorinated biphenyls, radioactive materials, semi-volatile organic compounds, and polycyclic aromatic compounds in the soils for these sites. Specific areas of concern included former settling ponds, a bone yard, maintenance areas, transformer and substations, wastewater treatment facilities, and above-ground storage tank farms. A conceptual mode was developed for use in a health risk assessment and developed risk-based corrective actions to address potential health and environmental concerns. He assisted with the development and implementation of a remedial action plan, combined administrative controls, engineering controls, and active remediation; this resulted in the cost-effective return of one site to active use, and is reducing health risks to occupants and the public at the second site.

Kyle D. Emerson PG, CEG

Managing Principal Geologist

CONFIDENTIAL: Aerospace Adhesives and Coatings Plant, Glendale, California

Mr. Emerson was part of the team that conducted feasibility studies to evaluate remedial alternatives for remediation of chlorinated VOCs, 1,4 dioxane, and hexavalent chromium (CrVI) in soil, soil vapor, and groundwater. Feasibility studies included groundwater pump testing, benchscale column testing to evaluate in situ alternatives for reducing CrVI to the less mobile CrIII valence state, soil vapor extraction, capping, and excavation. Field pilot studies were performed to evaluate the efficiency of various CrVI reductants including the use of ferrous sulfate, calcium polysulfide, emulsified oil, and fructose. Extensive multi-depth soil vapor testing was conducted to evaluate the distribution of VOCs in the subsurface and to support vapor intrusion risk assessment. Feasibility studies were completed in 2008. Remedial actions are expected to be completed in 2011.

Condition Assessments

Assessment and Mitigation of Manufacturing Facility

Kyle managed the assessment and mitigation of an ammunition manufacturing facility covering 1,100 acres in a complex geologic environment. The contaminants involved red and white phosphorous, TNT, chlorinated solvents, solid wastes, and live ordinance.

Soil Contamination Assessment Supervision and Management

Kyle managed and supervised soil contamination assessment and in-situ remediation of heavy metals involving chromium, cadmium, nickel and zinc by chemical fixation to depths in excess of 40 feet below ground surface beneath existing structures within several manufacturing facilities.

Litigation Support and Expert Testimony

Kyle provided litigation support and expert testimony on more than 20 separate projects involving service stations, chlorinated solvent cases, heavy metal, and semi-volatile releases.

Corporate / Office

CT Realty Environmental Remediation of Former Dry Cleaners, El Centro, California

Mr. Emerson was responsible for assessments and remediation at this former dry cleaners which released the dry cleaning chemical tetrachloroethene (PCE) to the ground and underlying groundwater. The work included initial site assessment, agency interaction and negotiations with the California Regional Water Quality Control Board (CRWQCB), and Colorado Basin Region human health risk assessment (HHRA), design and implementation of remedial investigations, feasibility studies, remedial action plans, and implementation of remediation in mitigating chlorinated solvent contamination in vadose and saturated zones at concentrations indicative of DNAPL. The results of the completed remediation, as well as continued confirmation sampling and monitoring, allowed the CRWQCB to issue site closure in 2008. The site has since been redeveloped into a new commercial development.

Environmental Assessments

Siting Studies

Kyle performed initial siting studies for potential Class I, II, and III landfills. The project included detailed geologic mapping, hydrogeological studies, and permeability studies of caps and liners.

Environmental Site Remediation

Assessment and Remedial Design, California (Project Supervisor)

Kyle supervised the assessment and remedial design of a system to eliminate salt brine contamination in shallow perched water horizons in the Yucaipa, San Bernardino, and Riverside areas of southern California.

Design and Installation of Recovery Systems*

Kyle designed and installed numerous free-product recovery systems that successfully recovered product. One of the sites contained product up to 11-feet thick covering more than three city blocks. The dissolved phase had affected a multi-aquifer system and a public drinking water system.

Geophysical Characterizations*

Kyle performed and supervised numerous geophysical characterizations to determine the extent of old landfills. He provided classification studies, landfill gas monitoring, removal verification during grading, methane collection and mitigation plans, permitting, and closure plans.

* denotes projects completed with other firms

Kyle D. Emerson PG, CEG

Managing Principal Geologist

Domestic Landfill Development*

Kyle designed and supervised the dynamic consolidation of a domestic landfill for development. He used this process to minimize expected settlement to overlying structures. Kyle designed commercial developments on closed landfills that involved complex methane collection and monitoring systems and building settlement controls.

Clay Borrow Site Studies

Kyle performed more than 10 separate clay borrow site studies for determining sources of material to cap landfills; ranged from a 20-acre dry lakebed to a 450-acre parcel in complex folded marine sediments.

Assessment, Clean Up, and Regulatory Support Management, Santa Monica (Project Manager)

Kyle managed the assessment, clean up, and complex regulatory support of a PRP site in an MTBE case (Charnock subbasin). His work involved more than 20 environmental professionals working full time for two years to complete the assessment and clean up mandated by the regulatory agencies.

Hazardous Waste

San Gabriel Valley Superfund Site, Remediation & Closure of Multiple Source Areas, Industry, California

Mr. Emerson performed feasibility studies to evaluate appropriate and relevant remedial alternatives to mitigate constituents of concern in five AOCs contaminated with chlorinated hydrocarbons, heavy metals, petroleum fuel, and cutting oils. Ultimately, a combination of remedial alternatives was implemented that included large-diameter auger excavation to 45 feet to minimize impacts on facility operations, vapor extraction, vapor intrusion risk assessment, deed restriction, and monitored natural attenuation. At the completion of remedial actions, confirmation soil, soil vapor, and groundwater sampling were conducted and followed with risk assessment to demonstrate that remedial objectives had been achieved. No further action was recently granted by the US EPA and Los Angeles Regional Water Quality Control Board.

Mixed-Use

Port of San Diego Rohr Facility, Chula Vista, California

Mr. Emerson assisted in a detailed subsurface assessment of the Rohr facility. The intent of the assessment was to evaluate the 40-acre former aircraft part manufacturing facility for acquisition by the Port of San Diego for redevelopment into a business park and entertainment complex. The assessment identified the presence of soil, soil vapor, and groundwater impacts by petroleum hydrocarbons, VOCs, heavy metals, PCBs, and semi-volatile organic compounds. He utilized many sampling techniques to assess the limits and concentrations of contaminants in the subsurface. Ultimately, the team was able to develop a cost estimate for potential remedial action cost associated to corrective action to allow redevelopment.

Master Planned Commercial/Residential Redevelopment Project, Whittier, California (Project Manager)

Kyle oversaw the assessment of 26 contiguous properties that are part of a 21-acre master planned commercial/residential redevelopment project. The properties included industrial facilities, plating lines, fuel USTs, and metal processing plants, among others. The estimated cleanup costs are approximately \$2 million.

Multi-Unit / Family Residential

Residential Development Assessment, Ventura, California (Project Director)

Kyle directed an assessment of a 40-acre former agricultural property proposed for residential development. Pesticides were identified above hazardous waste levels and preliminary remediation goals established by the U.S. Environmental Protection Agency. Through corrective grading methods and onsite placement of the pesticide impacted soils, all material were re-used on site without offsite disposal. The over all cost savings for the client was more than \$1 million. Total cost was less than \$250,000 for all necessary activities.

Oil & Gas

Oil Field Site Assessments*

Kyle performed site assessments at oil field leases involving refineries, bulk storage areas, piping systems and wellhead, and drilling mud pit contamination.

* denotes projects completed with other firms

Kyle D. Emerson PG, CEG

Managing Principal Geologist

Environmental Protection Agency Superfund Action, Culver City, California (Project Manager)

Kyle served as the project manager representing a major oil company in the assessment, remedial action, and litigation support in a multi-party contamination case affecting a City water supply. The assessment involved more than 250 continuous core borings up to 100 feet, as well as extensive remedial actions. The total cost for all related activities was \$22 million. The case is settled and the closure of the site is pending.

Project Management

Liability and Property Management Consulting Services

Kyle is providing liability and property management consulting services to more than 10 medium to large property development firms in the US. His work involves property transaction assessments, contract review, acquisition guideline development, liability management evaluation, insurance acquisition, and strategic planning.

Residential Development

Environmental Development Management and Review (Project Manager)

Kyle manages and reviews environmental development issues for a large residential developer specializing in development of contaminated industrial properties by providing innovative solutions in developing contaminated properties for residential use through risk assessment, engineering, and administrative and property development controls.

Site Management and Remediation

Design and Implementation of Biodegradation Programs*, California

Kyle designed and implemented one of the first in-situ biodegradation programs in California; it involved 50,000 cubic yards of diesel-contaminated soils, and groundwater to depths of 70 feet below ground surface.

Soil and Groundwater Remediation Systems

Soil and Groundwater Contamination Assessments and Mitigation*, California (Project Manager)

Kyle managed numerous chlorinated solvent soil and groundwater contamination assessments and mitigation programs in southern California. The projects involved releases that impacted soil and groundwater to depth of groundwater more than 700 feet in multi-aquifer systems. One case involved with plume dimensions more than 1 mile from the source affecting residential properties.

Soil and Groundwater Assessment and Remediation Programs*

Implemented hundreds of soil and groundwater assessment and remediation programs at various service station facilities in Southern and Northern California, and Nevada. Work involved assessment, remedial design, installation, maintenance and monitoring. Closure has been received on a majority of these sites.

Assessment and Remediation Management*

Kyle managed the assessment and remediation of soil and groundwater manufacturing at dry cleaning facilities contaminated with chlorinated solvents.

Warehouse / Light Industrial

Glendale Redevelopment Project, Glendale, California (Project Manager)

Kyle managed the assessment and remedial actions during the redevelopment of an industrial property. The project involved the demolition of a historic manufacturing facility and a commercial dry cleaner. Each of these facilities were associated with releases of solvents and petroleum hydrocarbons. Remedial actions involved excavation by pattern drilling and off site disposal along with removal of former USTs. The total cost of remediation and assessment was \$450,000.00.

* denotes projects completed with other firms

Kyle D. Emerson PG, CEG

Managing Principal Geologist

Compton Redevelopment Project, Compton, California (Project Manager)

Kyle is serving as project manager for the assessment and remedial actions for a large redevelopment project. The project involves the redevelopment of a historic manufacturing facility and a former dry cleaner. Each of these facilities were associated with releases of solvents and petroleum hydrocarbons. The industrial facility was also associated with significant volumes of buried waste that required removal and disposal. These wastes also included the chemical referenced above, as well as PCBs and heavy metals. Remediation has included excavation, vapor extraction, and chemical fixation. The total cost of this project has been \$2.8 million to date.

Kyle D. Emerson PG, CEG

Managing Principal Geologist

PUBLICATIONS

In-Situ Bioremediation of an Underground Diesel
Fuel Spill: A Case Study. *Environmental
Management*, 1989.

Appendix C

USER PROVIDED DOCUMENTS



PHASE I ESA USER'S QUESTIONNAIRE

In order to qualify for protection from land owner liability under CERCLA as an *innocent landowner, bona fide prospective purchaser, or contiguous property owner*, ASTM standard practice E1527-13 and the federal AAI rule (40 CFR 312) require that the User of the Phase I ESA report provide certain information (if available) to the Environmental Professional completing the assessment. Failure to provide this information could result in a determination that "all appropriate inquiry" is not complete. Information that is not or cannot be provided to the Environmental Professional may be identified as a "data gap" in the Phase I ESA report.

Please answer the following questions as completely as possible. Attach additional pages as needed. Return the completed questionnaire to Stantec Consulting Services Inc.

1. Property Information

Property Name: 18110 Monterey Road _____

Property Address: 18110 Monterey Road _____

City: Morgan Hill _____ State CA Zip 95037 _____

Property Owner Name: _____

Property Owner Phone #: _____

2. Contact For Site Access

Name: Open site _____

Company/Organization/Title: _____

Phone # _____ E-Mail Address: _____

3. Environmental Cleanup Liens. Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?

_____ Yes _____x_____ No

If yes, describe or attach details of the lien _____



4. Activity and Land Use Limitations. Are you aware of any activity and 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 as applicable to the property as a result of environmental contamination, investigation, cleanup, or related matters?

_____ Yes x No

If yes, describe or attach details of the limitations _____

5. Specialized Knowledge or Experience. As the User of this ESA, 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, such that you would have specialized knowledge about chemicals and processes used by this type of business?

_____ Yes x No

If yes, describe or attach details of your specialized knowledge or experience _____

6. Relationship of Purchase Price to Fair Market Value of Property. Does the purchase price being paid for this property reasonably reflect the fair market value of the property? If you conclude that there is a difference, do you have any reason to believe that the reduced purchase price may be related to contamination known or believed to be present at the property?

_____ Yes, I have reason to believe that the purchase price for the property has been reduced in comparison with the fair market value due to contamination known or believed to be present at the property?

 x No, I have no reason to believe that the purchase price for the property has been reduced in comparison with the fair market value due to contamination known or believed to be present at the property?

_____ Not applicable. User is not involved in a purchase of the property.



7. Commonly Known or Reasonably Ascertainable Information. Are you aware of commonly known or reasonably ascertainable information about the property that would help the Environmental Professional to identify conditions indicative of releases or threatened releases of hazardous substances or petroleum products? For example:

Do you know the past uses of the property?

☒ Yes (describe) Agricultural _____

_____ No

Do you know of chemicals, hazardous substances or petroleum products that are present or once were present at the property?

_____ Yes (describe) _____

☒ No

Do you know of spills or other releases of chemicals, hazardous substances or petroleum products that have taken place at the property?

_____ Yes (describe) _____

☒ No

Do you know of any environmental cleanups that have taken place at the property?

_____ Yes (describe) _____

☒ No



8. The Degree of Obviousness of Contamination. E1527-13 and the federal AAI rule (40 CFR 312.31) require that the Phase I ESA consider the degree of obviousness of the presence or likely presence of contamination at the property, and the ability to detect the contamination by appropriate investigation. 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?

☐ Yes (describe) _____

☒ No

9. Availability of Previous Environmental Reports. Are you aware of previous environmental site assessment reports, other environmental reports, documents, correspondence, etc. concerning the property and its environmental condition?

☐ Yes (describe) _____

☒ No

Signature: Jason Bernstein _____

Name (printed): Jason Bernstein _____

Title: Development Manager _____

Date: 9/8/17 _____



First American Title

First American Title Company

**4750 Willow Road, #100
Pleasanton, CA 94588**

Escrow Officer:
Phone:
Fax No.:
E-Mail:

Diane Burton
(925)738-4050
(866)648-7806
dburton@firstam.com

Title Officer:
Phone:
Fax No.:
E-Mail:

Sheryl Taylor
(559)470-8819
ShTaylor@firstam.com

E-Mail Loan Documents to:

Lenders please contact the Escrow Officer for email address
for sending loan documents.

Buyer:

Quail Capital Investments, LLC

Property:

18110 Monterey Street
Morgan Hill, CA 95037

PRELIMINARY REPORT

In response to the above referenced application for a policy of title insurance, this 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 A 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 CLTA and ALTA Homeowner's Policies of Title Insurance which establish a Deductible Amount and a Maximum Dollar Limit of Liability for certain coverages are also set forth in Exhibit A. 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 A 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.

CLTA Preliminary Report Form
(Rev. 11/06)

Order Number: 0131-622280ala
Page Number: 2

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 June 29, 2017 at 7:30 A.M.

The form of Policy of title insurance contemplated by this report is:

ALTA Extended Loan Policy - 2006

ALTA Extended Owner Policy - 2006

A specific request should be made if another form or additional coverage is desired.

Title to said estate or interest at the date hereof is vested in:

ROBERT C. DOBKIN AND KATHLEEN C. DOBKIN, TRUSTEES OF THE DOBKIN FAMILY TRUST DATED 9/16/91, AS TO AN UNDIVIDED 50% AND RICHARD RAYNES, TRUSTEE OF THE RICHARD RAYNES TRUST, AS TO AN UNDIVIDED 50% INTEREST

The estate or interest in the land hereinafter described or referred to covered by this Report is:

A fee.

The Land referred to herein is described as follows:

(See attached Legal Description)

At the date hereof exceptions to coverage in addition to the printed Exceptions and Exclusions in said policy form would be as follows:

1. General and special taxes and assessments for the fiscal year 2017-2018, a lien not yet due or payable.
2. Assessment liens, if applicable, collected with the general and special taxes, including but not limited to those disclosed by the reflection of the following on the tax roll:

Community Facilities District LIBRARY JPA CFD 2013-1.

3. The lien of supplemental taxes, if any, assessed pursuant to Chapter 3.5 commencing with Section 75 of the California Revenue and Taxation Code.

4. A deed of trust to secure an original indebtedness of \$114,952.86 recorded August 30, 2002 as Document No. [16448499](#) of Official Records.

Dated: August 22, 2002
Trustor: Richard A. Raynes, an unmarried man
Trustee: Old Republic Title Company, a California corporation
Beneficiary: Robert C. Dobkin and Kathleen C. Dobkin, Trustees of the Dobkin Family Trust dated 9/16/91

Notes:

- a. If this deed of trust is to be eliminated in the policy or policies contemplated by this report/commitment, we will require all of the following prior to the recordation of any documents or the issuance of any policy of title insurance:
- Original note and deed of trust.
 - Payoff demand statement signed by all present beneficiaries.
 - Request for reconveyance signed by all present beneficiaries.
- b. If the payoff demand statement or the request for reconveyance is to be signed by a servicer, we will also require a full copy of the loan servicing agreement executed by all present beneficiaries.
- c. If any of the beneficial interest is presently held by trustees under a trust agreement, we will require a certification pursuant to Section 18500.5 of the California Probate Code in a form satisfactory to the Company

Said Deed of Trust affects the interest of the above Trustor named only.

5. An easement for permanent telecommunications and incidental purposes, recorded February 13, 2014 as Document No. [22518872](#) of Official Records.

In Favor of: Sprint Communications Company, L.P., Qwest Communications Company, LLC, Level 3 Communications, LLC, and WiTel Communications, Inc.
Affects: as described therein

The location of the easement cannot be determined from record information.

6. Any claim that the Title is subject to a trust or lien created under The Perishable Agricultural Commodities Act, 1930 (7 U.S.C. §§499a, et seq.) or the Packers and Stockyards Act (7 U.S.C. §§181 et seq.) or under similar state laws.
7. Water rights, claims or title to water, whether or not shown by the public records.
8. Rights of parties in possession.
9. Any facts, rights, interests or claims which would be disclosed by a correct ALTA/NSPS survey.

Prior to the issuance of a 2006 ALTA Extended Owner's Policy of Title without Western Regional Exceptions, The Company will require:

10. With respect to the trust referred to in the vesting:
- A certification pursuant to Section 18100.5 of the California Probate Code in a form satisfactory to the Company.
 - Copies of those excerpts from the original trust documents and amendments thereto which designate the trustee and confer upon the trustee the power to act in the pending transaction.

- c. Other requirements which the Company may impose following its review of the material required herein and other information which the Company may require.
11. An ALTA/NSPS survey of recent date which complies with the current minimum standard detail requirements for ALTA/NSPS land title surveys.

INFORMATIONAL NOTES

Note: The policy to be issued may contain an arbitration clause. When the Amount of Insurance is less than the certain dollar amount set forth in any applicable 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. If you desire to review the terms of the policy, including any arbitration clause that may be included, contact the office that issued this Commitment or Report to obtain a sample of the policy jacket for the policy that is to be issued in connection with your transaction.

1. General and special taxes and assessments for the fiscal year 2016-2017.

First Installment:	\$13,989.10, PAID
Penalty:	\$0.00
Second Installment:	\$13,989.10, PAID
Penalty:	\$0.00
Tax Rate Area:	04-011
A. P. No.:	726-25-006

The County Tax Collector could not verify the amounts shown above at this time. Please verify the amounts with the County Tax Collector prior to the close of the contemplated transaction.

2. The property covered by this report is vacant land.

3. According to the public records, there has been no conveyance of the land within a period of twenty-four months prior to the date of this report, except as follows:

None

The map attached, if any, may or may not be a survey of the land depicted hereon. First American expressly disclaims any liability for loss or damage which may result from reliance on this map except to the extent coverage for such loss or damage is expressly provided by the terms and provisions of the title insurance policy, if any, to which this map is attached.

LEGAL DESCRIPTION

Real property in the City of Morgan Hill , County of Santa Clara, State of California, described as follows:

A PORTION OF THE LAGUNA SECA RANCHO LYING WEST OF THE SOUTHERN PACIFIC TRANSPORTATION COMPANY RIGHT OF WAY AND EAST OF THE MONTEREY STREET RIGHT OF WAY, DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE EASTERLY RIGHT OF WAY OF MONTEREY STREET AS ESTABLISHED BY GRANT DEED RECORDED AUGUST 31, 1938, IN [BOOK 893, OFFICIAL RECORDS, PAGE 167](#), SANTA CLARA COUNTY RECORDS, SAID POINT BEING N. 32° 46' W. 1247.24 FEET FROM THE MOST SOUTHERLY POINT DESCRIBED IN SAID GRANT DEED FOR PARCEL III, AND BEING ALSO N. 32° 46' W. 119.15 FEET FROM THE MOST WESTERLY CORNER DESCRIBED IN THE GRANT DEED RECORDED ON AUGUST 15, 1956, IN [BOOK 3579, OFFICIAL RECORDS, PAGE 15](#), SANTA CLARA COUNTY RECORDS; THENCE FROM SAID POINT OF BEGINNING, ALONG THE EASTERLY RIGHT OF WAY LINE OF MONTEREY STREET, N. 32° 46' W. 478.90 FEET; THENCE ALONG A CURVE TO THE RIGHT WITH A RADIUS OF 1425 FEET, A CENTRAL ANGLE OF 28° 11', AND AN ARC LENGTH OF 700.95 FEET; THENCE N. 04° 35' W. 12.33 FEET TO THE WESTERLY RIGHT OF WAY LINE OF THE LANDS OF SOUTHERN PACIFIC TRANSPORTATION COMPANY; THENCE ALONG SAID RIGHT OF WAY, S. 39° 34' 30" E. 1171.04 FEET; AND THENCE S. 57° 14' W. 313.59 FEET TO THE EASTERLY RIGHT OF WAY LINE OF MONTEREY STREET AT THE POINT OF BEGINNING.

APN: 726-25-006



NOTICE

Section 12413.1 of the California Insurance Code, effective January 1, 1990, requires that any title insurance company, underwritten title company, or controlled escrow company handling funds in an escrow or sub-escrow capacity, wait a specified number of days after depositing funds, before recording any documents in connection with the transaction or disbursing funds. This statute allows for funds deposited by wire transfer to be disbursed the same day as deposit. In the case of cashier's checks or certified checks, funds may be disbursed the next day after deposit. In order to avoid unnecessary delays of three to seven days, or more, please use wire transfer, cashier's checks, or certified checks whenever possible.

EXHIBIT A
LIST OF PRINTED EXCEPTIONS AND EXCLUSIONS (BY POLICY TYPE)

CLTA 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 or which may be asserted by persons in possession thereof.
3. Easements, liens or encumbrances, or claims thereof, 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.

CLTA/ALTA HOMEOWNER'S POLICY OF TITLE INSURANCE (12-02-13)
EXCLUSIONS

In addition to the Exceptions in Schedule B, You are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of those portions of any law or government regulation concerning:
 - a. building;
 - b. zoning;
 - c. land use;

- d. improvements on the Land;
 - e. land division; and
 - f. environmental protection.
- This Exclusion does not limit the coverage described in Covered Risk 8.a., 14, 15, 16, 18, 19, 20, 23 or 27.
- 2. The failure of Your existing structures, or any part of them, to be constructed in accordance with applicable building codes. This Exclusion does not limit the coverage described in Covered Risk 14 or 15.
 - 3. The right to take the Land by condemning it. This Exclusion does not limit the coverage described in Covered Risk 17.
 - 4. Risks:
 - a. that are created, allowed, or agreed to by You, whether or not they are recorded in the Public Records;
 - b. that are Known to You at the Policy Date, but not to Us, unless they are recorded in the Public Records at the Policy Date;
 - c. that result in no loss to You; or
 - d. that first occur after the Policy Date - this does not limit the coverage described in Covered Risk 7, 8.e., 25, 26, 27 or 28.
 - 5. Failure to pay value for Your Title.
 - 6. Lack of a right:
 - a. to any land outside the area specifically described and referred to in paragraph 3 of Schedule A; and
 - b. in streets, alleys, or waterways that touch the Land.

This Exclusion does not limit the coverage described in Covered Risk 11 or 21.
 - 7. The transfer of the Title to You is invalid as a preferential transfer or as a fraudulent transfer or conveyance under federal bankruptcy, state insolvency, or similar creditors' rights laws.
 - 8. Contamination, explosion, fire, flooding, vibration, fracturing, earthquake, or subsidence.
 - 9. Negligence by a person or an Entity exercising a right to extract or develop minerals, water, or any other substances.

LIMITATIONS ON COVERED RISKS

Your insurance for the following Covered Risks is limited on the Owner's Coverage Statement as follows:
For Covered Risk 16, 18, 19, and 21 Your Deductible Amount and Our Maximum Dollar Limit of Liability shown in Schedule A.
The deductible amounts and maximum dollar limits shown on Schedule A are as follows:

	<u>Your Deductible Amount</u>	<u>Our Maximum Dollar Limit of Liability</u>
Covered Risk 16:	1% of Policy Amount Shown in Schedule A or \$2,500 (whichever is less)	\$10,000
Covered Risk 18:	1% of Policy Amount Shown in Schedule A or \$5,000 (whichever is less)	\$25,000
Covered Risk 19:	1% of Policy Amount Shown in Schedule A or \$5,000 (whichever is less)	\$25,000
Covered Risk 21:	1% of Policy Amount Shown in Schedule A or \$2,500 (whichever is less)	\$5,000

2006 ALTA LOAN POLICY (06-17-06)

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 that arise by reason of:

- 1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to
 - (i) the occupancy, use, or enjoyment of the Land;
 - (ii) the character, dimensions, or location of any improvement erected on the Land;
 - (iii) the subdivision of land; or
 - (iv) environmental protection;

or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

(b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

- 2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
- 3. Defects, liens, encumbrances, adverse claims, or other matters
 - (a) 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 (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or
 - (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.
 5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that 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, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is
 - (a) a fraudulent conveyance or fraudulent transfer, or
 - (b) a preferential transfer for any reason not stated in Covered Risk 13(b) of this policy.
 7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

EXCEPTIONS FROM COVERAGE

[Except as provided in Schedule B - Part II, [t[or T]his policy does not insure against loss or damage, and the Company will not pay costs, attorneys' fees or expenses, that arise by reason of:

[PART I

[The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

1. (a) Taxes or assessments that 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; (b) proceedings by a public agency that 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 that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and 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.

PART II

In addition to the matters set forth in Part I of this Schedule, the Title is subject to the following matters, and the Company insures against loss or damage sustained in the event that they are not subordinate to the lien of the Insured Mortgage:]

2006 ALTA OWNER'S POLICY (06-17-06)

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 that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to
 - (i) the occupancy, use, or enjoyment of the Land;
 - (ii) the character, dimensions, or location of any improvement erected on the Land;
 - (iii) the subdivision of land; or
 - (iv) environmental protection;or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
- (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
 - (a) 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 (however, this does not modify or limit the coverage provided under Covered Risk 9 or 10); or
 - (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.
4. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction vesting the Title as shown in Schedule A, is
- (a) a fraudulent conveyance or fraudulent transfer, or
 - (b) a preferential transfer for any reason not stated in Covered Risk 9 of this policy.
5. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage, and the Company will not pay costs, attorneys' fees or expenses, that arise by reason of: [The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

1. (a) Taxes or assessments that 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; (b) proceedings by a public agency that 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 that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and 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.
7. [Variable exceptions such as taxes, easements, CC&R's, etc. shown here.]

ALTA EXPANDED COVERAGE RESIDENTIAL LOAN POLICY (07-26-10)

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 that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to
 - (i) the occupancy, use, or enjoyment of the Land;
 - (ii) the character, dimensions, or location of any improvement erected on the Land;
 - (iii) the subdivision of land; or
 - (iv) environmental protection;

or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.

(b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
 - (a) 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 (however, this does not modify or limit the coverage provided under Covered Risk 11, 16, 17, 18, 19, 20, 21, 22, 23, 24, 27 or 28); or
 - (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that 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. This Exclusion does not modify or limit the coverage provided in Covered Risk 26.
6. Any claim of invalidity, unenforceability or lack of priority of the lien of the Insured Mortgage as to Advances or modifications made after the

Insured has Knowledge that the vestee shown in Schedule A is no longer the owner of the estate or interest covered by this policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11.

7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching subsequent to Date of Policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11(b) or 25.
8. The failure of the residential structure, or any portion of it, to have been constructed before, on or after Date of Policy in accordance with applicable building codes. This Exclusion does not modify or limit the coverage provided in Covered Risk 5 or 6.
9. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is
 - (a) a fraudulent conveyance or fraudulent transfer, or
 - (b) a preferential transfer for any reason not stated in Covered Risk 27(b) of this policy.
10. Contamination, explosion, fire, flooding, vibration, fracturing, earthquake, or subsidence.
11. Negligence by a person or an Entity exercising a right to extract or develop minerals, water, or any other substances.



First American Title

Privacy Information

We Are Committed to Safeguarding Customer Information

In order to better serve your needs now and in the future, we may ask you to provide us with certain information. We understand that you may be concerned about what we will do with such information - particularly any personal or financial information. We agree that you have a right to know how we will utilize the personal information you provide to us. Therefore, together with our subsidiaries we have adopted this Privacy Policy to govern the use and handling of your personal information.

Applicability

This Privacy Policy governs our use of the information that you provide to us. It does not govern the manner in which we may use information we have obtained from any other source, such as information obtained from a public record or from another person or entity. First American has also adopted broader guidelines that govern our use of personal information regardless of its source. First American calls these guidelines its Fair Information Values.

Types of Information

Depending upon which of our services you are utilizing, the types of nonpublic personal information that we may collect include:

- Information we receive from you on applications, forms and in other communications to us, whether in writing, in person, by telephone or any other means;
- Information about your transactions with us, our affiliated companies, or others; and
- Information we receive from a consumer reporting agency.

Use of Information

We request information from you for our own legitimate business purposes and not for the benefit of any nonaffiliated party. Therefore, we will not release your information to nonaffiliated parties except: (1) as necessary for us to provide the product or service you have requested of us; or (2) as permitted by law. We may, however, store such information indefinitely, including the period after which any customer relationship has ceased. Such information may be used for any internal purpose, such as quality control efforts or customer analysis. We may also provide all of the types of nonpublic personal information listed above to one or more of our affiliated companies. Such affiliated companies include financial service providers, such as title insurers, property and casualty insurers, and trust and investment advisory companies, or companies involved in real estate services, such as appraisal companies, home warranty companies and escrow companies. Furthermore, we may also provide all the information we collect, as described above, to companies that perform marketing services on our behalf, on behalf of our affiliated companies or to other financial institutions with whom we or our affiliated companies have joint marketing agreements.

Former Customers

Even if you are no longer our customer, our Privacy Policy will continue to apply to you.

Confidentiality and Security

We will use our best efforts to ensure that no unauthorized parties have access to any of your information. We restrict access to nonpublic personal information about you to those individuals and entities who need to know that information to provide products or services to you. We will use our best efforts to train and oversee our employees and agents to ensure that your information will be handled responsibly and in accordance with this Privacy Policy and First American's Fair Information Values. We currently maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

Information Obtained Through Our Web Site

First American Financial Corporation is sensitive to privacy issues on the Internet. We believe it is important you know how we treat the information about you we receive on the Internet.

In general, you can visit First American or its affiliates' Web sites on the World Wide Web without telling us who you are or revealing any information about yourself. Our Web servers collect the domain names, not the e-mail addresses, of visitors. This information is aggregated to measure the number of visits, average time spent on the site, pages viewed and similar information. First American uses this information to measure the use of our site and to develop ideas to improve the content of our site.

There are times, however, when we may need information from you, such as your name and email address. When information is needed, we will use our best efforts to let you know at the time of collection how we will use the personal information. Usually, the personal information we collect is used only by us to respond to your inquiry, process an order or allow you to access specific account/profile information. If you choose to share any personal information with us, we will only use it in accordance with the policies outlined above.

Business Relationships

First American Financial Corporation's site and its affiliates' sites may contain links to other Web sites. While we try to link only to sites that share our high standards and respect for privacy, we are not responsible for the content or the privacy practices employed by other sites.

Cookies

Some of First American's Web sites may make use of "cookie" technology to measure site activity and to customize information to your personal tastes. A cookie is an element of data that a Web site can send to your browser, which may then store the cookie on your hard drive.

FirstAm.com uses stored cookies. The goal of this technology is to better serve you when visiting our site, save you time when you are here and to provide you with a more meaningful and productive Web site experience.

Fair Information Values

Fairness We consider consumer expectations about their privacy in all our businesses. We only offer products and services that assure a favorable balance between consumer benefits and consumer privacy.

Public Record We believe that an open public record creates significant value for society, enhances consumer choice and creates consumer opportunity. We actively support an open public record and emphasize its importance and contribution to our economy.

Use We believe we should behave responsibly when we use information about a consumer in our business. We will obey the laws governing the collection, use and dissemination of data.

Accuracy We will take reasonable steps to help assure the accuracy of the data we collect, use and disseminate. Where possible, we will take reasonable steps to correct inaccurate information. When, as with the public record, we cannot correct inaccurate information, we will take all reasonable steps to assist consumers in identifying the source of the erroneous data so that the consumer can secure the required corrections.

Education We endeavor to educate the users of our products and services, our employees and others in our industry about the importance of consumer privacy. We will instruct our employees on our fair information values and on the responsible collection and use of data. We will encourage others in our industry to collect and use information in a responsible manner.

Security We will maintain appropriate facilities and systems to protect against unauthorized access to and corruption of the data we maintain.

Appendix D

ENVIRONMENTAL AGENCY DATABASE SEARCH REPORT

CV - Morgan Hill D

18110 Monterey Road
Morgan Hill, CA 95037

Inquiry Number: 5029315.2s
August 22, 2017

The EDR Radius Map™ Report with GeoCheck®



6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
Executive Summary	ES1
Overview Map	2
Detail Map	3
Map Findings Summary	4
Map Findings	8
Orphan Summary	72
Government Records Searched/Data Currency Tracking	GR-1
 <u>GEOCHECK ADDENDUM</u>	
Physical Setting Source Addendum	A-1
Physical Setting Source Summary	A-2
Physical Setting SSURGO Soil Map	A-5
Physical Setting Source Map	A-9
Physical Setting Source Map Findings	A-11
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.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2017 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

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) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

18110 MONTEREY ROAD
MORGAN HILL, CA 95037

COORDINATES

Latitude (North): 37.1392560 - 37° 8' 21.32"
Longitude (West): 121.6610840 - 121° 39' 39.90"
Universal Transverse Mercator: Zone 10
UTM X (Meters): 618919.8
UTM Y (Meters): 4110956.2
Elevation: 357 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map: 5640402 MORGAN HILL, CA
Version Date: 2012

South Map: 5640078 MOUNT MADONNA, CA
Version Date: 2012

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from: 20140609
Source: USDA

MAPPED SITES SUMMARY

Target Property Address:
18110 MONTEREY ROAD
MORGAN HILL, CA 95037

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
1	ABBOTT SERVICES	18055 MONTEREY	EDR Hist Auto	Higher	147, 0.028, South
A2	ROCCIS BODY SHOP	17995 N MONTEREY	EDR Hist Auto	Lower	467, 0.088, South
B3	VELODYNE ACOUSTICS I	345 DIGITAL DR	CUPA Listings, HAZNET	Higher	523, 0.099, ESE
A4	TONY GAITHER AUTO RE	17995 N MONTEREY RD	EDR Hist Auto	Lower	545, 0.103, SSE
A5	VOLPI/GAITHER PROP.	17995 MONTEREY RD	LUST, HIST LUST	Lower	545, 0.103, SSE
A6	VOLPI/GAITHER PROP.	17995 MONTEREY RD	LUST, SWEEPS UST, CA FID UST, CUPA Listings, HIST...	Lower	545, 0.103, SSE
C7	MORGAN HILL FIRE DEP	18300 OLD MONTEREY R	CUPA Listings, EMI, HAZNET	Lower	629, 0.119, NW
C8	D & T CONSTRUCTION C	18375 OLD MONTEREY R	SWEEPS UST, HIST UST, CA FID UST	Lower	700, 0.133, NW
C9	D & T CONSTRUCTION C	18375 OLD MONTEREY R	HIST UST	Lower	700, 0.133, NW
B10	MINDCRAFT DENTAL CRE	328 DIGITAL DR	CUPA Listings	Higher	712, 0.135, ESE
11	TERRASAT COMMUNICATI	315 DIGITAL DR	CUPA Listings	Higher	833, 0.158, ESE
D12	MDA PRECISION LLC	360 DIGITAL DR	CUPA Listings	Higher	921, 0.174, East
E13	STAR MOTOR IMPORTS	17945 MONTEREY RD B	CUPA Listings	Lower	925, 0.175, SSE
E14	A1 MUFFLER & BRAKE	17945 MONTEREY RD D	CUPA Listings	Lower	925, 0.175, SSE
D15	PACIFIC CAPACITOR	288 DIGITAL DR	CUPA Listings	Higher	944, 0.179, ESE
D16	FLUID INDUSTRIAL MAN	280 DIGITAL DR	CUPA Listings, HAZNET	Higher	1035, 0.196, ESE
E17	PRONTO AUTO REPAIR	17920 MONTEREY RD	CUPA Listings	Lower	1127, 0.213, SSE
F18	ARCO FACILITY NO 654	18605 MONTEREY RD	RCRA NonGen / NLR, CUPA Listings	Lower	1136, 0.215, NNW
F19	MORGAN HILL FUEL	18605 MONTEREY RD	UST	Lower	1136, 0.215, NNW
E20	SHELL - 17905 MONTER	17905 MONTEREY RD.	LUST, HIST CORTESE	Lower	1192, 0.226, SSE
E21	MORGAN HILL GAS & AU	17905 MONTEREY ST	UST	Lower	1192, 0.226, SSE
E22	MONTEREY/WRIGHT	17905 MONTEREY ST	HIST UST	Lower	1192, 0.226, SSE
G23	MICHAEL K SINGH DDS	18181 BUTTERFIELD BL	CUPA Listings	Higher	1240, 0.235, East
G24	FERDINAND D MANALILI	18181 BUTTERFIELD BL	CUPA Listings	Higher	1240, 0.235, East
H25	UNITED SHELL, INC DB	17905 MONTEREY RD	UST	Lower	1247, 0.236, SSE
H26	MONTEREY/WRIGHT	17905 N MONTEREY RD	SWEEPS UST, HIST UST, CA FID UST	Lower	1247, 0.236, SSE
H27	SHELL SERVICE STATIO	17905 N MONTEREY RD	RCRA-SQG	Lower	1247, 0.236, SSE
H28	SHELL	17905 MONTEREY RD	LUST, HIST LUST, CUPA Listings	Lower	1247, 0.236, SSE
29	TENCATE ADVANCE COMP	18410 BUTTERFIELD BL	RCRA-LQG, ENVIROSTOR, WDS	Higher	1838, 0.348, NNE
30	VINTAGE VALLEY PROPE	17780 MONTEREY	HIST CORTESE	Lower	1927, 0.365, SSE
I31	CIENEGA TRUST PROPER	95 E CENTRAL AVE	LUST, HIST LUST	Lower	2119, 0.401, SE
I32	CIENEGA TRUST PROPER	95 E CENTRAL AVE	LUST, SWEEPS UST, HIST UST, CA FID UST	Lower	2119, 0.401, SE
I33	TRI-PALLET, INC. (O	60 EAST CENTRAL AVE	LUST, HIST LUST, Cortese	Lower	2229, 0.422, SE
I34	TRI-PALLET, INC. (O	60 EAST CENTRAL AVE	ENF, HIST CORTESE	Lower	2229, 0.422, SE
35	DEPRESSURIZED TECHNO	335 COCHRANE CIR	RCRA-SQG, FINDS, ECHO, ICE, HWP	Higher	2505, 0.474, NNW
36	MADRONE LAND CORPORA	645 COCHRANE ROAD	ENVIROSTOR, SLIC, DEED, HIST CORTESE	Higher	2887, 0.547, North
37	PHOTOTEK	18450 SUTTER BLVD	RCRA-SQG, ENVIROSTOR, HAZNET	Higher	3425, 0.649, NNE
38	SUNSWEET	91 EAST 4TH STREET	ENVIROSTOR	Lower	4535, 0.859, SE
39	RYAN PROPERTIES	E. MAIN AVE. & EAST	ENVIROSTOR	Higher	4716, 0.893, East

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-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

EXECUTIVE SUMMARY

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

INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land
SLIC..... Statewide SLIC Cases

State and tribal registered storage tank lists

FEMA UST..... Underground Storage Tank Listing
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 Brownfields 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
DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations
ODI..... Open Dump Inventory
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

EXECUTIVE SUMMARY

CDL..... Clandestine Drug Labs
 Toxic Pits..... Toxic Pits Cleanup Act Sites
 US CDL..... National Clandestine Laboratory Register

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

FUDS..... Formerly Used Defense Sites
 DOD..... Department of Defense Sites
 SCDR 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
 DOCKET HWC..... Hazardous Waste Compliance Docket Listing
 ECHO..... Enforcement & Compliance History Information

EXECUTIVE SUMMARY

UXO.....	Unexploded Ordnance Sites
FUELS PROGRAM.....	EPA Fuels Program Registered Listing
CA BOND EXP. PLAN.....	Bond Expenditure Plan
DRYCLEANERS.....	Cleaner Facilities
EMI.....	Emissions Inventory Data
ENF.....	Enforcement Action Listing
Financial Assurance.....	Financial Assurance Information Listing
HAZNET.....	Facility and Manifest Data
ICE.....	ICE
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
SAN JOSE HAZMAT.....	Hazardous Material Facilities
UIC.....	UIC Listing
WASTEWATER PITS.....	Oil Wastewater Pits Listing
WDS.....	Waste Discharge System
WIP.....	Well Investigation Program Case List

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP.....	EDR Proprietary Manufactured Gas Plants
EDR Hist Cleaner.....	EDR Exclusive Historic Dry 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.

EXECUTIVE SUMMARY

STANDARD ENVIRONMENTAL RECORDS

Federal RCRA generators list

RCRA-SQG: 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.

A review of the RCRA-SQG list, as provided by EDR, and dated 12/12/2016 has revealed that there is 1 RCRA-SQG site within approximately 0.25 miles of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
SHELL SERVICE STATIO	17905 N MONTEREY RD	SSE 1/8 - 1/4 (0.236 mi.)	H27	38

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 identifies 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 07/31/2017 has revealed that there are 5 ENVIROSTOR sites within approximately 1 mile of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
TENCATE ADVANCE COMP Facility Id: 71004096 Status: Inactive - Needs Evaluation	18410 BUTTERFIELD BL	NNE 1/4 - 1/2 (0.348 mi.)	29	41
MADRONE LAND CORPORA Facility Id: 43010016 Status: Refer: RWQCB	645 COCHRANE ROAD	N 1/2 - 1 (0.547 mi.)	36	62
PHOTOTEK Facility Id: 71003458 Status: Inactive - Needs Evaluation	18450 SUTTER BLVD	NNE 1/2 - 1 (0.649 mi.)	37	64
RYAN PROPERTIES Facility Id: 43010015 Status: No Further Action	E. MAIN AVE. & EAST	E 1/2 - 1 (0.893 mi.)	39	70
<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
SUNSWEET	91 EAST 4TH STREET	SE 1/2 - 1 (0.859 mi.)	38	69

EXECUTIVE SUMMARY

Facility Id: 43200019
Status: Refer: Other Agency

State and tribal leaking storage tank lists

LUST: 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.

A review of the LUST list, as provided by EDR, has revealed that there are 7 LUST sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
VOLPI/GAITHER PROP. Database: LUST REG 3, Date of Government Version: 05/19/2003 Status: Case Closed Global ID: T0608558692	17995 MONTEREY RD	SSE 0 - 1/8 (0.103 mi.)	A5	9
VOLPI/GAITHER PROP. Database: LUST SANTA CLARA, Date of Government Version: 03/03/2014 Database: LUST, Date of Government Version: 03/13/2017 Status: Completed - Case Closed Date Closed: 08/09/1993 Global Id: T0608558692 SCVWD ID: 09S3E20J02F	17995 MONTEREY RD	SSE 0 - 1/8 (0.103 mi.)	A6	11
SHELL - 17905 MONTER Database: LUST SANTA CLARA, Date of Government Version: 03/03/2014 Database: LUST, Date of Government Version: 03/13/2017 Status: Completed - Case Closed Global Id: T0608502185 SCVWD ID: 09S3E20J01F	17905 MONTEREY RD.	SSE 1/8 - 1/4 (0.226 mi.)	E20	25
SHELL Database: LUST REG 3, Date of Government Version: 05/19/2003 Status: Pollution Characterization Global ID: T0608502185	17905 MONTEREY RD	SSE 1/8 - 1/4 (0.236 mi.)	H28	39
CIENEGA TRUST PROPER Database: LUST REG 3, Date of Government Version: 05/19/2003 Status: Case Closed Global ID: T0608502378	95 E CENTRAL AVE	SE 1/4 - 1/2 (0.401 mi.)	I31	50
CIENEGA TRUST PROPER Database: LUST SANTA CLARA, Date of Government Version: 03/03/2014 Database: LUST, Date of Government Version: 03/13/2017 Status: Completed - Case Closed Date Closed: 12/16/1998 Global Id: T0608502378 SCVWD ID: 09S3E21M01F	95 E CENTRAL AVE	SE 1/4 - 1/2 (0.401 mi.)	I32	51
TRI-PALLET, INC. (O Database: LUST SANTA CLARA, Date of Government Version: 03/03/2014 Database: LUST REG 3, Date of Government Version: 05/19/2003 Database: LUST, Date of Government Version: 03/13/2017 Status: Completed - Case Closed	60 EAST CENTRAL AVE	SE 1/4 - 1/2 (0.422 mi.)	I33	54

EXECUTIVE SUMMARY

Status: Case Closed
 Date Closed: 10/21/1998
 Global Id: T0608580603
 SCVWD ID: 09S3E21N02F
 Global ID: T0608580603

HIST LUST: 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.

A review of the HIST LUST list, as provided by EDR, and dated 03/29/2005 has revealed that there are 4 HIST LUST sites within approximately 0.5 miles of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
VOLPI/GAITHER PROP. SCVWD ID: 09S3E20J02	17995 MONTEREY RD	SSE 0 - 1/8 (0.103 mi.)	A5	9
SHELL SCVWD ID: 09S3E20J01	17905 MONTEREY RD	SSE 1/8 - 1/4 (0.236 mi.)	H28	39
CIENEGA TRUST PROPER SCVWD ID: 09S3E21M01	95 E CENTRAL AVE	SE 1/4 - 1/2 (0.401 mi.)	I31	50
TRI-PALLET, INC. (O SCVWD ID: 09S3E21N02	60 EAST CENTRAL AVE	SE 1/4 - 1/2 (0.422 mi.)	I33	54

State and tribal registered storage tank lists

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

A review of the UST list, as provided by EDR, has revealed that there are 3 UST sites within approximately 0.25 miles of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
MORGAN HILL FUEL Database: UST, Date of Government Version: 03/12/2017	18605 MONTEREY RD	NNW 1/8 - 1/4 (0.215 mi.)	F19	24
MORGAN HILL GAS & AU Database: UST, Date of Government Version: 03/12/2017	17905 MONTEREY ST	SSE 1/8 - 1/4 (0.226 mi.)	E21	30
UNITED SHELL, INC DB Database: UST, Date of Government Version: 03/12/2017 Facility Id: 82 Facility Id: 43-004-007325	17905 MONTEREY RD	SSE 1/8 - 1/4 (0.236 mi.)	H25	32

EXECUTIVE SUMMARY

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Registered Storage Tanks

SWEEPS UST: 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.

A review of the SWEEPS UST list, as provided by EDR, and dated 06/01/1994 has revealed that there are 3 SWEEPS UST sites within approximately 0.25 miles of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
VOLPI/GAITHER PROP. Comp Number: 317995	17995 MONTEREY RD	SSE 0 - 1/8 (0.103 mi.)	A6	11
D & T CONSTRUCTION C Comp Number: 783	18375 OLD MONTEREY R	NW 1/8 - 1/4 (0.133 mi.)	C8	17
MONTEREY/WRIGHT Status: A Tank Status: A Comp Number: 19731	17905 N MONTEREY RD	SSE 1/8 - 1/4 (0.236 mi.)	H26	33

HIST UST: Historical UST Registered Database.

A review of the HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there are 4 HIST UST sites within approximately 0.25 miles of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
D & T CONSTRUCTION C	18375 OLD MONTEREY R	NW 1/8 - 1/4 (0.133 mi.)	C8	17
D & T CONSTRUCTION C Facility Id: 00000000783	18375 OLD MONTEREY R	NW 1/8 - 1/4 (0.133 mi.)	C9	19
MONTEREY/WRIGHT Facility Id: 00000019731	17905 MONTEREY ST	SSE 1/8 - 1/4 (0.226 mi.)	E22	31
MONTEREY/WRIGHT	17905 N MONTEREY RD	SSE 1/8 - 1/4 (0.236 mi.)	H26	33

CA FID UST: The Facility Inventory Database contains active and inactive underground storage tank locations. The source is the State Water Resource Control Board.

A review of the CA FID UST list, as provided by EDR, and dated 10/31/1994 has revealed that there are 3 CA FID UST sites within approximately 0.25 miles of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
VOLPI/GAITHER PROP. Facility Id: 43001592 Status: I	17995 MONTEREY RD	SSE 0 - 1/8 (0.103 mi.)	A6	11
D & T CONSTRUCTION C Facility Id: 43011903 Status: I	18375 OLD MONTEREY R	NW 1/8 - 1/4 (0.133 mi.)	C8	17
MONTEREY/WRIGHT	17905 N MONTEREY RD	SSE 1/8 - 1/4 (0.236 mi.)	H26	33

EXECUTIVE SUMMARY

Facility Id: 43001306
Status: A

Other Ascertainable Records

RCRA NonGen / NLR: 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.

A review of the RCRA NonGen / NLR list, as provided by EDR, and dated 12/12/2016 has revealed that there is 1 RCRA NonGen / NLR site within approximately 0.25 miles of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
ARCO FACILITY NO 654	18605 MONTEREY RD	NNW 1/8 - 1/4 (0.215 mi.)	F18	23

Cortese: 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).

A review of the Cortese list, as provided by EDR, and dated 12/28/2016 has revealed that there is 1 Cortese site within approximately 0.5 miles of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
TRI-PALLETT, INC. (O	60 EAST CENTRAL AVE	SE 1/4 - 1/2 (0.422 mi.)	I33	54

CUPA Listings: 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.

A review of the CUPA Listings list, as provided by EDR, has revealed that there are 15 CUPA Listings sites within approximately 0.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
VELODYNE ACOUSTICS I Database: CUPA SANTA CLARA, Date of Government Version: 02/22/2017	345 DIGITAL DR	ESE 0 - 1/8 (0.099 mi.)	B3	8
MINDCRAFT DENTAL CRE Database: CUPA SANTA CLARA, Date of Government Version: 02/22/2017	328 DIGITAL DR	ESE 1/8 - 1/4 (0.135 mi.)	B10	19
TERRASAT COMMUNICATI Database: CUPA SANTA CLARA, Date of Government Version: 02/22/2017	315 DIGITAL DR	ESE 1/8 - 1/4 (0.158 mi.)	11	20
MDA PRECISION LLC Database: CUPA SANTA CLARA, Date of Government Version: 02/22/2017	360 DIGITAL DR	E 1/8 - 1/4 (0.174 mi.)	D12	20
PACIFIC CAPACITOR Database: CUPA SANTA CLARA, Date of Government Version: 02/22/2017	288 DIGITAL DR	ESE 1/8 - 1/4 (0.179 mi.)	D15	21
FLUID INDUSTRIAL MAN Database: CUPA SANTA CLARA, Date of Government Version: 02/22/2017	280 DIGITAL DR	ESE 1/8 - 1/4 (0.196 mi.)	D16	21
MICHAEL K SINGH DDS Database: CUPA SANTA CLARA, Date of Government Version: 02/22/2017	18181 BUTTERFIELD BL	E 1/8 - 1/4 (0.235 mi.)	G23	32

EXECUTIVE SUMMARY

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
FERDINAND D MANALILI Database: CUPA SANTA CLARA, Date of Government Version: 02/22/2017	18181 BUTTERFIELD BL	E 1/8 - 1/4 (0.235 mi.)	G24	32
<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
VOLPI/GAITHER PROP. Database: CUPA SANTA CLARA, Date of Government Version: 02/22/2017	17995 MONTEREY RD	SSE 0 - 1/8 (0.103 mi.)	A6	11
MORGAN HILL FIRE DEP Database: CUPA SANTA CLARA, Date of Government Version: 02/22/2017	18300 OLD MONTEREY R	NW 0 - 1/8 (0.119 mi.)	C7	14
STAR MOTOR IMPORTS Database: CUPA SANTA CLARA, Date of Government Version: 02/22/2017	17945 MONTEREY RD B	SSE 1/8 - 1/4 (0.175 mi.)	E13	20
A1 MUFFLER & BRAKE Database: CUPA SANTA CLARA, Date of Government Version: 02/22/2017	17945 MONTEREY RD D	SSE 1/8 - 1/4 (0.175 mi.)	E14	21
PRONTO AUTO REPAIR Database: CUPA SANTA CLARA, Date of Government Version: 02/22/2017	17920 MONTEREY RD	SSE 1/8 - 1/4 (0.213 mi.)	E17	22
ARCO FACILITY NO 654 Database: CUPA SANTA CLARA, Date of Government Version: 02/22/2017	18605 MONTEREY RD	NNW 1/8 - 1/4 (0.215 mi.)	F18	23
SHELL Database: CUPA SANTA CLARA, Date of Government Version: 02/22/2017	17905 MONTEREY RD	SSE 1/8 - 1/4 (0.236 mi.)	H28	39

HIST CORTESE: 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.

A review of the HIST CORTESE list, as provided by EDR, and dated 04/01/2001 has revealed that there are 4 HIST CORTESE sites within approximately 0.5 miles of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
VOLPI/GAITHER PROP. Reg Id: 989	17995 MONTEREY RD	SSE 0 - 1/8 (0.103 mi.)	A6	11
SHELL - 17905 MONTEREY Reg Id: 585	17905 MONTEREY RD.	SSE 1/8 - 1/4 (0.226 mi.)	E20	25
VINTAGE VALLEY PROPE Reg Id: 467	17780 MONTEREY	SSE 1/4 - 1/2 (0.365 mi.)	30	50
TRI-PALLET, INC. (O) Reg Id: 591 Reg Id: 3 432038001	60 EAST CENTRAL AVE	SE 1/4 - 1/2 (0.422 mi.)	I34	58

HWP: Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

A review of the HWP list, as provided by EDR, and dated 05/22/2017 has revealed that there is 1 HWP site within approximately 1 mile of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
DEPRESSURIZED TECHNO	335 COCHRANE CIR	NNW 1/4 - 1/2 (0.474 mi.)	35	59

EXECUTIVE SUMMARY

EPA Id: CAD983665068
Cleanup Status: CLOSED

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR Hist Auto: 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.

A review of the EDR Hist Auto list, as provided by EDR, has revealed that there are 3 EDR Hist Auto sites within approximately 0.125 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
ABBOTT SERVICES	18055 MONTEREY	S 0 - 1/8 (0.028 mi.)	1	8
<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
ROCCIS BODY SHOP	17995 N MONTEREY	S 0 - 1/8 (0.088 mi.)	A2	8
TONY GAITHER AUTO RE	17995 N MONTEREY RD	SSE 0 - 1/8 (0.103 mi.)	A4	9

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 3 records.

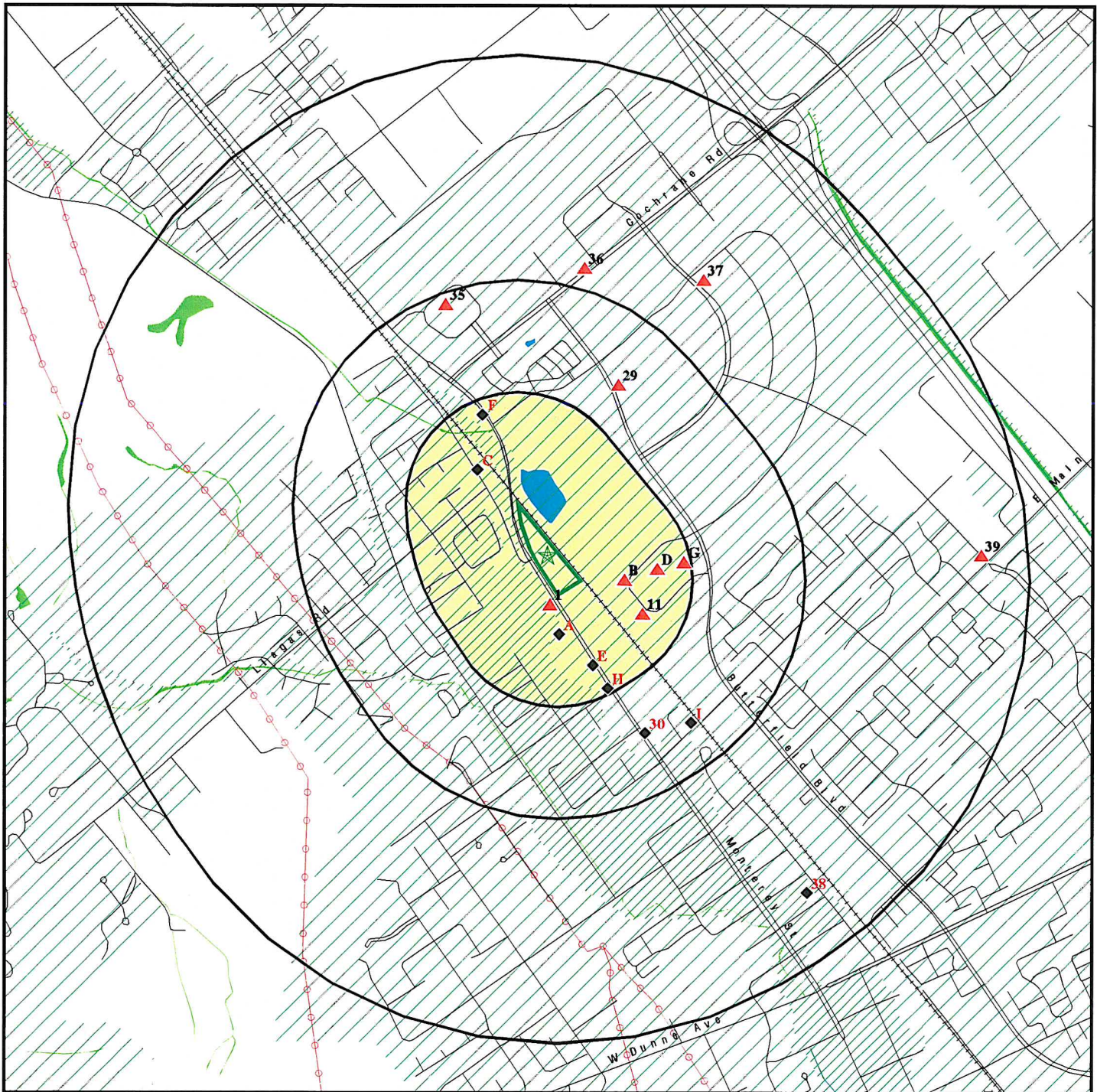
Site Name

Database(s)

FORMER WHITE GASOLINE
CITY OF MORGAN HILL PUBLIC WOR

CDL
LUST
EMI

OVERVIEW MAP - 5029315.2S









- 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
- Indian Reservations BIA
- Power transmission lines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Upgradient Area
- 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: CV - Morgan Hill D
 ADDRESS: 18110 Monterey Road
 Morgan Hill CA 95037
 LAT/LONG: 37.139256 / 121.661084

CLIENT: Stantec
 CONTACT: Matthew Sapp
 INQUIRY #: 5029315.2s
 DATE: August 22, 2017 4:12 pm

[illegible]

-  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: CV - Morgan Hill D
ADDRESS: 18110 Monterey Road
Morgan Hill CA 95037
LAT/LONG: 37.139256 / 121.661084

CLIENT: Stantec
CONTACT: Matthew Sapp
INQUIRY #: 5029315.2s
DATE: August 22, 2017 4:17 pm

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								
<i>Federal NPL site list</i>								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	TP		NR	NR	NR	NR	NR	0
<i>Federal Delisted NPL site list</i>								
Delisted NPL	1.000		0	0	0	0	NR	0
<i>Federal CERCLIS list</i>								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
<i>Federal CERCLIS NFRAP site list</i>								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
<i>Federal RCRA CORRACTS facilities list</i>								
CORRACTS	1.000		0	0	0	0	NR	0
<i>Federal RCRA non-CORRACTS TSD facilities list</i>								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
<i>Federal RCRA generators list</i>								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	1	NR	NR	NR	1
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
<i>Federal institutional controls / engineering controls registries</i>								
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
<i>Federal ERNS list</i>								
ERNS	TP		NR	NR	NR	NR	NR	0
<i>State- and tribal - equivalent NPL</i>								
RESPONSE	1.000		0	0	0	0	NR	0
<i>State- and tribal - equivalent CERCLIS</i>								
ENVIROSTOR	1.000		0	0	1	4	NR	5
<i>State and tribal landfill and/or solid waste disposal site lists</i>								
SWF/LF	0.500		0	0	0	NR	NR	0
<i>State and tribal leaking storage tank lists</i>								
LUST	0.500		2	2	3	NR	NR	7

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
SLIC	0.500		0	0	0	NR	NR	0
HIST LUST	0.500		1	1	2	NR	NR	4
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		0	3	NR	NR	NR	3
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	TP		NR	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	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	TP		NR	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	TP		NR	NR	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
US CDL	TP		NR	NR	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
SWEEPS UST	0.250		1	2	NR	NR	NR	3
HIST UST	0.250		0	4	NR	NR	NR	4
CA FID UST	0.250		1	2	NR	NR	NR	3
Local Land Records								
LIENS	TP		NR	NR	NR	NR	NR	0
LIENS 2	TP		NR	NR	NR	NR	NR	0
DEED	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
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0
CHMIRS	TP		NR	NR	NR	NR	NR	0
LDS	TP		NR	NR	NR	NR	NR	0
MCS	TP		NR	NR	NR	NR	NR	0
SPILLS 90	TP		NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	1	NR	NR	NR	1
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	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
DOCKET HWC	TP		NR	NR	NR	NR	NR	0
ECHO	TP		NR	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	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	1	NR	NR	1
CUPA Listings	0.250		3	12	NR	NR	NR	15
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
EMI	TP		NR	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
ENF	TP		NR	NR	NR	NR	NR	0
Financial Assurance	TP		NR	NR	NR	NR	NR	0
HAZNET	TP		NR	NR	NR	NR	NR	0
ICE	TP		NR	NR	NR	NR	NR	0
HIST CORTESE	0.500		1	1	2	NR	NR	4
HWP	1.000		0	0	1	0	NR	1
HWT	0.250		0	0	NR	NR	NR	0
MINES	0.250		0	0	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
NPDES	TP		NR	NR	NR	NR	NR	0
PEST LIC	TP		NR	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
SAN JOSE HAZMAT	0.250		0	0	NR	NR	NR	0
UIC	TP		NR	NR	NR	NR	NR	0
WASTEWATER PITS	0.500		0	0	0	NR	NR	0
WDS	TP		NR	NR	NR	NR	NR	0
WIP	0.250		0	0	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		3	NR	NR	NR	NR	3
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF	TP		NR	NR	NR	NR	NR	0
RGA LUST	TP		NR	NR	NR	NR	NR	0

- Totals --		0	12	29	10	4	0	55
-------------	--	---	----	----	----	---	---	----

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

1
South
< 1/8
0.028 mi.
147 ft.

ABBOTT SERVICES
18055 MONTEREY
MORGAN HILL, CA 95037

EDR Hist Auto **1020930390**
N/A

Relative:
Higher

EDR Hist Auto

Actual:
357 ft.

Year:	Name:
1977	ABBOTT SERVICES
1978	ABBOTT SERVICES
1979	ABBOTT SERVICES
1980	ABBOTT SERVICES
1982	ABBOTT SERVICES

Type:
Gasoline Service Stations
Gasoline Service Stations
Gasoline Service Stations
Gasoline Service Stations
Gasoline Service Stations

A2
South
< 1/8
0.088 mi.
467 ft.

ROCCIS BODY SHOP
17995 N MONTEREY
MORGAN HILL, CA 95037

EDR Hist Auto **1020312819**
N/A

Site 1 of 4 in cluster A

Relative:
Lower

EDR Hist Auto

Actual:
355 ft.

Year:	Name:
1969	CANDY LANE MOTORS
1970	CANDY LANE MOTORS
1971	CANDY LANE MOTORS
1972	BEETLE
1987	ROCCIS BODY SHOP
1988	ROCCIS BODY SHOP

Type:
Used Car Dealers
Used Car Dealers
Used Car Dealers
General Automotive Repair Shops
Not reported
Not reported

B3
ESE
< 1/8
0.099 mi.
523 ft.

VELODYNE ACOUSTICS INC
345 DIGITAL DR
MORGAN HILL, CA 95037

CUPA Listings **S113797924**
HAZNET **N/A**

Site 1 of 2 in cluster B

Relative:
Higher

CUPA SANTA CLARA:

Region:	SANTA CLARA
PE#:	BP01
Program Description:	HMBP FACILITY, 1-3 CHEMICALS
Latitude:	37.138614
Longitude:	-121.657994

Region:	SANTA CLARA
PE#:	2202
Program Description:	GENERATES < 100 KG/YR
Latitude:	37.138614
Longitude:	-121.657994

HAZNET:

envid:	S113797924
Year:	2012
GEPAID:	CAL000333804
Contact:	HONG DUONG
Telephone:	4084652800
Mailing Name:	Not reported
Mailing Address:	345 DIGITAL DR

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

VELODYNE ACOUSTICS INC (Continued)

S113797924

Mailing City,St,Zip: MORGAN HILL, CA 950370000
Gen County: Santa Clara
TSD EPA ID: NMD002208627
TSD County: 99
Waste Category: Not reported
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery
(H010-H129) Or (H131-H135)
Tons: 0.137
Cat Decode: Not reported
Method Decode: Not reported
Facility County: Santa Clara

A4
SSE
< 1/8
0.103 mi.
545 ft.
Site 2 of 4 in cluster A

EDR Hist Auto **1021332301**
N/A

Relative: EDR Hist Auto
Lower

Actual:	Year:	Name:	Type:
355 ft.	1978	WAYNES SERVICE CENTER	General Automotive Repair Shops
	1979	WAYNES SERVICE CENTER	General Automotive Repair Shops
	1980	WAYNES SERVICE CENTER	General Automotive Repair Shops
	1982	WAYNES SERVICE CENTER	General Automotive Repair Shops
	1983	WAYNES SERVICE CENTER	General Automotive Repair Shops
	1985	WAYNES SERVICE CENTER	General Automotive Repair Shops
	1986	AUTO SERVICE OF MORGAN HILL	General Automotive Repair Shops
	1987	AUTO SERVICE OF MORGAN HILL	General Automotive Repair Shops
	1988	AUTO SERVICE OF MORGAN HILL	General Automotive Repair Shops
	1989	TONY GAITHER AUTO REPAIR	General Automotive Repair Shops

A5
SSE
< 1/8
0.103 mi.
545 ft.
Site 3 of 4 in cluster A

LUST **S104542016**
HIST LUST **N/A**

Relative: LUST REG 3:
Lower

Region:	3
Regional Board:	Central Coast Region
Facility County:	Santa Clara
Global ID:	T0608558692
Status:	Case Closed
Case Number:	3409
Local Case Num:	09S3E20J02f
Case Type:	S
Substance:	Waste Oil
Quantity:	Not reported
Abatement Method:	Not reported
Leak Source:	Not reported
Leak Cause:	Not reported
How Stopped:	Not reported
How Discovered:	Not reported
Release Date:	10/01/1990
Discovered Date:	Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

VOLPI/GAITHER PROP. (Continued)

S104542016

Enter Date: / /
Stop Date: Not reported
Review Date: / /
Enforce Date: Not reported
Close Date: 8/9/93
Enforcement Type: NOR
Responsible Party: Not reported
RP Address: Not reported
Contact: Not reported
Cross Street: Not reported
Local Agency: 43099L
Lead Agency: Local Agency
Staff Initials: Not reported
Confirm Leak: Not reported
Workplan: Not reported
Prelim Assess: 9/13/90
Pollution Char: 09/17/1990
Remedial Plan: Not reported
Remedial Action: Not reported
Monitoring: / /
Pilot Program: LUST
Interim Action: Not reported
Funding: Not reported
MTBE Class: *
Max MTBE Grnd Wtr: Not reported
Max MTBE Soil: Not reported
Max MTBE Data: / /
MTBE Tested: NRQ
Lat/Long: 37.136227 / -121.659714
Soil Qualifier: Not reported
Grnd Wtr Qualifier: Not reported
Mtbe Concentratn: 0
Mtbe Fuel: 0
Org Name: Not reported
Basin Plan: Not reported
Beneficial: MUN
Priority: Not reported
UST Cleanup Fund ID: Not reported
Suspended: Not reported
Operator: Not reported
Water System: Not reported
Well Name: Not reported
Distance From Well: 0
Assigned Name: Not reported
Summary: Not reported

HIST LUST SANTA CLARA:

Region: SANTA CLARA
Region Code: 3
SCVWD ID: 09S3E20J02
Oversite Agency: SCVWD
Date Listed: 1990-11-20 00:00:00
Closed Date: 1993-08-09 00:00:00

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

A6
SSE
< 1/8
0.103 mi.
545 ft.
VOLPI/GAITHER PROP.
17995 MONTEREY RD
MORGAN HILL, CA 95037
Site 4 of 4 in cluster A

LUST
SWEEPS UST
CA FID UST
CUPA Listings
HIST CORTESE
1000171279
N/A

Relative:
Lower

Actual:
355 ft.

LUST:

Region: STATE
Global Id: T0608558692
Latitude: 37.1367994837987
Longitude: -121.660408973694
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 08/09/1993
Lead Agency: SANTA CLARA COUNTY LOP
Case Worker: UST
Local Agency: SANTA CLARA COUNTY LOP
RB Case Number: 3409
LOC Case Number: Not reported
File Location: All Files are on GeoTracker or in the Local Agency Database
Potential Media Affect: Soil
Potential Contaminants of Concern: Waste Oil / Motor / Hydraulic / Lubricating
Site History: Not reported

[Click here to access the California GeoTracker records for this facility:](#)

Contact:

Global Id: T0608558692
Contact Type: Local Agency Caseworker
Contact Name: UST CASE WORKER
Organization Name: SANTA CLARA COUNTY LOP
Address: 1555 Berger Drive, Suite 300
City: SAN JOSE
Email: Not reported
Phone Number: 4089183400

Status History:

Global Id: T0608558692
Status: Completed - Case Closed
Status Date: 08/09/1993

Global Id: T0608558692
Status: Open - Case Begin Date
Status Date: 09/13/1990

Global Id: T0608558692
Status: Open - Site Assessment
Status Date: 09/13/1990

Global Id: T0608558692
Status: Open - Site Assessment
Status Date: 09/17/1990

Regulatory Activities:

Global Id: T0608558692
Action Type: ENFORCEMENT
Date: 08/09/1993
Action: Closure/No Further Action Letter

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

VOLPI/GAITHER PROP. (Continued)

1000171279

Global Id:	T0608558692
Action Type:	Other
Date:	10/01/1990
Action:	Leak Reported
Global Id:	T0608558692
Action Type:	ENFORCEMENT
Date:	12/03/1990
Action:	Notice of Responsibility - #39297
Global Id:	T0608558692
Action Type:	RESPONSE
Date:	12/05/1990
Action:	Other Report / Document
Global Id:	T0608558692
Action Type:	REMEDIATION
Date:	09/13/1990
Action:	Excavation
Global Id:	T0608558692
Action Type:	REMEDIATION
Date:	09/13/1990
Action:	Excavation

LUST SANTA CLARA:

Region:	SANTA CLARA
SCVWD ID:	09S3E20J02F
Date Closed:	08/09/1993
EDR Link ID:	09S3E20J02F

SWEEPS UST:

Status:	Not reported
Comp Number:	317995
Number:	Not reported
Board Of Equalization:	Not reported
Referral Date:	Not reported
Action Date:	Not reported
Created Date:	Not reported
Owner Tank Id:	Not reported
SWRCB Tank Id:	43-004-317995-000001
Tank Status:	Not reported
Capacity:	3000
Active Date:	Not reported
Tank Use:	M.V. FUEL
STG:	PRODUCT
Content:	KEROSENE
Number Of Tanks:	4

Status:	Not reported
Comp Number:	317995
Number:	Not reported
Board Of Equalization:	Not reported
Referral Date:	Not reported
Action Date:	Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

VOLPI/GAITHER PROP. (Continued)

1000171279

Created Date: Not reported
Owner Tank Id: Not reported
SWRCB Tank Id: 43-004-317995-000002
Tank Status: Not reported
Capacity: 5000
Active Date: Not reported
Tank Use: OIL
STG: WASTE
Content: WASTE OIL
Number Of Tanks: Not reported

Status: Not reported
Comp Number: 317995
Number: Not reported
Board Of Equalization: Not reported
Referral Date: Not reported
Action Date: Not reported
Created Date: Not reported
Owner Tank Id: Not reported
SWRCB Tank Id: 43-004-317995-000003
Tank Status: Not reported
Capacity: 3000
Active Date: Not reported
Tank Use: M.V. FUEL
STG: PRODUCT
Content: KEROSENE
Number Of Tanks: Not reported

Status: Not reported
Comp Number: 317995
Number: Not reported
Board Of Equalization: Not reported
Referral Date: Not reported
Action Date: Not reported
Created Date: Not reported
Owner Tank Id: Not reported
SWRCB Tank Id: 43-004-317995-000004
Tank Status: Not reported
Capacity: 250
Active Date: Not reported
Tank Use: OIL
STG: WASTE
Content: WASTE OIL
Number Of Tanks: Not reported

CA FID UST:

Facility ID: 43001592
Regulated By: UTKNI
Regulated ID: Not reported
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 4087799090
Mail To: Not reported
Mailing Address: P O BOX
Mailing Address 2: Not reported
Mailing City,St,Zip: MORGAN HILL 95037
Contact: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

VOLPI/GAITHER PROP. (Continued)

1000171279

Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Inactive

CUPA SANTA CLARA:

Region: SANTA CLARA
PE#: 2205
Program Description: GENERATES 100 KG YR TO <5 TONS/YR
Latitude: 37.138501
Longitude: -121.661438

HIST CORTESE:

Region: CORTESE
Facility County Code: 43
Reg By: LTNKA
Reg Id: 989

**C7
NW
< 1/8
0.119 mi.
629 ft.**

**MORGAN HILL FIRE DEPARTMENT
18300 OLD MONTEREY ROAD
MORGAN HILL, CA 95037**

**CUPA Listings S113172514
EMI N/A
HAZNET**

Site 1 of 3 in cluster C

**Relative:
Lower**

CUPA SANTA CLARA:

Region: SANTA CLARA
PE#: BP01
Program Description: HMBP FACILITY, 1-3 CHEMICALS
Latitude: 37.141632
Longitude: -121.663489

**Actual:
351 ft.**

EMI:

Year: 2011
County Code: 43
Air Basin: SF
Facility ID: 19960
Air District Name: BA
SIC Code: 9224
Air District Name: BAY AREA AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0.003
Reactive Organic Gases Tons/Yr: 0.0025101
Carbon Monoxide Emissions Tons/Yr: 0.01
NOX - Oxides of Nitrogen Tons/Yr: 0.045
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers and SmIrr Tons/Yr: 0

Year: 2012
County Code: 43
Air Basin: SF
Facility ID: 19960
Air District Name: BA

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

MORGAN HILL FIRE DEPARTMENT (Continued)

S113172514

SIC Code: 9224
Air District Name: BAY AREA AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0.003
Reactive Organic Gases Tons/Yr: 0.0025101
Carbon Monoxide Emissions Tons/Yr: 0.01
NOX - Oxides of Nitrogen Tons/Yr: 0.045
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0.0030737704918
Part. Matter 10 Micrometers and Smllr Tons/Yr: 0.003

Year: 2013
County Code: 43
Air Basin: SF
Facility ID: 19960
Air District Name: BA
SIC Code: 9224
Air District Name: BAY AREA AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0
Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 0.001
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers and Smllr Tons/Yr: 0

Year: 2014
County Code: 43
Air Basin: SF
Facility ID: 19960
Air District Name: BA
SIC Code: 9224
Air District Name: BAY AREA AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0.000101331
Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 0.000306
NOX - Oxides of Nitrogen Tons/Yr: 0.001407535
SOX - Oxides of Sulphur Tons/Yr: 6.52e-007
Particulate Matter Tons/Yr: 0.000104779
Part. Matter 10 Micrometers and Smllr Tons/Yr: 0.000100588

Year: 2015
County Code: 43
Air Basin: SF
Facility ID: 19960
Air District Name: BA
SIC Code: 9224
Air District Name: BAY AREA AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 8.4443e-005
Reactive Organic Gases Tons/Yr: 8.2213e-005

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

MORGAN HILL FIRE DEPARTMENT (Continued)

S113172514

Carbon Monoxide Emissions Tons/Yr: 0.000255
NOX - Oxides of Nitrogen Tons/Yr: 0.001172946
SOX - Oxides of Sulphur Tons/Yr: 5.44e-007
Particulate Matter Tons/Yr: 1.6751e-005
Part. Matter 10 Micrometers and Smllr Tons/Yr:1.6081e-005

HAZNET:

envid: S113172514
Year: 1996
GEPAID: CAP601252096
Contact: Not reported
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: Not reported
Mailing City,St,Zip: 000000000
Gen County: Not reported
TSD EPA ID: CAD044429835
TSD County: Not reported
Waste Category: Liquids with pH <= 2
Disposal Method: Treatment, Incineration
Tons: .0175
Cat Decode: Not reported
Method Decode: Not reported
Facility County: 0

envid: S113172514
Year: 1996
GEPAID: CAP601252096
Contact: Not reported
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: Not reported
Mailing City,St,Zip: 000000000
Gen County: Not reported
TSD EPA ID: CAT000646117
TSD County: Not reported
Waste Category: Other empty containers 30 gallons or more
Disposal Method: Disposal, Land Fill
Tons: .1500
Cat Decode: Not reported
Method Decode: Not reported
Facility County: 0

envid: S113172514
Year: 1996
GEPAID: CAP601252096
Contact: Not reported
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: Not reported
Mailing City,St,Zip: 000000000
Gen County: Not reported
TSD EPA ID: CAD044429835
TSD County: Not reported
Waste Category: Unspecified organic liquid mixture
Disposal Method: Recycler
Tons: .1459

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

MORGAN HILL FIRE DEPARTMENT (Continued)

S113172514

Cat Decode: Not reported
Method Decode: Not reported
Facility County: 0

envid: S113172514
Year: 1996
GEPAID: CAP601252096
Contact: Not reported
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: Not reported
Mailing City,St,Zip: 000000000
Gen County: Not reported
TSD EPA ID: CAD044429835
TSD County: Not reported
Waste Category: Paint sludge
Disposal Method: Recycler
Tons: .1459
Cat Decode: Not reported
Method Decode: Not reported
Facility County: 0

envid: S113172514
Year: 1996
GEPAID: CAP601252096
Contact: Not reported
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: Not reported
Mailing City,St,Zip: 000000000
Gen County: Not reported
TSD EPA ID: CAD044429835
TSD County: Not reported
Waste Category: Off-specification, aged or surplus organics
Disposal Method: Treatment, Incineration
Tons: .0050
Cat Decode: Not reported
Method Decode: Not reported
Facility County: 0

[Click this hyperlink](#) while viewing on your computer to access additional CA_HAZNET: detail in the EDR Site Report.

C8
NW
1/8-1/4
0.133 mi.
700 ft.

D & T CONSTRUCTION CO.
18375 OLD MONTEREY RD
MORGAN HILL, CA 95037

Site 2 of 3 in cluster C

SWEEPS UST S101625230
HIST UST N/A
CA FID UST

Relative:
Lower

Actual:
350 ft.

SWEEPS UST:
Status: Not reported
Comp Number: 783
Number: Not reported
Board Of Equalization: 44-025923
Referral Date: Not reported
Action Date: Not reported
Created Date: Not reported
Owner Tank Id: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

D & T CONSTRUCTION CO. (Continued)

S101625230

SWRCB Tank Id: 43-004-000783-000001
Tank Status: Not reported
Capacity: 500
Active Date: Not reported
Tank Use: M.V. FUEL
STG: PRODUCT
Content: REG UNLEADED
Number Of Tanks: 1

Status: Not reported
Comp Number: 783
Number: Not reported
Board Of Equalization: Not reported
Referral Date: Not reported
Action Date: Not reported
Created Date: Not reported
Owner Tank Id: Not reported
SWRCB Tank Id: 49-000-000783-000001
Tank Status: Not reported
Capacity: 500
Active Date: Not reported
Tank Use: M.V. FUEL
STG: PRODUCT
Content: REG UNLEADED
Number Of Tanks: 1

HIST UST:

File Number: 0002D22C
URL: <http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002D22C.pdf>
Region: Not reported
Facility ID: Not reported
Facility Type: Not reported
Other Type: Not reported
Contact Name: Not reported
Telephone: Not reported
Owner Name: Not reported
Owner Address: Not reported
Owner City,St,Zip: Not reported
Total Tanks: Not reported

Tank Num: Not reported
Container Num: Not reported
Year Installed: Not reported
Tank Capacity: Not reported
Tank Used for: Not reported
Type of Fuel: Not reported
Container Construction Thickness: Not reported
Leak Detection: Not reported

Click here for Geo Tracker PDF:

CA FID UST:

Facility ID: 43011903
Regulated By: UTKI
Regulated ID: 00000783
Cortese Code: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

D & T CONSTRUCTION CO. (Continued)

S101625230

SIC Code: Not reported
Facility Phone: 4087797916
Mail To: Not reported
Mailing Address: P O BOX
Mailing Address 2: Not reported
Mailing City,St,Zip: MORGAN HILL 95037
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Inactive

**C9
NW
1/8-1/4
0.133 mi.
700 ft.**

**D & T CONSTRUCTION CO.
18375 OLD MONTEREY RD
MORGAN HILL, CA 95037**

**HIST UST U001601526
N/A**

Site 3 of 3 in cluster C

**Relative:
Lower**

HIST UST:

File Number: Not reported
URL: Not reported
Region: STATE
Facility ID: 00000000783
Facility Type: Other
Other Type: CONST. YARD
Contact Name: Not reported
Telephone: 4087797916
Owner Name: D & T CONSTRUCTION CO.
Owner Address: 18375 OLD MONTEREY RD.
Owner City,St,Zip: MORGAN HILL, CA 95037
Total Tanks: 0001

**Actual:
350 ft.**

Tank Num: 001
Container Num: #1
Year Installed: Not reported
Tank Capacity: 00000500
Tank Used for: PRODUCT
Type of Fuel: PREMIUM
Container Construction Thickness: Not reported
Leak Detection: None

**B10
ESE
1/8-1/4
0.135 mi.
712 ft.**

**MINDCRAFT DENTAL CREATIONS
328 DIGITAL DR
MORGAN HILL, CA 95037**

**CUPA Listings S117892389
N/A**

Site 2 of 2 in cluster B

**Relative:
Higher**

CUPA SANTA CLARA:

Region: SANTA CLARA
PE#: 2502

**Actual:
358 ft.**

Program Description: HAZMAT STORAGE FACILITY-MINIMAL STORAGE SITE
Latitude: 37.138251
Longitude: -121.657651

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

11
ESE
1/8-1/4
0.158 mi.
833 ft.

TERRASAT COMMUNICATIONS INC
315 DIGITAL DR
MORGAN HILL, CA 95037

CUPA Listings S118585257
N/A

Relative:
Higher

CUPA SANTA CLARA:

Region: SANTA CLARA
PE#: BP01
Program Description: HMBP FACILITY, 1-3 CHEMICALS
Latitude: 37.136992
Longitude: -121.657369

Actual:
357 ft.

Region: SANTA CLARA
PE#: 2240
Program Description: GENERATES < 10 GAL/YR
Latitude: 37.136992
Longitude: -121.657369

D12
East
1/8-1/4
0.174 mi.
921 ft.

MDA PRECISION LLC
360 DIGITAL DR
MORGAN HILL, CA 95037

CUPA Listings S114555296
N/A

Site 1 of 3 in cluster D

Relative:
Higher

CUPA SANTA CLARA:

Region: SANTA CLARA
PE#: 2202
Program Description: GENERATES < 100 KG/YR
Latitude: 37.139293
Longitude: -121.656742

Actual:
359 ft.

E13
SSE
1/8-1/4
0.175 mi.
925 ft.

STAR MOTOR IMPORTS
17945 MONTEREY RD B
MORGAN HILL, CA 95037

CUPA Listings S112346903
N/A

Site 1 of 6 in cluster E

Relative:
Lower

CUPA SANTA CLARA:

Region: SANTA CLARA
PE#: BP01
Program Description: HMBP FACILITY, 1-3 CHEMICALS
Latitude: 37.136867
Longitude: -121.660110

Actual:
354 ft.

Region: SANTA CLARA
PE#: 2201
Program Description: GENERATES WASTE OIL ONLY
Latitude: 37.136867
Longitude: -121.660110

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

E14
SSE
1/8-1/4
0.175 mi.
925 ft.
A1 MUFFLER & BRAKE
17945 MONTEREY RD D
MORGAN HILL, CA 95037
Site 2 of 6 in cluster E

CUPA Listings **S112833890**
N/A

Relative: CUPA SANTA CLARA:
Lower Region: SANTA CLARA
PE#: BP01
Actual: Program Description: HMBP FACILITY, 1-3 CHEMICALS
354 ft. Latitude: 37.136867
Longitude: -121.660110

D15
ESE
1/8-1/4
0.179 mi.
944 ft.
PACIFIC CAPACITOR
288 DIGITAL DR
MORGAN HILL, CA 95037
Site 2 of 3 in cluster D

CUPA Listings **S114555306**
N/A

Relative: CUPA SANTA CLARA:
Higher Region: SANTA CLARA
PE#: 2205
Actual: Program Description: GENERATES 100 KG YR TO <5 TONS/YR
358 ft. Latitude: 37.138205
Longitude: -121.656529

D16
ESE
1/8-1/4
0.196 mi.
1035 ft.
FLUID INDUSTRIAL MANUFACTURING INC
280 DIGITAL DR
MORGAN HILL, CA 95037
Site 3 of 3 in cluster D

CUPA Listings **S113162024**
HAZNET **N/A**

Relative: CUPA SANTA CLARA:
Higher Region: SANTA CLARA
PE#: BP01
Actual: Program Description: HMBP FACILITY, 1-3 CHEMICALS
359 ft. Latitude: 37.138491
Longitude: -121.656176

Region: SANTA CLARA
PE#: 2202
Program Description: GENERATES < 100 KG/YR
Latitude: 37.138491
Longitude: -121.656176

HAZNET:
envid: S113162024
Year: 2014
GEPaid: CAL000365304
Contact: VINCENT CALVO
Telephone: 4087829900
Mailing Name: Not reported
Mailing Address: 280 DIGITAL DR
Mailing City,St,Zip: MORGAN HILL, CA 950370000
Gen County: Santa Clara
TSD EPA ID: CAD982444481
TSD County: San Bernardino
Waste Category: Other inorganic solid waste

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

FLUID INDUSTRIAL MANUFACTURING INC (Continued)

S113162024

Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery
(H010-H129) Or (H131-H135)
Tons: 0.22935
Cat Decode: Not reported
Method Decode: Not reported
Facility County: Santa Clara

envid: S113162024
Year: 2012
GEPAID: CAL000365304
Contact: VINCENT CALVO
Telephone: 4087829900
Mailing Name: Not reported
Mailing Address: 280 DIGITAL DR
Mailing City,St,Zip: MORGAN HILL, CA 950370000
Gen County: Santa Clara
TSD EPA ID: CAD982444481
TSD County: San Bernardino
Waste Category: Not reported
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery
(H010-H129) Or (H131-H135)
Tons: 0.187
Cat Decode: Not reported
Method Decode: Not reported
Facility County: Santa Clara

envid: S113162024
Year: 2011
GEPAID: CAL000365304
Contact: VINCENT CALVO
Telephone: 4087829900
Mailing Name: Not reported
Mailing Address: 280 DIGITAL DR
Mailing City,St,Zip: MORGAN HILL, CA 95037
Gen County: Not reported
TSD EPA ID: CAD982444481
TSD County: Not reported
Waste Category: Unspecified organic liquid mixture
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery
(H010-H129) Or (H131-H135)
Tons: 0.187
Cat Decode: Not reported
Method Decode: Not reported
Facility County: Santa Clara

E17 PRONTO AUTO REPAIR
SSE 17920 MONTEREY RD
1/8-1/4 MORGAN HILL, CA 95037
0.213 mi.
1127 ft. Site 3 of 6 in cluster E

CUPA Listings S113883248
N/A

Relative: CUPA SANTA CLARA:
Lower Region: SANTA CLARA
PE#: BP01
Actual: Program Description: HMBP FACILITY, 1-3 CHEMICALS
353 ft. Latitude: Not reported
Longitude: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

PRONTO AUTO REPAIR (Continued)

S113883248

Region: SANTA CLARA
PE#: 2201
Program Description: GENERATES WASTE OIL ONLY
Latitude: Not reported
Longitude: Not reported

F18
NNW
1/8-1/4
0.215 mi.
1136 ft.

ARCO FACILITY NO 6548
18605 MONTEREY RD
MORGAN HILL, CA 95037

RCRA NonGen / NLR **1007091382**
CUPA Listings **CAR000148650**

Site 1 of 2 in cluster F

Relative:
Lower

Actual:
353 ft.

RCRA NonGen / NLR:
Date form received by agency: 12/13/2006
Facility name: ARCO FACILITY NO 6548
Facility address: 18605 MONTEREY RD
MORGAN HILL, CA 95037
EPA ID: CAR000148650
Mailing address: PO BOX 80249
RANCHO SANTA MARGARITA, CA 92688
Contact: JACKIE DOUGHERTY
Contact address: PO BOX 80249
RANCHO SANTA MARGARITA, CA 92688
Contact country: US
Contact telephone: 949-460-5200
Contact email: JACKIE@BELSHIRE.COM
EPA Region: 09
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name: BP WEST COAST PRODUCTS LLC
Owner/operator address: Not reported
Not reported
Owner/operator country: Not reported
Owner/operator telephone: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 09/09/2003
Owner/Op end date: Not reported

Owner/operator name: BP WEST COAST PRODUCTS LLC
Owner/operator address: Not reported
Not reported
Owner/operator country: Not reported
Owner/operator telephone: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 09/09/2003
Owner/Op end date: Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ARCO FACILITY NO 6548 (Continued)

1007091382

Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
Used oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:

Date form received by agency: 10/13/2003
Site name: ARCO FACILITY NO 6548
Classification: Small Quantity Generator

Waste code: D001
Waste name: IGNITABLE WASTE

Waste code: D018
Waste name: BENZENE

Violation Status: No violations found

CUPA SANTA CLARA:

Region: SANTA CLARA
PE#: BP01
Program Description: HMBP FACILITY, 1-3 CHEMICALS
Latitude: 37.144813
Longitude: -121.665005

Region: SANTA CLARA
PE#: 2205
Program Description: GENERATES 100 KG YR TO <5 TONS/YR
Latitude: 37.144813
Longitude: -121.665005

Region: SANTA CLARA
PE#: 2399
Program Description: UNDERGROUND STORAGE TANK PROGRAM RECORD
Latitude: 37.144813
Longitude: -121.665005

F19
NNW
1/8-1/4
0.215 mi.
1136 ft.
MORGAN HILL FUEL
18605 MONTEREY RD
MORGAN HILL, CA 95037
Site 2 of 2 in cluster F

UST **U004266041**
N/A

Relative: **UST:**
Lower Facility ID: Not reported
Permitting Agency: Santa Clara County Environmental Health
Actual: Latitude: 37.14434
353 ft. Longitude: -121.66498

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

E20
SSE
1/8-1/4
0.226 mi.
1192 ft.
SHELL - 17905 MONTEREY
17905 MONTEREY RD.
MORGAN HILL, CA 95037
Site 4 of 6 in cluster E

LUST
HIST CORTESE
S103065712
N/A

Relative:
Lower

Actual:
353 ft.

LUST:

Region: STATE
Global Id: T0608502185
Latitude: 37.1350204412028
Longitude: -121.658864021301
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 05/02/2016
Lead Agency: SANTA CLARA COUNTY LOP
Case Worker: AC
Local Agency: SANTA CLARA COUNTY LOP
RB Case Number: 3402
LOC Case Number: 09S3E20J01f
File Location: All Files are on GeoTracker or in the Local Agency Database
Potential Media Affect: Aquifer used for drinking water supply
Potential Contaminants of Concern: MTBE / TBA / Other Fuel Oxygenates, Gasoline
Site History: May 16, 1986 Cleanup and Abatement Order 86-295 issued for this site. During third quarter 2012 monitoring event, TBA was detected at a maximum concentration of 980 ug/L in Groundwater. Groundwater monitoring is conducted on annual basis. Case Closure request is pending.

[Click here to access the California GeoTracker records for this facility:](#)

Contact:

Global Id: T0608502185
Contact Type: Local Agency Caseworker
Contact Name: AARON COSTA
Organization Name: SANTA CLARA COUNTY LOP
Address: 1555 Berger Drive, Suite 300
City: SAN JOSE
Email: aaron.costa@cep.sccgov.org
Phone Number: 4089181954

Global Id: T0608502185
Contact Type: Regional Board Caseworker
Contact Name: WEI LIU
Organization Name: CENTRAL COAST RWQCB (REGION 3)
Address: 895 AEROVISTA PLACE, SUITE 101
City: SAN LUIS OBISPO
Email: wei.liu@waterboards.ca.gov
Phone Number: 8055493147

Status History:

Global Id: T0608502185
Status: Completed - Case Closed
Status Date: 05/02/2016

Global Id: T0608502185
Status: Open - Case Begin Date
Status Date: 12/11/1985

Global Id: T0608502185

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SHELL - 17905 MONTEREY (Continued)

S103065712

Status: Open - Eligible for Closure
Status Date: 04/16/2014

Global Id: T0608502185
Status: Open - Remediation
Status Date: 05/15/1996

Global Id: T0608502185
Status: Open - Site Assessment
Status Date: 12/11/1985

Global Id: T0608502185
Status: Open - Site Assessment
Status Date: 02/13/1987

Global Id: T0608502185
Status: Open - Verification Monitoring
Status Date: 11/16/2006

Regulatory Activities:

Global Id: T0608502185
Action Type: ENFORCEMENT
Date: 02/22/2013
Action: Staff Letter

Global Id: T0608502185
Action Type: ENFORCEMENT
Date: 12/15/2015
Action: Letter - Notice

Global Id: T0608502185
Action Type: ENFORCEMENT
Date: 01/24/2012
Action: Notice of Responsibility

Global Id: T0608502185
Action Type: ENFORCEMENT
Date: 05/05/2011
Action: Staff Letter

Global Id: T0608502185
Action Type: RESPONSE
Date: 01/15/1998
Action: Monitoring Report - Quarterly

Global Id: T0608502185
Action Type: RESPONSE
Date: 10/15/1996
Action: Monitoring Report - Quarterly

Global Id: T0608502185
Action Type: RESPONSE
Date: 01/15/1997
Action: Monitoring Report - Quarterly

Global Id: T0608502185
Action Type: RESPONSE

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SHELL - 17905 MONTEREY (Continued)

S103065712

Date:	03/18/2014
Action:	Correspondence
Global Id:	T0608502185
Action Type:	ENFORCEMENT
Date:	07/28/2009
Action:	Staff Letter
Global Id:	T0608502185
Action Type:	RESPONSE
Date:	07/15/1997
Action:	Monitoring Report - Quarterly
Global Id:	T0608502185
Action Type:	RESPONSE
Date:	10/31/2011
Action:	Monitoring Report - Semi-Annually
Global Id:	T0608502185
Action Type:	RESPONSE
Date:	04/05/2013
Action:	Email Correspondence
Global Id:	T0608502185
Action Type:	ENFORCEMENT
Date:	04/25/2014
Action:	Staff Letter
Global Id:	T0608502185
Action Type:	ENFORCEMENT
Date:	10/24/2014
Action:	Staff Letter
Global Id:	T0608502185
Action Type:	ENFORCEMENT
Date:	07/06/2015
Action:	Staff Letter
Global Id:	T0608502185
Action Type:	ENFORCEMENT
Date:	05/18/2014
Action:	Clean Up Fund - Case Closure Review Summary Report (RSR)
Global Id:	T0608502185
Action Type:	ENFORCEMENT
Date:	06/17/2014
Action:	Clean Up Fund - Letter to RP
Global Id:	T0608502185
Action Type:	ENFORCEMENT
Date:	10/06/2014
Action:	State Water Board Closure Order
Global Id:	T0608502185
Action Type:	ENFORCEMENT
Date:	02/20/2015
Action:	Staff Letter

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SHELL - 17905 MONTEREY (Continued)

S103065712

Global Id:	T0608502185
Action Type:	RESPONSE
Date:	07/15/1996
Action:	Monitoring Report - Quarterly
Global Id:	T0608502185
Action Type:	ENFORCEMENT
Date:	01/24/2013
Action:	Staff Letter
Global Id:	T0608502185
Action Type:	RESPONSE
Date:	10/31/2009
Action:	Monitoring Report - Semi-Annually
Global Id:	T0608502185
Action Type:	RESPONSE
Date:	04/30/2010
Action:	Monitoring Report - Semi-Annually
Global Id:	T0608502185
Action Type:	ENFORCEMENT
Date:	08/31/1995
Action:	Staff Letter - #18725
Global Id:	T0608502185
Action Type:	ENFORCEMENT
Date:	08/13/2013
Action:	Email Correspondence
Global Id:	T0608502185
Action Type:	ENFORCEMENT
Date:	03/12/2015
Action:	Staff Letter
Global Id:	T0608502185
Action Type:	Other
Date:	12/02/1985
Action:	Leak Stopped
Global Id:	T0608502185
Action Type:	Other
Date:	12/13/1985
Action:	Leak Reported
Global Id:	T0608502185
Action Type:	RESPONSE
Date:	10/15/1997
Action:	Monitoring Report - Quarterly
Global Id:	T0608502185
Action Type:	ENFORCEMENT
Date:	11/02/2010
Action:	Staff Letter
Global Id:	T0608502185
Action Type:	Other

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SHELL - 17905 MONTEREY (Continued)

S103065712

Date:	12/02/1985
Action:	Leak Discovery
Global Id:	T0608502185
Action Type:	ENFORCEMENT
Date:	05/02/2016
Action:	Closure/No Further Action Letter
Global Id:	T0608502185
Action Type:	RESPONSE
Date:	04/30/2012
Action:	Monitoring Report - Semi-Annually
Global Id:	T0608502185
Action Type:	RESPONSE
Date:	10/30/2012
Action:	Monitoring Report - Semi-Annually
Global Id:	T0608502185
Action Type:	RESPONSE
Date:	04/05/2013
Action:	Correspondence
Global Id:	T0608502185
Action Type:	RESPONSE
Date:	04/30/2011
Action:	Monitoring Report - Semi-Annually - Regulator Responded
Global Id:	T0608502185
Action Type:	ENFORCEMENT
Date:	10/01/2015
Action:	Staff Letter
Global Id:	T0608502185
Action Type:	RESPONSE
Date:	02/07/2013
Action:	Request for Closure - Regulator Responded
Global Id:	T0608502185
Action Type:	RESPONSE
Date:	04/15/1996
Action:	Remedial Progress Report
Global Id:	T0608502185
Action Type:	ENFORCEMENT
Date:	11/07/1991
Action:	Notice of Responsibility - #39296
Global Id:	T0608502185
Action Type:	ENFORCEMENT
Date:	03/01/1996
Action:	Staff Letter - #18729
Global Id:	T0608502185
Action Type:	RESPONSE
Date:	01/15/1996
Action:	Monitoring Report - Quarterly

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SHELL - 17905 MONTEREY (Continued)

S103065712

Global Id: T0608502185
Action Type: RESPONSE
Date: 10/15/1995
Action: Monitoring Report - Quarterly

Global Id: T0608502185
Action Type: RESPONSE
Date: 12/09/2015
Action: Well Destruction Report

Global Id: T0608502185
Action Type: RESPONSE
Date: 04/15/2014
Action: Other Report / Document

Global Id: T0608502185
Action Type: REMEDIATION
Date: 03/28/2001
Action: Pump & Treat (P&T) Groundwater

Global Id: T0608502185
Action Type: REMEDIATION
Date: 11/06/1999
Action: Pump & Treat (P&T) Groundwater

Global Id: T0608502185
Action Type: REMEDIATION
Date: 02/01/1991
Action: Soil Vapor Extraction (SVE)

LUST SANTA CLARA:

Region: SANTA CLARA
SCVWD ID: 09S3E20J01F
Date Closed: Not reported
EDR Link ID: 09S3E20J01F

HIST CORTESE:

Region: CORTESE
Facility County Code: 43
Reg By: LTNKA
Reg Id: 585

E21
SSE
1/8-1/4
0.226 mi.
1192 ft.

MORGAN HILL GAS & AUTO REPAIR, INC.
17905 MONTEREY ST
MORGAN HILL, CA 95037
Site 5 of 6 in cluster E

UST **U004266042**
N/A

Relative:
Lower

Actual:
353 ft.

UST:
Facility ID: Not reported
Permitting Agency: Santa Clara County Environmental Health
Latitude: 37.13503
Longitude: -121.65895

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

E22
SSE
1/8-1/4
0.226 mi.
1192 ft.
MONTEREY/WRIGHT
17905 MONTEREY ST
MORGAN HILL, CA 95037
Site 6 of 6 in cluster E

HIST UST **U001601587**
N/A

Relative:
Lower

Actual:
353 ft.

HIST UST:

File Number: Not reported
URL: Not reported
Region: STATE
Facility ID: 00000019731
Facility Type: Gas Station
Other Type: Not reported
Contact Name: VIEIRA SERVICE CO. INC
Telephone: 4087793838
Owner Name: SHELL OIL COMPANY
Owner Address: P. O. BOX 4848
Owner City,St,Zip: ANAHEIM, CA 92803
Total Tanks: 0005

Tank Num: 001
Container Num: 1
Year Installed: 1960
Tank Capacity: 00008000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Container Construction Thickness: 1/4
Leak Detection: Stock Inventor, 10

Tank Num: 002
Container Num: 2
Year Installed: 1960
Tank Capacity: 00005000
Tank Used for: PRODUCT
Type of Fuel: PREMIUM
Container Construction Thickness: 1/4
Leak Detection: Stock Inventor, 10

Tank Num: 003
Container Num: 3
Year Installed: 1960
Tank Capacity: 00005000
Tank Used for: PRODUCT
Type of Fuel: PREMIUM
Container Construction Thickness: 1/4
Leak Detection: Stock Inventor, 10

Tank Num: 004
Container Num: 4
Year Installed: 1960
Tank Capacity: 00000550
Tank Used for: WASTE
Type of Fuel: WASTE OIL
Container Construction Thickness: 12
Leak Detection: Stock Inventor, 10

Tank Num: 005
Container Num: 5
Year Installed: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

MONTEREY/WRIGHT (Continued)

U001601587

Tank Capacity: 00008000
Tank Used for: PRODUCT
Type of Fuel: REGULAR
Container Construction Thickness: 1/4
Leak Detection: Stock Inventor, 10

G23
East
1/8-1/4
0.235 mi.
1240 ft.
MICHAEL K SINGH DDS
18181 BUTTERFIELD BL STE 130
MORGAN HILL, CA 95037
Site 1 of 2 in cluster G

CUPA Listings **S118754905**
N/A

Relative: CUPA SANTA CLARA:
Higher Region: SANTA CLARA
PE#: 2240
Actual: Program Description: GENERATES < 10 GAL/YR
360 ft. Latitude: 37.139100
Longitude: -121.655616

G24
East
1/8-1/4
0.235 mi.
1240 ft.
FERDINAND D MANALILI DDS
18181 BUTTERFIELD BL 120
MORGAN HILL, CA 95037
Site 2 of 2 in cluster G

CUPA Listings **S118754864**
N/A

Relative: CUPA SANTA CLARA:
Higher Region: SANTA CLARA
PE#: 2240
Actual: Program Description: GENERATES < 10 GAL/YR
360 ft. Latitude: 37.139655
Longitude: -121.655031

H25
SSE
1/8-1/4
0.236 mi.
1247 ft.
UNITED SHELL, INC DBA MORGAN HILL SHELL
17905 MONTEREY RD
MORGAN HILL, CA 95037
Site 1 of 4 in cluster H

UST **U003976872**
N/A

Relative: UST:
Lower Facility ID: 43-004-007325
Permitting Agency: Santa Clara County Environmental Health
Actual: Latitude: 37.13504
353 ft. Longitude: -121.658966
Facility ID: 82
Permitting Agency: CAMPBELL,CUPERTINO,LOS GATOS,MORGAN HILL
Latitude: 37.13535
Longitude: -121.65887

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

H26
SSE
1/8-1/4
0.236 mi.
1247 ft.
MONTEREY/WRIGHT
17905 N MONTEREY RD
MORGAN HILL, CA 95037
Site 2 of 4 in cluster H

SWEEPS UST
HIST UST
CA FID UST
S101625249
N/A

Relative:
Lower

Actual:
353 ft.

SWEEPS UST:

Status: Active
Comp Number: 19731
Number: 9
Board Of Equalization: 44-025939
Referral Date: 07-01-85
Action Date: Not reported
Created Date: 02-29-88
Owner Tank Id: 1
SWRCB Tank Id: 43-004-019731-000001
Tank Status: A
Capacity: 8000
Active Date: 07-01-85
Tank Use: M.V. FUEL
STG: P
Content: REG UNLEADED
Number Of Tanks: 5

Status: Active
Comp Number: 19731
Number: 9
Board Of Equalization: 44-025939
Referral Date: 07-01-85
Action Date: Not reported
Created Date: 02-29-88
Owner Tank Id: 2
SWRCB Tank Id: 43-004-019731-000002
Tank Status: A
Capacity: 5000
Active Date: 07-01-85
Tank Use: M.V. FUEL
STG: P
Content: REG UNLEADED
Number Of Tanks: Not reported

Status: Active
Comp Number: 19731
Number: 9
Board Of Equalization: 44-025939
Referral Date: 07-01-85
Action Date: Not reported
Created Date: 02-29-88
Owner Tank Id: 3
SWRCB Tank Id: 43-004-019731-000003
Tank Status: A
Capacity: 5000
Active Date: 07-01-85
Tank Use: M.V. FUEL
STG: P
Content: REG UNLEADED
Number Of Tanks: Not reported

Status: Active

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

MONTEREY/WRIGHT (Continued)

S101625249

Comp Number: 19731
Number: 9
Board Of Equalization: 44-025939
Referral Date: 07-01-85
Action Date: Not reported
Created Date: 02-29-88
Owner Tank Id: 4
SWRCB Tank Id: 43-004-019731-000004
Tank Status: A
Capacity: 550
Active Date: 07-01-85
Tank Use: OIL
STG: W
Content: Not reported
Number Of Tanks: Not reported

Status: Active
Comp Number: 19731
Number: 9
Board Of Equalization: 44-025939
Referral Date: 07-01-85
Action Date: Not reported
Created Date: 02-29-88
Owner Tank Id: 5
SWRCB Tank Id: 43-004-019731-000005
Tank Status: A
Capacity: 8000
Active Date: 07-01-85
Tank Use: M.V. FUEL
STG: P
Content: LEADED
Number Of Tanks: Not reported

Status: Active
Comp Number: 19731
Number: 9
Board Of Equalization: 44-025939
Referral Date: 07-01-85
Action Date: Not reported
Created Date: 02-29-88
Owner Tank Id: 1
SWRCB Tank Id: 43-004-019731-000001
Tank Status: A
Capacity: 8000
Active Date: 07-01-85
Tank Use: M.V. FUEL
STG: P
Content: REG UNLEADED
Number Of Tanks: 5

Status: Active
Comp Number: 19731
Number: 9
Board Of Equalization: 44-025939
Referral Date: 07-01-85
Action Date: Not reported
Created Date: 02-29-88

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

MONTEREY/WRIGHT (Continued)

S101625249

Owner Tank Id: 2
SWRCB Tank Id: 43-004-019731-000002
Tank Status: A
Capacity: 5000
Active Date: 07-01-85
Tank Use: M.V. FUEL
STG: P
Content: REG UNLEADED
Number Of Tanks: Not reported

Status: Active
Comp Number: 19731
Number: 9
Board Of Equalization: 44-025939
Referral Date: 07-01-85
Action Date: Not reported
Created Date: 02-29-88
Owner Tank Id: 3
SWRCB Tank Id: 43-004-019731-000003
Tank Status: A
Capacity: 5000
Active Date: 07-01-85
Tank Use: M.V. FUEL
STG: P
Content: REG UNLEADED
Number Of Tanks: Not reported

Status: Active
Comp Number: 19731
Number: 9
Board Of Equalization: 44-025939
Referral Date: 07-01-85
Action Date: Not reported
Created Date: 02-29-88
Owner Tank Id: 4
SWRCB Tank Id: 43-004-019731-000004
Tank Status: A
Capacity: 550
Active Date: 07-01-85
Tank Use: OIL
STG: W
Content: Not reported
Number Of Tanks: Not reported

Status: Active
Comp Number: 19731
Number: 9
Board Of Equalization: 44-025939
Referral Date: 07-01-85
Action Date: Not reported
Created Date: 02-29-88
Owner Tank Id: 5
SWRCB Tank Id: 43-004-019731-000005
Tank Status: A
Capacity: 8000
Active Date: 07-01-85
Tank Use: M.V. FUEL

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

MONTEREY/WRIGHT (Continued)

S101625249

STG: P
Content: LEADED
Number Of Tanks: Not reported

Status: Active
Comp Number: 19731
Number: 9
Board Of Equalization: Not reported
Referral Date: 07-01-85
Action Date: Not reported
Created Date: 02-29-88
Owner Tank Id: 1
SWRCB Tank Id: 49-000-019731-000001
Tank Status: A
Capacity: 8000
Active Date: 07-01-85
Tank Use: M.V. FUEL
STG: P
Content: REG UNLEADED
Number Of Tanks: 5

Status: Active
Comp Number: 19731
Number: 9
Board Of Equalization: Not reported
Referral Date: 07-01-85
Action Date: Not reported
Created Date: 02-29-88
Owner Tank Id: 2
SWRCB Tank Id: 49-000-019731-000002
Tank Status: A
Capacity: 5000
Active Date: 07-01-85
Tank Use: M.V. FUEL
STG: P
Content: REG UNLEADED
Number Of Tanks: Not reported

Status: Active
Comp Number: 19731
Number: 9
Board Of Equalization: Not reported
Referral Date: 07-01-85
Action Date: Not reported
Created Date: 02-29-88
Owner Tank Id: 3
SWRCB Tank Id: 49-000-019731-000003
Tank Status: A
Capacity: 5000
Active Date: 07-01-85
Tank Use: M.V. FUEL
STG: P
Content: REG UNLEADED
Number Of Tanks: Not reported

Status: Active
Comp Number: 19731

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

MONTEREY/WRIGHT (Continued)

S101625249

Number: 9
Board Of Equalization: Not reported
Referral Date: 07-01-85
Action Date: Not reported
Created Date: 02-29-88
Owner Tank Id: 4
SWRCB Tank Id: 49-000-019731-000004
Tank Status: A
Capacity: 550
Active Date: 07-01-85
Tank Use: OIL
STG: W
Content: WASTE OIL
Number Of Tanks: Not reported

Status: Active
Comp Number: 19731
Number: 9
Board Of Equalization: Not reported
Referral Date: 07-01-85
Action Date: Not reported
Created Date: 02-29-88
Owner Tank Id: 5
SWRCB Tank Id: 49-000-019731-000005
Tank Status: A
Capacity: 8000
Active Date: 07-01-85
Tank Use: M.V. FUEL
STG: P
Content: LEADED
Number Of Tanks: Not reported

HIST UST:

File Number: 000208E1
URL: <http://geotracker.waterboards.ca.gov/ustpdfs/pdf/000208E1.pdf>
Region: Not reported
Facility ID: Not reported
Facility Type: Not reported
Other Type: Not reported
Contact Name: Not reported
Telephone: Not reported
Owner Name: Not reported
Owner Address: Not reported
Owner City,St,Zip: Not reported
Total Tanks: Not reported

Tank Num: Not reported
Container Num: Not reported
Year Installed: Not reported
Tank Capacity: Not reported
Tank Used for: Not reported
Type of Fuel: Not reported
Container Construction Thickness: Not reported
Leak Detection: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

MONTEREY/WRIGHT (Continued)

S101625249

[Click here for Geo Tracker PDF:](#)

CA FID UST:

Facility ID: 43001306
Regulated By: UTNKA
Regulated ID: 00019731
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 4087793838
Mail To: Not reported
Mailing Address: 17905 N MONTEREY RD
Mailing Address 2: Not reported
Mailing City,St,Zip: MORGAN HILL 95037
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Active

**H27
SSE
1/8-1/4
0.236 mi.
1247 ft.**

**SHELL SERVICE STATION
17905 N MONTEREY RD
MORGAN HILL, CA 95037**

**RCRA-SQG 1000288546
CAD981167992**

Site 3 of 4 in cluster H

**Relative:
Lower**

RCRA-SQG:

Date form received by agency: 07/11/2001
Facility name: SHELL SERVICE STATION
Facility address: 17905 N MONTEREY RD
S A P 135627

MORGAN HILL, CA 95037
EPA ID: CAD981167992
Mailing address: P O BOX 2648

HOUSTON, TX 772522648
Contact: SONDR A BIENVENU
Contact address: P O BOX 2648
HOUSTON, TX 772522648

Contact country: US
Contact telephone: (713) 241-5036
Contact email: Not reported
EPA Region: 09

Classification: Small Small Quantity Generator

Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SHELL SERVICE STATION (Continued)

1000288546

Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: EQUILON ENTERPRISES L L C
Owner/operator address: P O BOX 2648
HOUSTON, TX 77252

Owner/operator country: Not reported
Owner/operator telephone: (713) 241-5036
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Waste code: D001
Waste name: IGNITABLE WASTE

Historical Generators:

Date form received by agency: 09/01/1996
Site name: SHELL SERVICE STATION
Classification: Small Quantity Generator

Violation Status: No violations found

H28 SHELL
SSE 17905 MONTEREY RD
1/8-1/4 MORGAN HILL, CA 95037
0.236 mi.
1247 ft.

LUST S105126409
HIST LUST N/A
CUPA Listings

Relative:
Lower

Actual:
353 ft.

Site 4 of 4 in cluster H

LUST REG 3:
Region: 3
Regional Board: Central Coast Region
Facility County: Santa Clara
Global ID: T0608502185
Status: Pollution Characterization
Case Number: 3402
Local Case Num: 09S3E20J01f
Case Type: A
Substance: Gasoline
Quantity: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SHELL (Continued)

S105126409

Abatement Method: Not reported
Leak Source: Not reported
Leak Cause: Not reported
How Stopped: Not reported
How Discovered: Not reported
Release Date: 12/04/1986
Discovered Date: Not reported
Enter Date: / /
Stop Date: Not reported
Review Date: / /
Enforce Date: Not reported
Close Date: Not reported
Enforcement Type: SEL
Responsible Party: Not reported
RP Address: Not reported
Contact: Not reported
Cross Street: Not reported
Local Agency: 43099L
Lead Agency: Local Agency
Staff Initials: Not reported
Confirm Leak: Not reported
Workplan: Not reported
Prelim Assess: 12/11/85
Pollution Char: 02/13/1987
Remedial Plan: Not reported
Remedial Action: Not reported
Monitoring: / /
Pilot Program: LUST
Interim Action: Not reported
Funding: Not reported
MTBE Class: C
Max MTBE Grnd Wtr: 1300
Max MTBE Soil: 0
Max MTBE Data: 03/27/2002
MTBE Tested: YES
Lat/Long: 37.1343721 / -121.658071
Soil Qualifier: ND
Grnd Wtr Qualifier: =
Mtbe Concentratn: 2
Mtbe Fuel: 1
Org Name: Not reported
Basin Plan: Not reported
Beneficial: MUN
Priority: Not reported
UST Cleanup Fund ID: Not reported
Suspended: Not reported
Operator: Not reported
Water System: Not reported
Well Name: Not reported
Distance From Well: 0
Assigned Name: Not reported
Summary: Not reported

HIST LUST SANTA CLARA:

Region: SANTA CLARA
Region Code: 3
SCVWD ID: 09S3E20J01

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SHELL (Continued)

S105126409

Oversite Agency: SCCDEH
Date Listed: 1987-01-01 00:00:00
Closed Date: Not reported

CUPA SANTA CLARA:

Region: SANTA CLARA
PE#: 2202
Program Description: GENERATES < 100 KG/YR
Latitude: Not reported
Longitude: Not reported

Region: SANTA CLARA
PE#: BP01
Program Description: HMBP FACILITY, 1-3 CHEMICALS
Latitude: Not reported
Longitude: Not reported

Region: SANTA CLARA
PE#: 2399
Program Description: UNDERGROUND STORAGE TANK PROGRAM RECORD
Latitude: Not reported
Longitude: Not reported

29
NNE
1/4-1/2
0.348 mi.
1838 ft.

TENCATE ADVANCE COMPOSITES
18410 BUTTERFIELD BLVD.
MORGAN HILL, CA 95037

RCRA-LQG 1001959809
ENVIROSTOR CAR000064659
WDS

Relative:
Higher

Actual:
363 ft.

RCRA-LQG:

Date form received by agency: 02/24/2016
Facility name: TENCATE ADVANCE COMPOSITES
Facility address: 18410 BUTTERFIELD BLVD.
MORGAN HILL, CA 95037
EPA ID: CAR000064659
Mailing address: BUTTERFIELD BLVD.
MORGAN HILL, CA 95037
Contact: MARTHA ESPITIA-PENA
Contact address: BUTTERFIELD BLVD.
MORGAN HILL, CA 95037
Contact country: US
Contact telephone: (408) 465-8574
Contact email: M.ESPITIA-PENA@TCAC-USA.COM
EPA Region: 09
Land type: Private
Classification: Large Quantity Generator
Description: Handler: generates 1,000 kg or more of hazardous waste during any calendar month; or generates more than 1 kg of acutely hazardous waste during any calendar month; or generates more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month; or generates 1 kg or less of acutely hazardous waste during any calendar month, and accumulates more than 1 kg of acutely hazardous waste at any time; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates more than

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

TENCATE ADVANCE COMPOSITES (Continued)

1001959809

100 kg of that material at any time

Owner/Operator Summary:

Owner/operator name: KIM DEYOUNG
Owner/operator address: 630 S. ROSSMORE AVE.
LOS ANGELES, CA 90005
Owner/operator country: US
Owner/operator telephone: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 01/01/2005
Owner/Op end date: Not reported

Owner/operator name: PARKERS PARTNERS
Owner/operator address: SUTTER BLVD.
MORGAN HILL, CA 95037
Owner/operator country: US
Owner/operator telephone: (408) 825-1824
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 06/01/1998
Owner/Op end date: Not reported

Owner/operator name: ALIEN TECHNOLOGY
Owner/operator address: Not reported
Not reported
Owner/operator country: US
Owner/operator telephone: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 04/01/2000
Owner/Op end date: Not reported

Owner/operator name: ALIEN TECHNOLOGY CORP
Owner/operator address: 18410 BUTTERFIELD BLVD
MORGAN HILL, CA 95037
Owner/operator country: Not reported
Owner/operator telephone: (510) 783-1800
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: TENCATE ADVANCE COMPOSITES
Owner/operator address: Not reported
Not reported
Owner/operator country: Not reported
Owner/operator telephone: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 01/02/1999
Owner/Op end date: Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

TENCATE ADVANCE COMPOSITES (Continued)

1001959809

Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

. Waste code: 141
. Waste name: 141

. Waste code: 181
. Waste name: 181

. Waste code: 212
. Waste name: 212

. Waste code: 214
. Waste name: 214

. Waste code: 331
. Waste name: 331

. Waste code: 352
. Waste name: 352

. Waste code: 791
. Waste name: 791

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D003
. Waste name: REACTIVE WASTE

. Waste code: D004
. Waste name: ARSENIC

. Waste code: D008
. Waste name: LEAD

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

TENCATE ADVANCE COMPOSITES (Continued)

1001959809

MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: U112
. Waste name: ACETIC ACID, ETHYL ESTER (I) (OR) ETHYL ACETATE (I)

Historical Generators:

Date form received by agency: 07/07/2014

Site name: TENCATE ADVANCED COMPOSITES

Classification: Large Quantity Generator

. Waste code: 141
. Waste name: 141

. Waste code: 181
. Waste name: 181

. Waste code: 212
. Waste name: 212

. Waste code: 272
. Waste name: 272

. Waste code: 343
. Waste name: 343

. Waste code: 352
. Waste name: 352

. Waste code: 791
. Waste name: 791

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

TENCATE ADVANCE COMPOSITES (Continued)

1001959809

ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Date form received by agency: 12/08/2006
Site name: ALIEN TECHNOLOGY *D
Classification: Not a generator, verified

Date form received by agency: 02/27/2006
Site name: ALIEN TECHNOLOGY
Classification: Small Quantity Generator

Date form received by agency: 02/27/2006
Site name: ALIEN TECHNOLOGY
Classification: Large Quantity Generator

. Waste code: 122
. Waste name: 122

. Waste code: 181
. Waste name: 181

. Waste code: 212
. Waste name: 212

. Waste code: 331
. Waste name: 331

. Waste code: 551
. Waste name: 551

. Waste code: 791
. Waste name: 791

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D007
. Waste name: CHROMIUM

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

TENCATE ADVANCE COMPOSITES (Continued)

1001959809

. Waste code: D011
. Waste name: SILVER

Date form received by agency: 01/20/2000

Site name: ALIEN TECHNOLOGY CORP

Classification: Small Quantity Generator

. Waste code: D000
. Waste name: Not Defined

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D003
. Waste name: REACTIVE WASTE

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F004
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: CRESOLS, CRESYLIC ACID, AND NITROBENZENE; AND THE STILL BOTTOMS FROM THE RECOVERY OF THESE SOLVENTS; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: U134
. Waste name: HYDROFLUORIC ACID (C,T) (OR) HYDROGEN FLUORIDE (C,T)

Facility Has Received Notices of Violations:

Regulation violated: Not reported
Area of violation: Generators - Manifest
Date violation determined: 01/22/2016
Date achieved compliance: Not reported
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

TENCATE ADVANCE COMPOSITES (Continued)

1001959809

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 01/22/2016
Date achieved compliance: Not reported
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - Records/Reporting
Date violation determined: 01/22/2016
Date achieved compliance: Not reported
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - Pre-transport
Date violation determined: 01/22/2016
Date achieved compliance: Not reported
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Evaluation Action Summary:

Evaluation date: 01/22/2016
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 01/22/2016
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Pre-transport
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 01/22/2016
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

TENCATE ADVANCE COMPOSITES (Continued)

1001959809

Area of violation: Generators - Manifest
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 01/22/2016
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Records/Reporting
Date achieved compliance: Not reported
Evaluation lead agency: State

ENVIROSTOR:

Facility ID: 71004096
Status: Inactive - Needs Evaluation
Status Date: Not reported
Site Code: Not reported
Site Type: Tiered Permit
Site Type Detailed: Tiered Permit
Acres: Not reported
NPL: NO
Regulatory Agencies: NONE SPECIFIED
Lead Agency: NONE SPECIFIED
Program Manager: Not reported
Supervisor: Not reported
Division Branch: Cleanup Berkeley
Assembly: 30
Senate: 17
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: Not reported
Latitude: 37.14513
Longitude: -121.6577
APN: NONE SPECIFIED
Past Use: NONE SPECIFIED
Potential COC: NONE SPECIFIED
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: CAR000064659
Alias Type: EPA Identification Number
Alias Name: 110002932097
Alias Type: EPA (FRS #)
Alias Name: 71004096
Alias Type: Envirostor ID Number

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
Schedule Document Type: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

TENCATE ADVANCE COMPOSITES (Continued)

1001959809

Schedule Due Date: Not reported
Schedule Revised Date: Not reported

WDS:

Facility ID: Central Coastal 43I015752
Facility Type: Industrial - Facility that treats and/or disposes of liquid or semisolid wastes from any servicing, producing, manufacturing or processing operation of whatever nature, including mining, gravel washing, geothermal operations, air conditioning, ship building and repairing, oil production, storage and disposal operations, water pumping.
Facility Status: Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.
NPDES Number: CAS000001 The 1st 2 characters designate the state. The remaining 7 are assigned by the Regional Board
Subregion: 3
Facility Telephone: 4087823915
Facility Contact: Mary Beth Miller
Agency Name: ALIEN TECHNOLOGY CORPORATION
Agency Address: 18410 BUTTERFIELD BOULEVARD
Agency City, St, Zip: MORGAN HILL 95307
Agency Contact: MARY BETH MILLER
Agency Telephone: 4087823915
Agency Type: Private
SIC Code: 0
SIC Code 2: Not reported
Primary Waste Type: Not reported
Primary Waste: Not reported
Waste Type2: Not reported
Waste2: Not reported
Primary Waste Type: Not reported
Secondary Waste: Not reported
Secondary Waste Type: Not reported
Design Flow: 0
Baseline Flow: 0
Reclamation: Not reported
POTW: Not reported
Treat To Water: Minor Threat to Water Quality. A violation of a regional board order should cause a relatively minor impairment of beneficial uses compared to a major or minor threat. Not: All nurds without a TTWQ will be considered a minor threat to water quality unless coded at a higher Level. A Zero (0) may be used to code those NURDS that are found to represent no threat to water quality.
Complexity: Category C - Facilities having no waste treatment systems, such as cooling water dischargers or those who must comply through best management practices, facilities with passive waste treatment and disposal systems, such as septic systems with subsurface disposal, or dischargers having waste storage systems with land disposal such as dairy waste ponds.

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

30
SSE
1/4-1/2
0.365 mi.
1927 ft.

VINTAGE VALLEY PROPERTIES
17780 MONTEREY
MORGAN HILL, CA 95037

HIST CORTESE
S102440954
N/A

Relative:
Lower

HIST CORTESE:
Region: CORTESE
Facility County Code: 43
Reg By: LTNKA
Reg Id: 467

Actual:
354 ft.

I31
SE
1/4-1/2
0.401 mi.
2119 ft.

CIENEGA TRUST PROPERTY
95 E CENTRAL AVE
MORGAN HILL, CA 95037

LUST
HIST LUST
S105512831
N/A

Site 1 of 4 in cluster I

Relative:
Lower

LUST REG 3:
Region: 3
Regional Board: Central Coast Region
Facility County: Santa Clara
Global ID: T0608502378
Status: Case Closed
Case Number: 3380
Local Case Num: 09S3E21M01f
Case Type: S
Substance: Gasoline
Quantity: Not reported
Abatement Method: Not reported
Leak Source: Not reported
Leak Cause: Not reported
How Stopped: Not reported
How Discovered: Not reported
Release Date: 12/10/1998
Discovered Date: Not reported
Enter Date: / /
Stop Date: Not reported
Review Date: / /
Enforce Date: Not reported
Close Date: 12/16/98
Enforcement Type: Not reported
Responsible Party: Not reported
RP Address: Not reported
Contact: Not reported
Cross Street: Not reported
Local Agency: 43099L
Lead Agency: Local Agency
Staff Initials: Not reported
Confirm Leak: Not reported
Workplan: Not reported
Prelim Assess: Not reported
Pollution Char: / /
Remedial Plan: Not reported
Remedial Action: Not reported
Monitoring: / /
Pilot Program: LUST
Interim Action: Not reported
Funding: Not reported
MTBE Class: *

Actual:
353 ft.

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

CIENEGA TRUST PROPERTY (Continued)

S105512831

Max MTBE Grnd Wtr: Not reported
Max MTBE Soil: Not reported
Max MTBE Data: / /
MTBE Tested: NT
Lat/Long: 37.1342239 / -121.6556931
Soil Qualifier: Not reported
Grnd Wtr Qualifier: Not reported
Mtbe Concentratn: 0
Mtbe Fuel: 1
Org Name: Not reported
Basin Plan: Not reported
Beneficial: MUN
Priority: Not reported
UST Cleanup Fund ID: Not reported
Suspended: Not reported
Operator: Not reported
Water System: CITY OF MORGAN HILL
Well Name: DIANA WELL 03
Distance From Well: 0
Assigned Name: 4310006-016
Summary: Not reported

HIST LUST SANTA CLARA:

Region: SANTA CLARA
Region Code: 3
SCVWD ID: 09S3E21M01
Oversite Agency: SCVWD
Date Listed: 1998-12-16 00:00:00
Closed Date: 1998-12-16 00:00:00

I32
SE
1/4-1/2
0.401 mi.
2119 ft.
CIENEGA TRUST PROPERTY
95 E CENTRAL AVE
MORGAN HILL, CA 95037
Site 2 of 4 in cluster I

LUST
SWEEPS UST
HIST UST
CA FID UST
S101625254
N/A

Relative:
Lower

Actual:
353 ft.

LUST:
Region: STATE
Global Id: T0608502378
Latitude: 37.1342239
Longitude: -121.6556931
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 12/16/1998
Lead Agency: SANTA CLARA COUNTY LOP
Case Worker: UST
Local Agency: SANTA CLARA COUNTY LOP
RB Case Number: 3380
LOC Case Number: Not reported
File Location: All Files are on GeoTracker or in the Local Agency Database
Potential Media Affect: Soil
Potential Contaminants of Concern: Gasoline
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

Contact:
Global Id: T0608502378

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

CIENEGA TRUST PROPERTY (Continued)

S101625254

Contact Type: Local Agency Caseworker
Contact Name: UST CASE WORKER
Organization Name: SANTA CLARA COUNTY LOP
Address: 1555 Berger Drive, Suite 300
City: SAN JOSE
Email: Not reported
Phone Number: 4089183400

Status History:

Global Id: T0608502378
Status: Completed - Case Closed
Status Date: 12/16/1998

Global Id: T0608502378
Status: Open - Case Begin Date
Status Date: 12/10/1998

Regulatory Activities:

Global Id: T0608502378
Action Type: RESPONSE
Date: 09/09/1998
Action: Other Report / Document

Global Id: T0608502378
Action Type: Other
Date: 12/10/1998
Action: Leak Reported

Global Id: T0608502378
Action Type: ENFORCEMENT
Date: 12/16/1998
Action: Closure/No Further Action Letter

LUST SANTA CLARA:

Region: SANTA CLARA
SCVWD ID: 09S3E21M01F
Date Closed: 12/16/1998
EDR Link ID: 09S3E21M01F

SWEEPS UST:

Status: Active
Comp Number: 36638
Number: 9
Board Of Equalization: 44-025947
Referral Date: 07-01-85
Action Date: Not reported
Created Date: 02-29-88
Owner Tank Id: 1
SWRCB Tank Id: 43-004-036638-000001
Tank Status: A
Capacity: 550
Active Date: 07-01-85
Tank Use: UNKNOWN
STG: P

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

CIENEGA TRUST PROPERTY (Continued)

S101625254

Content: Not reported
Number Of Tanks: 1

Status: Active
Comp Number: 36638
Number: 9
Board Of Equalization: 44-025947
Referral Date: 07-01-85
Action Date: Not reported
Created Date: 02-29-88
Owner Tank Id: 1
SWRCB Tank Id: 43-004-036638-000001
Tank Status: A
Capacity: 550
Active Date: 07-01-85
Tank Use: UNKNOWN
STG: P
Content: Not reported
Number Of Tanks: 1

Status: Active
Comp Number: 36638
Number: 9
Board Of Equalization: Not reported
Referral Date: 07-01-85
Action Date: Not reported
Created Date: 02-29-88
Owner Tank Id: 1
SWRCB Tank Id: 49-000-036638-000001
Tank Status: A
Capacity: 550
Active Date: 07-01-85
Tank Use: UNKNOWN
STG: P
Content: Not reported
Number Of Tanks: 1

HIST UST:

File Number: 00020770
URL: <http://geotracker.waterboards.ca.gov/ustpdfs/pdf/00020770.pdf>
Region: Not reported
Facility ID: Not reported
Facility Type: Not reported
Other Type: Not reported
Contact Name: Not reported
Telephone: Not reported
Owner Name: Not reported
Owner Address: Not reported
Owner City,St,Zip: Not reported
Total Tanks: Not reported

Tank Num: Not reported
Container Num: Not reported
Year Installed: Not reported
Tank Capacity: Not reported
Tank Used for: Not reported
Type of Fuel: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

CIENEGA TRUST PROPERTY (Continued)

S101625254

Container Construction Thickness: Not reported
Leak Detection: Not reported

[Click here for Geo Tracker PDF:](#)

CA FID UST:

Facility ID: 43012171
Regulated By: UTNKA
Regulated ID: 00036638
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 4087792227
Mail To: Not reported
Mailing Address: 95 E CENTRAL
Mailing Address 2: Not reported
Mailing City,St,Zip: MORGAN HILL 95037
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Active

**I33
SE
1/4-1/2
0.422 mi.
2229 ft.**

**TRI-PALLET, INC. (OMNIYIG)
60 EAST CENTRAL AVE
MORGAN HILL, CA 95037**

Site 3 of 4 in cluster I

**LUST S103881427
HIST LUST N/A
Cortese**

**Relative:
Lower**

**Actual:
353 ft.**

LUST:

Region: STATE
Global Id: T0608580603
Latitude: 37.1335522
Longitude: -121.6553989
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 10/21/1998
Lead Agency: SANTA CLARA COUNTY LOP
Case Worker: UST
Local Agency: SANTA CLARA COUNTY LOP
RB Case Number: 3407
LOC Case Number: Not reported
File Location: State Records Center
Potential Media Affect: Aquifer used for drinking water supply
Potential Contaminants of Concern: Gasoline
Site History: Not reported

[Click here to access the California GeoTracker records for this facility:](#)

Contact:

Global Id: T0608580603
Contact Type: Local Agency Caseworker
Contact Name: UST CASE WORKER
Organization Name: SANTA CLARA COUNTY LOP
Address: 1555 Berger Drive, Suite 300
City: SAN JOSE
Email: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

TRI-PALLET, INC. (OMNIYIG) (Continued)

S103881427

Phone Number: 4089183400

Status History:

Global Id: T0608580603
Status: Completed - Case Closed
Status Date: 10/21/1998

Global Id: T0608580603
Status: Open - Case Begin Date
Status Date: 02/09/1987

Global Id: T0608580603
Status: Open - Site Assessment
Status Date: 02/09/1987

Global Id: T0608580603
Status: Open - Site Assessment
Status Date: 10/13/1987

Regulatory Activities:

Global Id: T0608580603
Action Type: ENFORCEMENT
Date: 10/21/1998
Action: Closure/No Further Action Letter

Global Id: T0608580603
Action Type: Other
Date: 02/09/1987
Action: Leak Reported

Global Id: T0608580603
Action Type: ENFORCEMENT
Date: 04/08/1988
Action: Clean-up and Abatement Order

Global Id: T0608580603
Action Type: ENFORCEMENT
Date: 04/08/1991
Action: Notice of Violation - #39299

Global Id: T0608580603
Action Type: ENFORCEMENT
Date: 09/02/1997
Action: Staff Letter - #18785

Global Id: T0608580603
Action Type: RESPONSE
Date: 09/05/1997
Action: Remedial Progress Report

Global Id: T0608580603
Action Type: RESPONSE
Date: 10/21/1998
Action: Other Report / Document

Global Id: T0608580603

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

TRI-PALLET, INC. (OMNIYIG) (Continued)

S103881427

Action Type: REMEDIATION
Date: 10/10/1988
Action: Excavation

Global Id: T0608580603
Action Type: REMEDIATION
Date: 10/10/1988
Action: Excavation

LUST REG 3:

Region: 3
Regional Board: Central Coast Region
Facility County: Santa Clara
Global ID: T0608580603
Status: Case Closed
Case Number: 3407
Local Case Num: 09S3E21N02f
Case Type: A
Substance: Gasoline
Quantity: Not reported
Abatement Method: Not reported
Leak Source: Not reported
Leak Cause: Not reported
How Stopped: Not reported
How Discovered: Not reported
Release Date: 02/09/1987
Discovered Date: Not reported
Enter Date: / /
Stop Date: Not reported
Review Date: / /
Enforce Date: Not reported
Close Date: 10/21/98
Enforcement Type: SEL
Responsible Party: Not reported
RP Address: Not reported
Contact: Not reported
Cross Street: Not reported
Local Agency: 43099L
Lead Agency: Local Agency
Staff Initials: Not reported
Confirm Leak: Not reported
Workplan: Not reported
Prelim Assess: 2/9/87
Pollution Char: 10/13/1987
Remedial Plan: Not reported
Remedial Action: Not reported
Monitoring: / /
Pilot Program: LUST
Interim Action: Not reported
Funding: Not reported
MTBE Class: Not reported
Max MTBE Grnd Wtr: 2.5
Max MTBE Soil: Not reported
Max MTBE Data: 10/21/1997
MTBE Tested: YES
Lat/Long: 37.133322 / -121.655319

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

TRI-PALLET, INC. (OMNIYIG) (Continued)

S103881427

Soil Qualifier: Not reported
Grnd Wtr Qualifier: =
Mtbe Concentratn: 1
Mtbe Fuel: 1
Org Name: Not reported
Basin Plan: Not reported
Beneficial: MUN
Priority: Not reported
UST Cleanup Fund ID: Not reported
Suspended: Not reported
Operator: Not reported
Water System: Not reported
Well Name: Not reported
Distance From Well: 0
Assigned Name: Not reported
Summary: Not reported

LUST SANTA CLARA:

Region: SANTA CLARA
SCVWD ID: 09S3E21N02F
Date Closed: 10/21/1998
EDR Link ID: 09S3E21N02F

HIST LUST SANTA CLARA:

Region: SANTA CLARA
Region Code: 3
SCVWD ID: 09S3E21N02
Oversite Agency: SCVWD
Date Listed: 1988-01-01 00:00:00
Closed Date: 1998-10-21 00:00:00

CORTESE:

Region: CORTESE
Envirostor Id: Not reported
Site/Facility Type: Not reported
Cleanup Status: Not reported
Status Date: Not reported
Site Code: Not reported
Latitude: Not reported
Longitude: Not reported
Owner: Not reported
Enf Type: Not reported
Swat R: Not reported
Flag: CORTESE
Order No: Not reported
Waste Discharge System No: Not reported
Effective Date: Not reported
Region 2: Not reported
WID Id: Not reported
Solid Waste Id No: Not reported
Waste Management Uit Name: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

I34 TRI-PALLET, INC. (OMNIYIG)
SE 60 EAST CENTRAL AVE
1/4-1/2 MORGAN HILL, CA 95037
0.422 mi.
2229 ft. Site 4 of 4 in cluster I

ENF S101309011
HIST CORTESE N/A

Relative:
Lower

Actual:
353 ft.

ENF:

Region: 3
Facility Id: 266382
Agency Name: Not reported
Place Type: Facility
Place Subtype: Not reported
Facility Type: All other facilities
Agency Type: Not reported
Of Agencies: Not reported
Place Latitude: 37.133387
Place Longitude: -121.655516
SIC Code 1: Not reported
SIC Desc 1: Not reported
SIC Code 2: Not reported
SIC Desc 2: Not reported
SIC Code 3: Not reported
SIC Desc 3: Not reported
NAICS Code 1: Not reported
NAICS Desc 1: Not reported
NAICS Code 2: Not reported
NAICS Desc 2: Not reported
NAICS Code 3: Not reported
NAICS Desc 3: Not reported
Of Places: 1
Source Of Facility: Enf Action
Design Flow: Not reported
Threat To Water Quality: Not reported
Complexity: Not reported
Pretreatment: Not reported
Facility Waste Type: Not reported
Facility Waste Type 2: Not reported
Facility Waste Type 3: Not reported
Facility Waste Type 4: Not reported
Program: Not reported
Program Category1: Not reported
Program Category2: WDR
Of Programs: Not reported
WDID: Not reported
Reg Measure Id: Not reported
Reg Measure Type: Not reported
Region: Not reported
Order #: Not reported
Npdes# CA#: Not reported
Major-Minor: Not reported
Npdes Type: Not reported
Reclamation: Not reported
Dredge Fill Fee: Not reported
301H: Not reported
Application Fee Amt Received: Not reported
Status: Not reported
Status Date: Not reported
Effective Date: Not reported
Expiration/Review Date: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

TRI-PALLET, INC. (OMNIYIG) (Continued)

S101309011

Termination Date: Not reported
WDR Review - Amend: Not reported
WDR Review - Revise/Renew: Not reported
WDR Review - Rescind: Not reported
WDR Review - No Action Required: Not reported
WDR Review - Pending: Not reported
WDR Review - Planned: Not reported
Status Enrollee: Not reported
Individual/General: Not reported
Fee Code: Not reported
Direction/Voice: Not reported
Enforcement Id(EID): 221726
Region: 3
Order / Resolution Number: 88-064
Enforcement Action Type: Clean-up and Abatement Order
Effective Date: 03/17/1988
Adoption/Issuance Date: Not reported
Achieve Date: Not reported
Termination Date: Not reported
ACL Issuance Date: Not reported
EPL Issuance Date: Not reported
Status: Active
Title: Enforcement - 3 432038001
Description: NONE
Program: WDR
Latest Milestone Completion Date: Not reported
Of Programs1: 1
Total Assessment Amount: 0
Initial Assessed Amount: 0
Liability \$ Amount: 0
Project \$ Amount: 0
Liability \$ Paid: 0
Project \$ Completed: 0
Total \$ Paid/Completed Amount: 0

HIST CORTESE:

Region: CORTESE
Facility County Code: 43
Reg By: LTNKA
Reg Id: 591

Region: CORTESE
Facility County Code: 43
Reg By: WBC&D
Reg Id: 3 432038001

35
NNW
1/4-1/2
0.474 mi.
2505 ft.

DEPRESSURIZED TECHNOLOGIES INT
335 COCHRANE CIR
MORGAN HILL, CA 95037

RCRA-SQG 1000820468
FINDS CAD983665068
ECHO
ICE
HWP

Relative:
Higher

RCRA-SQG:

Date form received by agency: 10/12/2000

Actual:
357 ft.

Facility name: DEPRESSURIZED TECHNOLOGIES INT
Site name: DEPRESSURIZED TECHNOLOGIES INTERNATIONAL
Facility address: 335 COCHRANE CIRCLE

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

DEPRESSURIZED TECHNOLOGIES INT (Continued)

1000820468

EPA ID: MORGAN HILL, CA 950372838
Contact: CAD983665068
Contact address: WALTER GONZALES
Not reported
Not reported
Contact country: US
Contact telephone: (408) 776-7816
Contact email: Not reported
EPA Region: 09
Land type: Private
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Handler Activities Summary:

U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: Yes
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:

Date form received by agency: 03/04/1999
Site name: DEPRESSURIZED TECHNOLOGIES INTERNATIONAL
Classification: Large Quantity Generator

Date form received by agency: 09/01/1996
Site name: DEPRESSURIZED TECHNOLOGIES INT
Classification: Small Quantity Generator

Date form received by agency: 04/19/1993
Site name: DEPRESSURIZED TECHNOLOGIES INT
Classification: Large Quantity Generator

Facility Has Received Notices of Violations:

Regulation violated: Not reported
Area of violation: TSD - Container Use and Management
Date violation determined: 03/26/1999
Date achieved compliance: 03/30/1999
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 03/30/1999
Enf. disposition status: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

DEPRESSURIZED TECHNOLOGIES INT (Continued)

1000820468

Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Evaluation Action Summary:

Evaluation date: 01/28/2003
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 03/26/1999
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - Container Use and Management
Date achieved compliance: 03/30/1999
Evaluation lead agency: State

FINDS:

Registry ID: 110000785561

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

[Click this hyperlink](#) while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid: 1000820468
Registry ID: 110000785561
DFR URL: <http://echo.epa.gov/detailed-facility-report?fid=110000785561>

ICE:

Envirostor ID: 3001585
EPA ID: CAD983665068
Site Type: INSPECTION
Facility Status: No Action

Inspection:

Action Type: Compliance Evaluation Inspection - Standardized Permit
Action Date: 01/28/2003
Violation Class: No Violations
RTC Date: Not reported

Action Type: Compliance Evaluation Inspection - Standardized Permit
Action Date: 03/26/1999
Violation Class: Minor
RTC Date: 03/30/1999

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

DEPRESSURIZED TECHNOLOGIES INT (Continued)

1000820468

HWP:

EPA Id: CAD983665068
Cleanup Status: CLOSED
Latitude: 37.14720
Longitude: -121.6641
Facility Type: Historical - Non-Operating
Facility Size: Not reported
Team: Not reported
Supervisor: Not reported
Site Code: 200961, 520008
Assembly District: 30
Senate District: 17
Public Information Officer: Not reported
Public Information Officer: Not reported

Closure:

EPA Id: CAD983665068
Facility Type: Historical - Non-Operating
Unit Names: Pressurized Gas Tank Stor Unit(DTI-S3)
Event Description: Closure Final - RECEIVE CLOSURE CERTIFICATION
Actual Date: 09/27/2002

EPA Id: CAD983665068
Facility Type: Historical - Non-Operating
Unit Names: Pressurized Gas Tank Stor Unit(DTI-S3)
Event Description: Closure Final - ISSUE CLOSURE VERIFICATION
Actual Date: 10/11/2002

Alias:

EPA Id: CAD983665068
Facility Type: Historical - Non-Operating
Alias Type: FRS
Alias: 110000785561

EPA Id: CAD983665068
Facility Type: Historical - Non-Operating
Alias Type: Project Code (Site Code)
Alias: 200961

EPA Id: CAD983665068
Facility Type: Historical - Non-Operating
Alias Type: Project Code (Site Code)
Alias: 520008

36
North
1/2-1
0.547 mi.
2887 ft.

MADRONE LAND CORPORATION
645 COCHRANE ROAD
MORGAN HILL, CA 95037

ENVIROSTOR S101482285
SLIC N/A
DEED
HIST CORTESE

Relative:
Higher

ENVIROSTOR:
Facility ID: 43010016
Status: Refer: RWQCB
Status Date: 08/21/1996
Site Code: Not reported
Site Type: Historical

Actual:
366 ft.

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

MADRONE LAND CORPORATION (Continued)

S101482285

Site Type Detailed: * Historical
Acres: Not reported
NPL: NO
Regulatory Agencies: NONE SPECIFIED
Lead Agency: NONE SPECIFIED
Program Manager: Rick Jones
Supervisor: Antonia Becker
Division Branch: Cleanup Berkeley
Assembly: 30
Senate: 17
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: Not reported
Latitude: 37.15062
Longitude: -121.6562
APN: NONE SPECIFIED
Past Use: NONE SPECIFIED
Potential COC: * WASTE OIL & MIXED OIL Lead
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: MADRONE LAND CORP./SAN JOSE TRAP & SKEET
Alias Type: Alternate Name
Alias Name: 43010016
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Screening
Completed Date: 11/10/1992
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

SLIC:

Region: STATE
Facility Status: **Completed - Case Closed**
Status Date: 08/09/1995
Global Id: SL20274892
Lead Agency: SAN FRANCISCO BAY RWQCB (REGION 2)
Lead Agency Case Number: Not reported
Latitude: 37.1292648829132
Longitude: -121.641437342297
Case Type: Cleanup Program Site
Case Worker: UUU
Local Agency: Not reported
RB Case Number: SL20274892
File Location: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

MADRONE LAND CORPORATION (Continued)

S101482285

Potential Media Affected: Not reported
Potential Contaminants of Concern: Not reported
Site History: Not reported

[Click here to access the California GeoTracker records for this facility:](#)

DEED:

Envirostor ID: SL20274892
Area: Not reported
Sub Area: Not reported
Site Type: SLIC
Status: COMPLETED - CASE CLOSED
Agency: SWRCB
Covenant Uploaded: Y
Deed Date(s): 10/02/2001

HIST CORTESE:

Region: CORTESE
Facility County Code: 43
Reg By: CALSI
Reg Id: 43010016

37
NNE
1/2-1
0.649 mi.
3425 ft.

PHOTOTEK
18450 SUTTER BLVD
MORGAN HILL, CA 95037

RCRA-SQG **1001115570**
ENVIROSTOR **CAR000015065**
HAZNET

Relative:
Higher

Actual:
373 ft.

RCRA-SQG:

Date form received by agency: 04/30/2002
Facility name: PHOTOTEK
Facility address: 18450 SUTTER BLVD
MORGAN HILL, CA 95037
EPA ID: CAR000015065
Mailing address: 307 CONSTITUTION DRIVE, MS
MENLO PARK, CA 94025
Contact: ROBIN A ADAIR
Contact address: Not reported
Contact country: US
Contact telephone: (650) 361-3022
Telephone ext.: 3022
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name: JAMES OSTENDORF
Owner/operator address: 2310 LUNDY AVE
SAN JOSE, CA 95131
Owner/operator country: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

PHOTOTEK (Continued)

1001115570

Owner/operator telephone: (408) 435-5501
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: TYCO ELECTRONICS CORPORATION
Owner/operator address: Not reported
Not reported
Owner/operator country: US
Owner/operator telephone: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 01/01/2002
Owner/Op end date: Not reported

Owner/operator name: TYCO ELECTRONICS CORPORATION
Owner/operator address: Not reported
Not reported
Owner/operator country: US
Owner/operator telephone: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 01/01/2002
Owner/Op end date: Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:

Date form received by agency: 04/30/2002
Site name: PHOTOTEK
Classification: Large Quantity Generator

. Waste code: 121
. Waste name: 121

. Waste code: 122
. Waste name: 122

. Waste code: 132
. Waste name: 132

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

PHOTOTEK (Continued)

1001115570

. Waste code: 141
. Waste name: 141

. Waste code: 171
. Waste name: 171

. Waste code: 181
. Waste name: 181

. Waste code: 331
. Waste name: 331

. Waste code: 791
. Waste name: 791

. Waste code: 792
. Waste name: 792

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D004
. Waste name: ARSENIC

. Waste code: D007
. Waste name: CHROMIUM

. Waste code: D008
. Waste name: LEAD

. Waste code: F006
. Waste name: WASTEWATER TREATMENT SLUDGES FROM ELECTROPLATING OPERATIONS, EXCEPT FROM THE FOLLOWING PROCESSES: (1) SULFURIC ACID ANODIZING OF ALUMINUM; (2) TIN PLATING ON CARBON STEEL; (3) ZINC PLATING (SEGREGATED BASIS) ON CARBON STEEL; (4) ALUMINUM OR ZINC-ALUMINUM PLATING ON CARBON STEEL; (5) CLEANING/STRIPPING ASSOCIATED WITH TIN, ZINC, AND ALUMINUM PLATING ON CARBON STEEL; AND (6) CHEMICAL ETCHING AND MILLING OF ALUMINUM.

Date form received by agency: 04/30/2001

Site name: DYNAVISON INC DBA PHOTOTEK

Classification: Large Quantity Generator

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D004
. Waste name: ARSENIC

. Waste code: D007
. Waste name: CHROMIUM

. Waste code: D008
. Waste name: LEAD

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

PHOTOTEK (Continued)

1001115570

Waste code: F006
Waste name: WASTEWATER TREATMENT SLUDGES FROM ELECTROPLATING OPERATIONS, EXCEPT FROM THE FOLLOWING PROCESSES: (1) SULFURIC ACID ANODIZING OF ALUMINUM; (2) TIN PLATING ON CARBON STEEL; (3) ZINC PLATING (SEGREGATED BASIS) ON CARBON STEEL; (4) ALUMINUM OR ZINC-ALUMINUM PLATING ON CARBON STEEL; (5) CLEANING/STRIPPING ASSOCIATED WITH TIN, ZINC, AND ALUMINUM PLATING ON CARBON STEEL; AND (6) CHEMICAL ETCHING AND MILLING OF ALUMINUM.

Date form received by agency: 03/04/1999
Site name: AGASIS
Classification: Large Quantity Generator

Violation Status: No violations found

ENVIROSTOR:

Facility ID: 71003458
Status: Inactive - Needs Evaluation
Status Date: Not reported
Site Code: Not reported
Site Type: Tiered Permit
Site Type Detailed: Tiered Permit
Acres: Not reported
NPL: NO
Regulatory Agencies: NONE SPECIFIED
Lead Agency: NONE SPECIFIED
Program Manager: Not reported
Supervisor: Not reported
Division Branch: Cleanup Berkeley
Assembly: 30
Senate: 17
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: Not reported
Latitude: 37.14834
Longitude: -121.6543
APN: NONE SPECIFIED
Past Use: NONE SPECIFIED
Potential COC: NONE SPECIFIED
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: CAR000015065
Alias Type: EPA Identification Number
Alias Name: 110008062005
Alias Type: EPA (FRS #)
Alias Name: 71003458
Alias Type: Envirostor ID Number

Completed Info:

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Correspondence
Completed Date: 07/11/2012
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

PHOTOTEK (Continued)

1001115570

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

HAZNET:

envid: 1001115570
Year: 2004
GEPAID: CAR000015065
Contact: JAMES OSTENDOR F
Telephone: 6509486781
Mailing Name: Not reported
Mailing Address: 738 LOYOLA DR
Mailing City,St,Zip: LOS ALTOS, CA 94024
Gen County: Not reported
TSD EPA ID: CAD008302903
TSD County: Not reported
Waste Category: Aqueous solution with total organic residues less than 10 percent
Disposal Method: Transfer Station
Tons: 9.17
Cat Decode: Not reported
Method Decode: Not reported
Facility County: Santa Clara

envid: 1001115570
Year: 2003
GEPAID: CAR000015065
Contact: JAMES OSTENDOR F
Telephone: 6509486781
Mailing Name: Not reported
Mailing Address: 738 LOYOLA DR
Mailing City,St,Zip: LOS ALTOS, CA 94024
Gen County: Not reported
TSD EPA ID: CAT000646117
TSD County: Not reported
Waste Category: Other organic solids
Disposal Method: Disposal, Land Fill
Tons: 67.42
Cat Decode: Not reported
Method Decode: Not reported
Facility County: Santa Clara

envid: 1001115570
Year: 2002
GEPAID: CAR000015065
Contact: JAMES OSTENDOR F
Telephone: 6509486781
Mailing Name: Not reported
Mailing Address: 738 LOYOLA DR
Mailing City,St,Zip: LOS ALTOS, CA 94024
Gen County: Not reported
TSD EPA ID: CAT080014079
TSD County: Not reported
Waste Category: Off-specification, aged or surplus organics

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

PHOTOTEK (Continued)

1001115570

Disposal Method: Transfer Station
Tons: 0.58
Cat Decode: Not reported
Method Decode: Not reported
Facility County: Santa Clara

envid: 1001115570
Year: 2002
GEPAID: CAR000015065
Contact: JAMES OSTENDOR F
Telephone: 6509486781
Mailing Name: Not reported
Mailing Address: 738 LOYOLA DR
Mailing City,St,Zip: LOS ALTOS, CA 94024
Gen County: Not reported
TSD EPA ID: CAT080014079
TSD County: Not reported
Waste Category: Off-specification, aged or surplus inorganics
Disposal Method: Transfer Station
Tons: 0
Cat Decode: Not reported
Method Decode: Not reported
Facility County: Santa Clara

envid: 1001115570
Year: 2002
GEPAID: CAR000015065
Contact: JAMES OSTENDOR F
Telephone: 6509486781
Mailing Name: Not reported
Mailing Address: 738 LOYOLA DR
Mailing City,St,Zip: LOS ALTOS, CA 94024
Gen County: Not reported
TSD EPA ID: CAD097030993
TSD County: Not reported
Waste Category: Other organic solids
Disposal Method: Disposal, Other
Tons: 0.12
Cat Decode: Not reported
Method Decode: Not reported
Facility County: Santa Clara

[Click this hyperlink](#) while viewing on your computer to access
75 additional CA_HAZNET: record(s) in the EDR Site Report.

38
SE
1/2-1
0.859 mi.
4535 ft.

SUNSWEET
91 EAST 4TH STREET
MORGAN HILL, CA 95037

ENVIROSTOR S111842212
N/A

Relative:
Lower

ENVIROSTOR:
Facility ID: 43200019
Status: Refer: Other Agency
Status Date: 04/05/1996
Site Code: Not reported
Site Type: Historical
Site Type Detailed: * Historical

Actual:
354 ft.

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SUNSWEET (Continued)

S111842212

Acres: Not reported
NPL: NO
Regulatory Agencies: NONE SPECIFIED
Lead Agency: NONE SPECIFIED
Program Manager: Not reported
Supervisor: Referred - Not Assigned
Division Branch: Cleanup Berkeley
Assembly: 30
Senate: 17
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: Not reported
Latitude: 37.12832
Longitude: -121.6504
APN: 726-13-032
Past Use: NONE SPECIFIED
Potential COC: NONE SPECIFIED
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: 726-13-032
Alias Type: APN
Alias Name: 43200019
Alias Type: Envirostor ID Number

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
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

39
East
1/2-1
0.893 mi.
4716 ft.

RYAN PROPERTIES
E. MAIN AVE. & EAST LANE
MORGAN HILL, CA 95037

ENVIROSTOR S100351771
N/A

Relative:
Higher

ENVIROSTOR:
Facility ID: 43010015
Status: No Further Action
Status Date: 07/10/2006
Site Code: 201524
Site Type: Evaluation
Site Type Detailed: Evaluation
Acres: 20
NPL: NO
Regulatory Agencies: NONE SPECIFIED

Actual:
370 ft.

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

RYAN PROPERTIES (Continued)

S100351771

Lead Agency: NONE SPECIFIED
Program Manager: Not reported
Supervisor: Denise Tsuji
Division Branch: Cleanup Berkeley
Assembly: 30
Senate: 17
Special Program: EPA - PASI
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: Not reported
Latitude: 37.13876
Longitude: -121.6430
APN: NONE SPECIFIED
Past Use: AGRICULTURAL - ROW CROPS
Potential COC: NONE SPECIFIED No Contaminants found
Confirmed COC: NONE SPECIFIED
Potential Description: NMA
Alias Name: RYAN PROPERTIES
Alias Type: Alternate Name
Alias Name: 201524
Alias Type: Project Code (Site Code)
Alias Name: 43010015
Alias Type: Envirostor ID Number

Completed Info:

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Screening
Completed Date: 08/13/1996
Comments: Completed Site Screening. A variety of chemicals were present in non-hazardous levels (>TTLC) : arsenic to 91 ppm, chromium to 62 ppm, lead to 480 ppm, zinc to 190 ppm, and extractable hydrocarbons (motor oil) to 45,000 ppm. Pesticides including DDT and dieldrin are present below soluble limits. The former farm vacant, a large garbage pile, and auto painting wastes were reported on site. The buyer wants the seller to get a signoff from the City who in turn, referred the site to DTSC.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Screening
Completed Date: 01/10/2000
Comments: Site screening approved by USEPA. No further action required under CERCLA. Post-removal concentrations of contaminants (lead, DDE, DDT, and dieldrin) were below CHHSLs.

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

Count: 3 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
MORGAN HILL	S109281051	CITY OF MORGAN HILL PUBLIC WOR	COCHRAN & MONTEREY RDS GATEWA	95037	EMI
MORGAN HILL	S111120580	FORMER WHITE GASOLINE	MONTEREY RD & WATSONVILLE RD		LUST
MORGAN HILL	S107541046		VEHICLE STOP AT VINEYARD & MON	95037	CDL

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: 04/05/2017	Source: EPA
Date Data Arrived at EDR: 04/21/2017	Telephone: N/A
Date Made Active in Reports: 05/12/2017	Last EDR Contact: 07/07/2017
Number of Days to Update: 21	Next Scheduled EDR Contact: 10/16/2017
	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: 04/05/2017	Source: EPA
Date Data Arrived at EDR: 04/21/2017	Telephone: N/A
Date Made Active in Reports: 05/12/2017	Last EDR Contact: 07/07/2017
Number of Days to Update: 21	Next Scheduled EDR Contact: 10/16/2017
	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	Source: EPA
Date Data Arrived at EDR: 02/02/1994	Telephone: 202-564-4267
Date Made Active in Reports: 03/30/1994	Last EDR Contact: 08/15/2011
Number of Days to Update: 56	Next Scheduled EDR Contact: 11/28/2011
	Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 04/05/2017	Source: EPA
Date Data Arrived at EDR: 04/21/2017	Telephone: N/A
Date Made Active in Reports: 05/12/2017	Last EDR Contact: 07/07/2017
Number of Days to Update: 21	Next Scheduled EDR Contact: 10/16/2017
	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	Source: Environmental Protection Agency
Date Data Arrived at EDR: 01/05/2017	Telephone: 703-603-8704
Date Made Active in Reports: 04/07/2017	Last EDR Contact: 07/07/2017
Number of Days to Update: 92	Next Scheduled EDR Contact: 10/16/2017
	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 known 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: 02/07/2017	Source: EPA
Date Data Arrived at EDR: 04/19/2017	Telephone: 800-424-9346
Date Made Active in Reports: 05/05/2017	Last EDR Contact: 07/21/2017
Number of Days to Update: 16	Next Scheduled EDR Contact: 10/30/2017
	Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 02/07/2017	Source: EPA
Date Data Arrived at EDR: 04/19/2017	Telephone: 800-424-9346
Date Made Active in Reports: 05/05/2017	Last EDR Contact: 07/28/2017
Number of Days to Update: 16	Next Scheduled EDR Contact: 10/30/2017
	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: 12/12/2016	Source: EPA
Date Data Arrived at EDR: 12/28/2016	Telephone: 800-424-9346
Date Made Active in Reports: 02/10/2017	Last EDR Contact: 08/11/2017
Number of Days to Update: 44	Next Scheduled EDR Contact: 10/09/2017
	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: 12/12/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 12/28/2016	Telephone: (415) 495-8895
Date Made Active in Reports: 02/10/2017	Last EDR Contact: 08/11/2017
Number of Days to Update: 44	Next Scheduled EDR Contact: 10/09/2017
	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: 12/12/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 12/28/2016	Telephone: (415) 495-8895
Date Made Active in Reports: 02/10/2017	Last EDR Contact: 08/11/2017
Number of Days to Update: 44	Next Scheduled EDR Contact: 10/09/2017
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 12/12/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 12/28/2016	Telephone: (415) 495-8895
Date Made Active in Reports: 02/10/2017	Last EDR Contact: 08/11/2017
Number of Days to Update: 44	Next Scheduled EDR Contact: 10/09/2017
	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: 12/12/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 12/28/2016	Telephone: (415) 495-8895
Date Made Active in Reports: 02/10/2017	Last EDR Contact: 08/11/2017
Number of Days to Update: 44	Next Scheduled EDR Contact: 10/09/2017
	Data Release Frequency: Varies

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: 12/28/2016	Source: Department of the Navy
Date Data Arrived at EDR: 01/04/2017	Telephone: 843-820-7326
Date Made Active in Reports: 04/07/2017	Last EDR Contact: 08/10/2017
Number of Days to Update: 93	Next Scheduled EDR Contact: 11/27/2017
	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: 02/13/2017	Source: Environmental Protection Agency
Date Data Arrived at EDR: 02/28/2017	Telephone: 703-603-0695
Date Made Active in Reports: 06/09/2017	Last EDR Contact: 05/31/2017
Number of Days to Update: 101	Next Scheduled EDR Contact: 09/11/2017
	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: 02/13/2017	Source: Environmental Protection Agency
Date Data Arrived at EDR: 02/28/2017	Telephone: 703-603-0695
Date Made Active in Reports: 06/09/2017	Last EDR Contact: 05/31/2017
Number of Days to Update: 101	Next Scheduled EDR Contact: 09/11/2017
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 09/26/2016
Date Data Arrived at EDR: 09/29/2016
Date Made Active in Reports: 11/11/2016
Number of Days to Update: 43

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 06/28/2017
Next Scheduled EDR Contact: 10/09/2017
Data Release Frequency: Annually

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: 07/31/2017
Date Data Arrived at EDR: 08/01/2017
Date Made Active in Reports: 08/15/2017
Number of Days to Update: 14

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/01/2017
Next Scheduled EDR Contact: 11/13/2017
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 identifies 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: 07/31/2017
Date Data Arrived at EDR: 08/01/2017
Date Made Active in Reports: 08/15/2017
Number of Days to Update: 14

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/01/2017
Next Scheduled EDR Contact: 11/13/2017
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 inventory of solid waste disposal facilities or landfills. These may be active or inactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 02/13/2017
Date Data Arrived at EDR: 02/15/2017
Date Made Active in Reports: 05/02/2017
Number of Days to Update: 76

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 08/17/2017
Next Scheduled EDR Contact: 11/27/2017
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 03/13/2017
Date Data Arrived at EDR: 03/14/2017
Date Made Active in Reports: 05/02/2017
Number of Days to Update: 49

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 06/14/2017
Next Scheduled EDR Contact: 09/25/2017
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 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 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

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 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.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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 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 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 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

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: 11/14/2016
Date Data Arrived at EDR: 01/26/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 99

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 07/27/2017
Next Scheduled EDR Contact: 11/08/2017
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Florida, Mississippi and North Carolina.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/14/2016
Date Data Arrived at EDR: 01/27/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 98

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 07/28/2017
Next Scheduled EDR Contact: 11/08/2017
Data Release Frequency: Semi-Annually

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: 11/14/2016
Date Data Arrived at EDR: 01/26/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 99

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 07/27/2017
Next Scheduled EDR Contact: 11/08/2017
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: 10/07/2016
Date Data Arrived at EDR: 01/26/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 99

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 07/27/2017
Next Scheduled EDR Contact: 11/08/2017
Data Release Frequency: Quarterly

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: 10/06/2016
Date Data Arrived at EDR: 01/26/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 99

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 07/27/2017
Next Scheduled EDR Contact: 11/08/2017
Data Release Frequency: Quarterly

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: 10/17/2016
Date Data Arrived at EDR: 01/26/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 99

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 07/27/2017
Next Scheduled EDR Contact: 11/08/2017
Data Release Frequency: Quarterly

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 09/01/2016
Date Data Arrived at EDR: 01/26/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 99

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 07/27/2017
Next Scheduled EDR Contact: 11/08/2017
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: 10/01/2016
Date Data Arrived at EDR: 01/26/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 99

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 07/27/2017
Next Scheduled EDR Contact: 11/08/2017
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 03/13/2017
Date Data Arrived at EDR: 03/14/2017
Date Made Active in Reports: 05/02/2017
Number of Days to Update: 49

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/14/2017
Next Scheduled EDR Contact: 09/25/2017
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

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 07/14/2017
Next Scheduled EDR Contact: 10/23/2017
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

UST: Active UST Facilities

Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 03/12/2017	Source: SWRCB
Date Data Arrived at EDR: 03/16/2017	Telephone: 916-341-5851
Date Made Active in Reports: 05/12/2017	Last EDR Contact: 06/14/2017
Number of Days to Update: 57	Next Scheduled EDR Contact: 09/25/2017
	Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tank Facilities

A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 07/06/2016	Source: California Environmental Protection Agency
Date Data Arrived at EDR: 07/12/2016	Telephone: 916-327-5092
Date Made Active in Reports: 09/19/2016	Last EDR Contact: 06/21/2017
Number of Days to Update: 69	Next Scheduled EDR Contact: 10/09/2017
	Data Release Frequency: Quarterly

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: 01/14/2017	Source: EPA Region 5
Date Data Arrived at EDR: 01/26/2017	Telephone: 312-886-6136
Date Made Active in Reports: 05/05/2017	Last EDR Contact: 07/27/2017
Number of Days to Update: 99	Next Scheduled EDR Contact: 11/08/2017
	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: 10/07/2016	Source: EPA Region 10
Date Data Arrived at EDR: 01/26/2017	Telephone: 206-553-2857
Date Made Active in Reports: 05/05/2017	Last EDR Contact: 07/27/2017
Number of Days to Update: 99	Next Scheduled EDR Contact: 11/08/2017
	Data Release Frequency: Quarterly

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: 09/01/2016	Source: EPA Region 7
Date Data Arrived at EDR: 01/26/2017	Telephone: 913-551-7003
Date Made Active in Reports: 05/05/2017	Last EDR Contact: 07/27/2017
Number of Days to Update: 99	Next Scheduled EDR Contact: 11/08/2017
	Data Release Frequency: Varies

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: 10/14/2016	Source: EPA Region 4
Date Data Arrived at EDR: 01/27/2017	Telephone: 404-562-9424
Date Made Active in Reports: 05/05/2017	Last EDR Contact: 07/28/2017
Number of Days to Update: 98	Next Scheduled EDR Contact: 11/08/2017
	Data Release Frequency: Semi-Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 10/01/2016	Source: EPA Region 6
Date Data Arrived at EDR: 01/26/2017	Telephone: 214-665-7591
Date Made Active in Reports: 05/05/2017	Last EDR Contact: 07/27/2017
Number of Days to Update: 99	Next Scheduled EDR Contact: 11/08/2017
	Data Release Frequency: Semi-Annually

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: 10/17/2016	Source: EPA Region 8
Date Data Arrived at EDR: 01/26/2017	Telephone: 303-312-6137
Date Made Active in Reports: 05/05/2017	Last EDR Contact: 07/27/2017
Number of Days to Update: 99	Next Scheduled EDR Contact: 11/08/2017
	Data Release Frequency: Quarterly

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: 11/14/2016	Source: EPA, Region 1
Date Data Arrived at EDR: 01/26/2017	Telephone: 617-918-1313
Date Made Active in Reports: 05/05/2017	Last EDR Contact: 07/27/2017
Number of Days to Update: 99	Next Scheduled EDR Contact: 11/08/2017
	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: 10/06/2016	Source: EPA Region 9
Date Data Arrived at EDR: 01/26/2017	Telephone: 415-972-3368
Date Made Active in Reports: 05/05/2017	Last EDR Contact: 07/27/2017
Number of Days to Update: 99	Next Scheduled EDR Contact: 11/08/2017
	Data Release Frequency: Quarterly

State and tribal voluntary cleanup sites

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	Source: EPA, Region 1
Date Data Arrived at EDR: 09/29/2015	Telephone: 617-918-1102
Date Made Active in Reports: 02/18/2016	Last EDR Contact: 06/27/2017
Number of Days to Update: 142	Next Scheduled EDR Contact: 10/09/2017
	Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008	Source: EPA, Region 7
Date Data Arrived at EDR: 04/22/2008	Telephone: 913-551-7365
Date Made Active in Reports: 05/19/2008	Last EDR Contact: 04/20/2009
Number of Days to Update: 27	Next Scheduled EDR Contact: 07/20/2009
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 07/31/2017
Date Data Arrived at EDR: 08/01/2017
Date Made Active in Reports: 08/15/2017
Number of Days to Update: 14

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/01/2017
Next Scheduled EDR Contact: 11/13/2017
Data Release Frequency: Quarterly

State and tribal Brownfields sites

BROWNFIELDS: Considered Brownfields 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: 01/03/2017
Date Data Arrived at EDR: 01/04/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 57

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 06/28/2017
Next Scheduled EDR Contact: 10/09/2017
Data Release Frequency: Varies

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: 03/02/2017
Date Data Arrived at EDR: 03/02/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 36

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 06/20/2017
Next Scheduled EDR Contact: 10/02/2017
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: 08/03/2017
Next Scheduled EDR Contact: 11/20/2017
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SWRCY: Recycler Database

A listing of recycling facilities in California.

Date of Government Version: 03/13/2017
Date Data Arrived at EDR: 03/14/2017
Date Made Active in Reports: 05/03/2017
Number of Days to Update: 50

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 06/14/2017
Next Scheduled EDR Contact: 09/25/2017
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing

A listing of registered waste tire haulers.

Date of Government Version: 05/30/2017
Date Data Arrived at EDR: 05/31/2017
Date Made Active in Reports: 08/15/2017
Number of Days to Update: 76

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 08/10/2017
Next Scheduled EDR Contact: 11/27/2017
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: 08/01/2017
Next Scheduled EDR Contact: 11/13/2017
Data Release Frequency: Varies

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: 07/24/2017
Next Scheduled EDR Contact: 11/08/2017
Data Release Frequency: No Update Planned

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

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 Services, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 08/10/2017
Next Scheduled EDR Contact: 11/13/2017
Data Release Frequency: Varies

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.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 02/09/2017
Date Data Arrived at EDR: 03/08/2017
Date Made Active in Reports: 06/09/2017
Number of Days to Update: 93

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 02/28/2017
Next Scheduled EDR Contact: 06/12/2017
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: 07/31/2017
Date Data Arrived at EDR: 08/01/2017
Date Made Active in Reports: 08/15/2017
Number of Days to Update: 14

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/01/2017
Next Scheduled EDR Contact: 11/13/2017
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: 12/31/2016
Date Data Arrived at EDR: 03/17/2017
Date Made Active in Reports: 05/10/2017
Number of Days to Update: 54

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 08/14/2017
Next Scheduled EDR Contact: 10/23/2017
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: 02/09/2017
Date Data Arrived at EDR: 03/08/2017
Date Made Active in Reports: 06/09/2017
Number of Days to Update: 93

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/31/2017
Next Scheduled EDR Contact: 09/11/2017
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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	Source: State Water Resources Control Board
Date Data Arrived at EDR: 07/07/2005	Telephone: N/A
Date Made Active in Reports: 08/11/2005	Last EDR Contact: 06/03/2005
Number of Days to Update: 35	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: 03/09/2017	Source: Department of Public Health
Date Data Arrived at EDR: 03/17/2017	Telephone: 707-463-4466
Date Made Active in Reports: 05/23/2017	Last EDR Contact: 05/24/2017
Number of Days to Update: 67	Next Scheduled EDR Contact: 09/11/2017
	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	Source: State Water Resources Control Board
Date Data Arrived at EDR: 01/25/1991	Telephone: 916-341-5851
Date Made Active in Reports: 02/12/1991	Last EDR Contact: 07/26/2001
Number of Days to Update: 18	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

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	Source: California Environmental Protection Agency
Date Data Arrived at EDR: 09/05/1995	Telephone: 916-341-5851
Date Made Active in Reports: 09/29/1995	Last EDR Contact: 12/28/1998
Number of Days to Update: 24	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

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: 03/06/2017	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 03/07/2017	Telephone: 916-323-3400
Date Made Active in Reports: 04/21/2017	Last EDR Contact: 06/02/2017
Number of Days to Update: 45	Next Scheduled EDR Contact: 09/18/2017
	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: 02/18/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/18/2014	Telephone: 202-564-6023
Date Made Active in Reports: 04/24/2014	Last EDR Contact: 07/26/2017
Number of Days to Update: 37	Next Scheduled EDR Contact: 11/08/2017
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 06/05/2017	Source: DTSC and SWRCB
Date Data Arrived at EDR: 06/06/2017	Telephone: 916-323-3400
Date Made Active in Reports: 08/10/2017	Last EDR Contact: 06/06/2017
Number of Days to Update: 65	Next Scheduled EDR Contact: 09/18/2017
	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: 12/28/2016	Source: U.S. Department of Transportation
Date Data Arrived at EDR: 12/28/2016	Telephone: 202-366-4555
Date Made Active in Reports: 02/03/2017	Last EDR Contact: 06/28/2017
Number of Days to Update: 37	Next Scheduled EDR Contact: 10/09/2017
	Data Release Frequency: Annually

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: 12/06/2016	Source: Office of Emergency Services
Date Data Arrived at EDR: 01/25/2017	Telephone: 916-845-8400
Date Made Active in Reports: 05/10/2017	Last EDR Contact: 07/26/2017
Number of Days to Update: 105	Next Scheduled EDR Contact: 11/08/2017
	Data Release Frequency: Varies

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: 06/12/2017	Source: State Water Quality Control Board
Date Data Arrived at EDR: 06/14/2017	Telephone: 866-480-1028
Date Made Active in Reports: 08/18/2017	Last EDR Contact: 06/14/2017
Number of Days to Update: 65	Next Scheduled EDR Contact: 09/25/2017
	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: 03/13/2017	Source: State Water Resources Control Board
Date Data Arrived at EDR: 03/14/2017	Telephone: 866-480-1028
Date Made Active in Reports: 05/02/2017	Last EDR Contact: 06/14/2017
Number of Days to Update: 49	Next Scheduled EDR Contact: 09/25/2017
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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	Source: FirstSearch
Date Data Arrived at EDR: 01/03/2013	Telephone: N/A
Date Made Active in Reports: 02/22/2013	Last EDR Contact: 01/03/2013
Number of Days to Update: 50	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: 12/12/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 12/28/2016	Telephone: (415) 495-8895
Date Made Active in Reports: 02/10/2017	Last EDR Contact: 08/11/2017
Number of Days to Update: 44	Next Scheduled EDR Contact: 10/09/2017
	Data Release Frequency: Varies

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	Source: U.S. Army Corps of Engineers
Date Data Arrived at EDR: 07/08/2015	Telephone: 202-528-4285
Date Made Active in Reports: 10/13/2015	Last EDR Contact: 02/24/2017
Number of Days to Update: 97	Next Scheduled EDR Contact: 06/05/2017
	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	Source: USGS
Date Data Arrived at EDR: 11/10/2006	Telephone: 888-275-8747
Date Made Active in Reports: 01/11/2007	Last EDR Contact: 07/12/2017
Number of Days to Update: 62	Next Scheduled EDR Contact: 10/23/2017
	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	Source: U.S. Geological Survey
Date Data Arrived at EDR: 02/06/2006	Telephone: 888-275-8747
Date Made Active in Reports: 01/11/2007	Last EDR Contact: 07/14/2017
Number of Days to Update: 339	Next Scheduled EDR Contact: 10/23/2017
	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.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 08/18/2017
Next Scheduled EDR Contact: 11/27/2017
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: 02/13/2017
Date Data Arrived at EDR: 02/15/2017
Date Made Active in Reports: 05/12/2017
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 08/11/2017
Next Scheduled EDR Contact: 10/09/2017
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: 08/07/2017
Next Scheduled EDR Contact: 11/20/2017
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: 04/22/2013
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 08/03/2017
Next Scheduled EDR Contact: 11/20/2017
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: 12/31/2012
Date Data Arrived at EDR: 01/15/2015
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 14

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 06/21/2017
Next Scheduled EDR Contact: 10/02/2017
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.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 11/24/2015
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 133

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 05/26/2017
Next Scheduled EDR Contact: 09/04/2017
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: 07/28/2017
Next Scheduled EDR Contact: 11/08/2017
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: 11/25/2013
Date Data Arrived at EDR: 12/12/2013
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 74

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 06/09/2017
Next Scheduled EDR Contact: 09/18/2017
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: 02/01/2017
Date Data Arrived at EDR: 02/09/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 57

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 07/24/2017
Next Scheduled EDR Contact: 11/08/2017
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

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013	Source: EPA
Date Data Arrived at EDR: 10/17/2014	Telephone: 202-564-6023
Date Made Active in Reports: 10/20/2014	Last EDR Contact: 08/08/2017
Number of Days to Update: 3	Next Scheduled EDR Contact: 11/20/2017
	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: 01/20/2016	Source: EPA
Date Data Arrived at EDR: 04/28/2016	Telephone: 202-566-0500
Date Made Active in Reports: 09/02/2016	Last EDR Contact: 04/10/2017
Number of Days to Update: 127	Next Scheduled EDR Contact: 07/24/2017
	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	Source: Environmental Protection Agency
Date Data Arrived at EDR: 11/23/2016	Telephone: 202-564-2501
Date Made Active in Reports: 02/10/2017	Last EDR Contact: 07/28/2017
Number of Days to Update: 79	Next Scheduled EDR Contact: 10/23/2017
	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	Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Date Data Arrived at EDR: 04/16/2009	Telephone: 202-566-1667
Date Made Active in Reports: 05/11/2009	Last EDR Contact: 08/18/2017
Number of Days to Update: 25	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	Source: EPA
Date Data Arrived at EDR: 04/16/2009	Telephone: 202-566-1667
Date Made Active in Reports: 05/11/2009	Last EDR Contact: 08/18/2017
Number of Days to Update: 25	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	Source: Nuclear Regulatory Commission
Date Data Arrived at EDR: 09/08/2016	Telephone: 301-415-7169
Date Made Active in Reports: 10/21/2016	Last EDR Contact: 08/01/2017
Number of Days to Update: 43	Next Scheduled EDR Contact: 11/20/2017
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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	Source: Department of Energy
Date Data Arrived at EDR: 08/07/2009	Telephone: 202-586-8719
Date Made Active in Reports: 10/22/2009	Last EDR Contact: 06/05/2017
Number of Days to Update: 76	Next Scheduled EDR Contact: 09/18/2017
	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	Source: Environmental Protection Agency
Date Data Arrived at EDR: 09/10/2014	Telephone: N/A
Date Made Active in Reports: 10/20/2014	Last EDR Contact: 06/05/2017
Number of Days to Update: 40	Next Scheduled EDR Contact: 09/18/2017
	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: 02/01/2011	Source: Environmental Protection Agency
Date Data Arrived at EDR: 10/19/2011	Telephone: 202-566-0517
Date Made Active in Reports: 01/10/2012	Last EDR Contact: 07/28/2017
Number of Days to Update: 83	Next Scheduled EDR Contact: 11/08/2017
	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: 01/04/2017	Source: Environmental Protection Agency
Date Data Arrived at EDR: 01/06/2017	Telephone: 202-343-9775
Date Made Active in Reports: 02/10/2017	Last EDR Contact: 07/12/2017
Number of Days to Update: 35	Next Scheduled EDR Contact: 10/16/2017
	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	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/01/2007	Telephone: 202-564-2501
Date Made Active in Reports: 04/10/2007	Last EDR Contact: 12/17/2007
Number of Days to Update: 40	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.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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 Transportation, 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 Transportation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 08/01/2017
Next Scheduled EDR Contact: 11/13/2017
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: 09/30/2016
Date Data Arrived at EDR: 11/18/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 77

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 06/21/2017
Next Scheduled EDR Contact: 10/09/2017
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: 12/31/2013
Date Data Arrived at EDR: 02/24/2015
Date Made Active in Reports: 09/30/2015
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 05/26/2017
Next Scheduled EDR Contact: 09/04/2017
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: 07/11/2017
Next Scheduled EDR Contact: 10/23/2017
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: 12/23/2016
Date Data Arrived at EDR: 12/27/2016
Date Made Active in Reports: 02/17/2017
Number of Days to Update: 52

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 08/03/2017
Next Scheduled EDR Contact: 11/20/2017
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.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 09/14/2010
Date Data Arrived at EDR: 10/07/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 146

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 05/22/2017
Next Scheduled EDR Contact: 09/04/2017
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 12/05/2016
Date Data Arrived at EDR: 01/05/2017
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 36

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 07/07/2017
Next Scheduled EDR Contact: 10/16/2017
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 1931 and 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: 08/11/2017
Next Scheduled EDR Contact: 10/09/2017
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: 08/11/2017
Next Scheduled EDR Contact: 10/09/2017
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: 02/08/2017
Date Data Arrived at EDR: 02/28/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 38

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 05/31/2017
Next Scheduled EDR Contact: 09/11/2017
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.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 05/31/2017
Next Scheduled EDR Contact: 09/11/2017
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: 06/02/2017
Next Scheduled EDR Contact: 09/11/2017
Data Release Frequency: Varies

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: 03/14/2017
Date Data Arrived at EDR: 03/17/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 21

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 06/09/2017
Next Scheduled EDR Contact: 09/25/2017
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: 04/04/2017
Date Data Arrived at EDR: 04/07/2017
Date Made Active in Reports: 05/12/2017
Number of Days to Update: 35

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 06/07/2017
Next Scheduled EDR Contact: 09/18/2017
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: 06/02/2016
Date Data Arrived at EDR: 06/03/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 91

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 05/24/2017
Next Scheduled EDR Contact: 09/11/2017
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: 03/19/2017
Date Data Arrived at EDR: 03/21/2017
Date Made Active in Reports: 05/12/2017
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 06/07/2017
Next Scheduled EDR Contact: 09/18/2017
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 10/25/2015	Source: Department of Defense
Date Data Arrived at EDR: 01/29/2016	Telephone: 571-373-0407
Date Made Active in Reports: 04/05/2016	Last EDR Contact: 07/17/2017
Number of Days to Update: 67	Next Scheduled EDR Contact: 10/30/2017
	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: 02/22/2017	Source: EPA
Date Data Arrived at EDR: 02/22/2017	Telephone: 800-385-6164
Date Made Active in Reports: 05/12/2017	Last EDR Contact: 08/17/2017
Number of Days to Update: 79	Next Scheduled EDR Contact: 12/04/2017
	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	Source: Department of Health Services
Date Data Arrived at EDR: 07/27/1994	Telephone: 916-255-2118
Date Made Active in Reports: 08/02/1994	Last EDR Contact: 05/31/1994
Number of Days to Update: 6	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: 12/28/2016	Source: CAL EPA/Office of Emergency Information
Date Data Arrived at EDR: 12/28/2016	Telephone: 916-323-3400
Date Made Active in Reports: 03/02/2017	Last EDR Contact: 06/28/2017
Number of Days to Update: 64	Next Scheduled EDR Contact: 10/09/2017
	Data Release Frequency: Quarterly

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: 03/09/2017	Source: Department of Toxic Substance Control
Date Data Arrived at EDR: 04/11/2017	Telephone: 916-327-4498
Date Made Active in Reports: 05/23/2017	Last EDR Contact: 07/13/2017
Number of Days to Update: 42	Next Scheduled EDR Contact: 09/18/2017
	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: 12/31/2015	Source: California Air Resources Board
Date Data Arrived at EDR: 03/21/2017	Telephone: 916-322-2990
Date Made Active in Reports: 08/15/2017	Last EDR Contact: 06/23/2017
Number of Days to Update: 147	Next Scheduled EDR Contact: 10/02/2017
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 05/01/2017	Source: State Water Resources Control Board
Date Data Arrived at EDR: 05/03/2017	Telephone: 916-445-9379
Date Made Active in Reports: 08/15/2017	Last EDR Contact: 08/18/2017
Number of Days to Update: 104	Next Scheduled EDR Contact: 11/08/2017
	Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing

Financial Assurance information

Date of Government Version: 06/05/2017	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 06/09/2017	Telephone: 916-255-3628
Date Made Active in Reports: 08/15/2017	Last EDR Contact: 07/21/2017
Number of Days to Update: 67	Next Scheduled EDR Contact: 10/30/2017
	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: 05/16/2017	Source: California Integrated Waste Management Board
Date Data Arrived at EDR: 05/19/2017	Telephone: 916-341-6066
Date Made Active in Reports: 08/15/2017	Last EDR Contact: 08/10/2017
Number of Days to Update: 88	Next Scheduled EDR Contact: 11/27/2017
	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: 12/31/2015	Source: California Environmental Protection Agency
Date Data Arrived at EDR: 10/12/2016	Telephone: 916-255-1136
Date Made Active in Reports: 12/15/2016	Last EDR Contact: 07/12/2017
Number of Days to Update: 64	Next Scheduled EDR Contact: 10/23/2017
	Data Release Frequency: Annually

ICE: ICE

Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirositor.

Date of Government Version: 05/22/2017	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 05/24/2017	Telephone: 877-786-9427
Date Made Active in Reports: 08/18/2017	Last EDR Contact: 05/24/2017
Number of Days to Update: 86	Next Scheduled EDR Contact: 09/04/2017
	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	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 01/22/2009	Telephone: 916-323-3400
Date Made Active in Reports: 04/08/2009	Last EDR Contact: 01/22/2009
Number of Days to Update: 76	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

HWP: EnviroStor Permitted Facilities Listing

Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 05/22/2017	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 05/24/2017	Telephone: 916-323-3400
Date Made Active in Reports: 08/18/2017	Last EDR Contact: 05/24/2017
Number of Days to Update: 86	Next Scheduled EDR Contact: 09/04/2017
	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: 04/11/2017	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 04/13/2017	Telephone: 916-440-7145
Date Made Active in Reports: 04/26/2017	Last EDR Contact: 07/12/2017
Number of Days to Update: 13	Next Scheduled EDR Contact: 10/23/2017
	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: 09/12/2016	Source: Department of Conservation
Date Data Arrived at EDR: 09/14/2016	Telephone: 916-322-1080
Date Made Active in Reports: 10/14/2016	Last EDR Contact: 06/14/2017
Number of Days to Update: 30	Next Scheduled EDR Contact: 09/25/2017
	Data Release Frequency: Varies

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: 12/02/2016	Source: Department of Public Health
Date Data Arrived at EDR: 12/06/2016	Telephone: 916-558-1784
Date Made Active in Reports: 03/02/2017	Last EDR Contact: 06/06/2017
Number of Days to Update: 86	Next Scheduled EDR Contact: 09/18/2017
	Data Release Frequency: Varies

NPDES: NPDES Permits Listing

A listing of NPDES permits, including stormwater.

Date of Government Version: 11/14/2016	Source: State Water Resources Control Board
Date Data Arrived at EDR: 11/15/2016	Telephone: 916-445-9379
Date Made Active in Reports: 03/02/2017	Last EDR Contact: 08/17/2017
Number of Days to Update: 107	Next Scheduled EDR Contact: 11/27/2017
	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: 12/06/2016	Source: Department of Pesticide Regulation
Date Data Arrived at EDR: 12/06/2016	Telephone: 916-445-4038
Date Made Active in Reports: 03/03/2017	Last EDR Contact: 06/07/2017
Number of Days to Update: 87	Next Scheduled EDR Contact: 09/18/2017
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

PROC: Certified Processors Database

A listing of certified processors.

Date of Government Version: 03/13/2017
Date Data Arrived at EDR: 03/14/2017
Date Made Active in Reports: 05/03/2017
Number of Days to Update: 50

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 06/14/2017
Next Scheduled EDR Contact: 09/25/2017
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: 12/16/2016
Date Data Arrived at EDR: 12/22/2016
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 70

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 06/16/2017
Next Scheduled EDR Contact: 10/02/2017
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: 01/20/2017
Date Data Arrived at EDR: 03/14/2017
Date Made Active in Reports: 05/03/2017
Number of Days to Update: 50

Source: Department of Conservation
Telephone: 916-445-2408
Last EDR Contact: 06/14/2017
Next Scheduled EDR Contact: 09/25/2017
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 board's review found that more than one-third of the region's active disposal pits are operating without permission.

Date of Government Version: 04/15/2015
Date Data Arrived at EDR: 04/17/2015
Date Made Active in Reports: 06/23/2015
Number of Days to Update: 67

Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 07/14/2017
Next Scheduled EDR Contact: 10/23/2017
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: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
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: 06/27/2017
Next Scheduled EDR Contact: 10/09/2017
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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 Historic Gas 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 Historic Dry 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.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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:

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: 04/10/2017
Date Data Arrived at EDR: 04/11/2017
Date Made Active in Reports: 05/12/2017
Number of Days to Update: 31

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 07/07/2017
Next Scheduled EDR Contact: 10/23/2017
Data Release Frequency: Semi-Annually

Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 04/10/2017
Date Data Arrived at EDR: 04/11/2017
Date Made Active in Reports: 05/02/2017
Number of Days to Update: 21

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 07/07/2017
Next Scheduled EDR Contact: 04/24/2047
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA Facility List

Cupa Facility List

Date of Government Version: 06/20/2017
Date Data Arrived at EDR: 06/21/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 49

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 06/16/2017
Next Scheduled EDR Contact: 09/18/2017
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA Facility Listing

Cupa facility list.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 08/21/2017
Next Scheduled EDR Contact: 10/23/2017
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA Facility Listing Cupa Facility Listing

Date of Government Version: 04/25/2017
Date Data Arrived at EDR: 04/27/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 104

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 06/27/2017
Next Scheduled EDR Contact: 10/09/2017
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA Facility List Cupa facility list.

Date of Government Version: 02/23/2017
Date Data Arrived at EDR: 02/24/2017
Date Made Active in Reports: 05/12/2017
Number of Days to Update: 77

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 08/03/2017
Next Scheduled EDR Contact: 11/20/2017
Data Release Frequency: Varies

CONTRA COSTA COUNTY:

Site List

List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 05/26/2017
Date Data Arrived at EDR: 05/30/2017
Date Made Active in Reports: 07/27/2017
Number of Days to Update: 58

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 07/31/2017
Next Scheduled EDR Contact: 11/13/2017
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA Facility List Cupa Facility list

Date of Government Version: 05/02/2017
Date Data Arrived at EDR: 05/04/2017
Date Made Active in Reports: 08/04/2017
Number of Days to Update: 92

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 07/27/2017
Next Scheduled EDR Contact: 11/13/2017
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA Facility List CUPA facility list.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 06/19/2017
Date Data Arrived at EDR: 06/20/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 50

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 07/31/2017
Next Scheduled EDR Contact: 11/13/2017
Data Release Frequency: Varies

FRESNO COUNTY:

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: 06/30/2017
Date Data Arrived at EDR: 07/05/2017
Date Made Active in Reports: 08/04/2017
Number of Days to Update: 30

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 06/29/2017
Next Scheduled EDR Contact: 10/16/2017
Data Release Frequency: Semi-Annually

GLENN COUNTY:

CUPA Facility List

Cupa facility list

Date of Government Version: 12/02/2016
Date Data Arrived at EDR: 02/03/2017
Date Made Active in Reports: 05/25/2017
Number of Days to Update: 111

Source: Glenn County Air Pollution Control District
Telephone: 830-934-6500
Last EDR Contact: 07/21/2017
Next Scheduled EDR Contact: 11/08/2017
Data Release Frequency: Varies

HUMBOLDT COUNTY:

CUPA Facility List

CUPA facility list.

Date of Government Version: 03/20/2017
Date Data Arrived at EDR: 03/21/2017
Date Made Active in Reports: 05/17/2017
Number of Days to Update: 57

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 08/03/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Varies

IMPERIAL COUNTY:

CUPA Facility List

Cupa facility list.

Date of Government Version: 04/24/2017
Date Data Arrived at EDR: 04/25/2017
Date Made Active in Reports: 08/04/2017
Number of Days to Update: 101

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 07/21/2017
Next Scheduled EDR Contact: 11/08/2017
Data Release Frequency: Varies

INYO COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA Facility List

Cupa facility list.

Date of Government Version: 06/08/2017
Date Data Arrived at EDR: 06/09/2017
Date Made Active in Reports: 08/04/2017
Number of Days to Update: 56

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Varies

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing Kern County Sites and Tanks Listing.

Date of Government Version: 02/07/2017
Date Data Arrived at EDR: 02/10/2017
Date Made Active in Reports: 05/02/2017
Number of Days to Update: 81

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 08/03/2017
Next Scheduled EDR Contact: 11/20/2017
Data Release Frequency: Quarterly

KINGS COUNTY:

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: 03/06/2017
Date Data Arrived at EDR: 03/07/2017
Date Made Active in Reports: 05/17/2017
Number of Days to Update: 71

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 08/03/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Varies

LAKE COUNTY:

CUPA Facility List

Cupa facility list

Date of Government Version: 05/09/2017
Date Data Arrived at EDR: 05/11/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 90

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 07/17/2017
Next Scheduled EDR Contact: 10/30/2017
Data Release Frequency: Varies

LASSEN COUNTY:

CUPA Facility List

Cupa facility list

Date of Government Version: 01/13/2017
Date Data Arrived at EDR: 04/25/2017
Date Made Active in Reports: 08/04/2017
Number of Days to Update: 101

Source: Lassen County Environmental Health
Telephone: 530-251-8528
Last EDR Contact: 07/21/2017
Next Scheduled EDR Contact: 11/08/2017
Data Release Frequency: Varies

LOS ANGELES COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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	Source: EPA Region 9
Date Data Arrived at EDR: 03/31/2009	Telephone: 415-972-3178
Date Made Active in Reports: 10/23/2009	Last EDR Contact: 06/16/2017
Number of Days to Update: 206	Next Scheduled EDR Contact: 10/02/2017
	Data Release Frequency: No Update Planned

HMS: Street Number List

Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 04/18/2017	Source: Department of Public Works
Date Data Arrived at EDR: 04/25/2017	Telephone: 626-458-3517
Date Made Active in Reports: 08/18/2017	Last EDR Contact: 07/07/2017
Number of Days to Update: 115	Next Scheduled EDR Contact: 10/23/2017
	Data Release Frequency: Semi-Annually

List of Solid Waste Facilities

Solid Waste Facilities in Los Angeles County.

Date of Government Version: 04/17/2017	Source: La County Department of Public Works
Date Data Arrived at EDR: 04/18/2017	Telephone: 818-458-5185
Date Made Active in Reports: 05/02/2017	Last EDR Contact: 07/18/2017
Number of Days to Update: 14	Next Scheduled EDR Contact: 10/30/2017
	Data Release Frequency: Varies

City of Los Angeles Landfills

Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2016	Source: Engineering & Construction Division
Date Data Arrived at EDR: 01/26/2016	Telephone: 213-473-7869
Date Made Active in Reports: 03/22/2016	Last EDR Contact: 07/13/2017
Number of Days to Update: 56	Next Scheduled EDR Contact: 10/30/2017
	Data Release Frequency: Varies

Site Mitigation List

Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 03/29/2016	Source: Community Health Services
Date Data Arrived at EDR: 04/06/2016	Telephone: 323-890-7806
Date Made Active in Reports: 06/13/2016	Last EDR Contact: 07/17/2017
Number of Days to Update: 68	Next Scheduled EDR Contact: 10/30/2017
	Data Release Frequency: Annually

City of El Segundo Underground Storage Tank

Underground storage tank sites located in El Segundo city.

Date of Government Version: 01/17/2017	Source: City of El Segundo Fire Department
Date Data Arrived at EDR: 01/18/2017	Telephone: 310-524-2236
Date Made Active in Reports: 05/10/2017	Last EDR Contact: 07/13/2017
Number of Days to Update: 112	Next Scheduled EDR Contact: 10/30/2017
	Data Release Frequency: Semi-Annually

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	Source: City of Long Beach Fire Department
Date Data Arrived at EDR: 03/10/2017	Telephone: 562-570-2563
Date Made Active in Reports: 05/03/2017	Last EDR Contact: 07/21/2017
Number of Days to Update: 54	Next Scheduled EDR Contact: 11/08/2017
	Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

City of Torrance Underground Storage Tank

Underground storage tank sites located in the city of Torrance.

Date of Government Version: 01/10/2017
Date Data Arrived at EDR: 01/13/2017
Date Made Active in Reports: 05/03/2017
Number of Days to Update: 110

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 07/07/2017
Next Scheduled EDR Contact: 10/23/2017
Data Release Frequency: Semi-Annually

MADERA COUNTY:

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: 06/01/2017
Date Data Arrived at EDR: 06/02/2017
Date Made Active in Reports: 08/04/2017
Number of Days to Update: 63

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 08/21/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Varies

MARIN COUNTY:

Underground Storage Tank Sites

Currently permitted USTs in Marin County.

Date of Government Version: 03/31/2017
Date Data Arrived at EDR: 04/06/2017
Date Made Active in Reports: 05/03/2017
Number of Days to Update: 27

Source: Public Works Department Waste Management
Telephone: 415-473-6647
Last EDR Contact: 06/29/2017
Next Scheduled EDR Contact: 10/16/2017
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA Facility List

CUPA facility list.

Date of Government Version: 02/22/2017
Date Data Arrived at EDR: 02/23/2017
Date Made Active in Reports: 05/17/2017
Number of Days to Update: 83

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Varies

MONO COUNTY:

CUPA Facility List

CUPA Facility List

Date of Government Version: 02/21/2017
Date Data Arrived at EDR: 03/02/2017
Date Made Active in Reports: 05/17/2017
Number of Days to Update: 76

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 08/08/2017
Next Scheduled EDR Contact: 09/11/2017
Data Release Frequency: Varies

MONTEREY COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA Facility Listing

CUPA Program listing from the Environmental Health Division.

Date of Government Version: 06/22/2017	Source: Monterey County Health Department
Date Data Arrived at EDR: 06/23/2017	Telephone: 831-796-1297
Date Made Active in Reports: 08/09/2017	Last EDR Contact: 08/21/2017
Number of Days to Update: 47	Next Scheduled EDR Contact: 12/04/2017
	Data Release Frequency: Varies

NAPA COUNTY:

Sites With Reported Contamination

A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 01/09/2017	Source: Napa County Department of Environmental Management
Date Data Arrived at EDR: 01/11/2017	Telephone: 707-253-4269
Date Made Active in Reports: 03/02/2017	Last EDR Contact: 05/24/2017
Number of Days to Update: 50	Next Scheduled EDR Contact: 09/11/2017
	Data Release Frequency: No Update Planned

Closed and Operating Underground Storage Tank Sites

Underground storage tank sites located in Napa county.

Date of Government Version: 03/15/2017	Source: Napa County Department of Environmental Management
Date Data Arrived at EDR: 03/16/2017	Telephone: 707-253-4269
Date Made Active in Reports: 05/09/2017	Last EDR Contact: 05/24/2017
Number of Days to Update: 54	Next Scheduled EDR Contact: 09/11/2017
	Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA Facility List

CUPA facility list.

Date of Government Version: 05/08/2017	Source: Community Development Agency
Date Data Arrived at EDR: 05/09/2017	Telephone: 530-265-1467
Date Made Active in Reports: 08/09/2017	Last EDR Contact: 07/27/2017
Number of Days to Update: 92	Next Scheduled EDR Contact: 11/13/2017
	Data Release Frequency: Varies

ORANGE COUNTY:

List of Industrial Site Cleanups

Petroleum and non-petroleum spills.

Date of Government Version: 05/03/2017	Source: Health Care Agency
Date Data Arrived at EDR: 05/11/2017	Telephone: 714-834-3446
Date Made Active in Reports: 08/18/2017	Last EDR Contact: 08/07/2017
Number of Days to Update: 99	Next Scheduled EDR Contact: 11/20/2017
	Data Release Frequency: Annually

List of Underground Storage Tank Cleanups

Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 11/04/2016	Source: Health Care Agency
Date Data Arrived at EDR: 11/11/2016	Telephone: 714-834-3446
Date Made Active in Reports: 01/23/2017	Last EDR Contact: 08/07/2017
Number of Days to Update: 73	Next Scheduled EDR Contact: 11/20/2017
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

List of Underground Storage Tank Facilities

Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 02/06/2017
Date Data Arrived at EDR: 02/07/2017
Date Made Active in Reports: 05/03/2017
Number of Days to Update: 85

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/09/2017
Next Scheduled EDR Contact: 11/20/2017
Data Release Frequency: Quarterly

PLACER COUNTY:

Master List of Facilities

List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 09/02/2016
Date Data Arrived at EDR: 09/06/2016
Date Made Active in Reports: 10/14/2016
Number of Days to Update: 38

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 06/02/2017
Next Scheduled EDR Contact: 09/18/2017
Data Release Frequency: Semi-Annually

PLUMAS COUNTY:

CUPA Facility List

Plumas County CUPA Program facilities.

Date of Government Version: 06/19/2017
Date Data Arrived at EDR: 07/05/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 35

Source: Plumas County Environmental Health
Telephone: 530-283-6355
Last EDR Contact: 07/21/2017
Next Scheduled EDR Contact: 11/08/2017
Data Release Frequency: Varies

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites

Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 04/18/2017
Date Data Arrived at EDR: 04/20/2017
Date Made Active in Reports: 04/21/2017
Number of Days to Update: 1

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 06/19/2017
Next Scheduled EDR Contact: 10/02/2017
Data Release Frequency: Quarterly

Underground Storage Tank Tank List

Underground storage tank sites located in Riverside county.

Date of Government Version: 01/19/2017
Date Data Arrived at EDR: 01/25/2017
Date Made Active in Reports: 05/03/2017
Number of Days to Update: 98

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 06/19/2017
Next Scheduled EDR Contact: 10/02/2017
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

Toxic Site Clean-Up List

List of sites where unauthorized releases of potentially hazardous materials have occurred.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 02/06/2017
Date Data Arrived at EDR: 04/04/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 127

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 07/06/2017
Next Scheduled EDR Contact: 10/16/2017
Data Release Frequency: Quarterly

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: 11/08/2016
Date Data Arrived at EDR: 01/05/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 56

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 07/06/2017
Next Scheduled EDR Contact: 10/16/2017
Data Release Frequency: Quarterly

SAN BENITO COUNTY:

CUPA Facility List

Cupa facility list

Date of Government Version: 11/30/2016
Date Data Arrived at EDR: 02/09/2017
Date Made Active in Reports: 05/25/2017
Number of Days to Update: 105

Source: San Benito County Environmental Health
Telephone: N/A
Last EDR Contact: 08/03/2017
Next Scheduled EDR Contact: 11/20/2017
Data Release Frequency: Varies

SAN BERNARDINO COUNTY:

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: 12/09/2016
Date Data Arrived at EDR: 12/13/2016
Date Made Active in Reports: 03/03/2017
Number of Days to Update: 80

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 08/07/2017
Next Scheduled EDR Contact: 11/20/2017
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

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: 06/05/2017
Date Data Arrived at EDR: 06/07/2017
Date Made Active in Reports: 08/15/2017
Number of Days to Update: 69

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 06/07/2017
Next Scheduled EDR Contact: 09/18/2017
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 10/31/2015
Date Data Arrived at EDR: 11/07/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 58

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 07/21/2017
Next Scheduled EDR Contact: 11/08/2017
Data Release Frequency: Varies

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: 06/05/2017
Next Scheduled EDR Contact: 09/18/2017
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

Local Oversight 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: 08/07/2017
Next Scheduled EDR Contact: 11/20/2017
Data Release Frequency: Quarterly

Underground Storage Tank Information

Underground storage tank sites located in San Francisco county.

Date of Government Version: 02/28/2017
Date Data Arrived at EDR: 03/02/2017
Date Made Active in Reports: 05/03/2017
Number of Days to Update: 62

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 08/21/2017
Next Scheduled EDR Contact: 11/20/2017
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

San Joaquin Co. UST

A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 03/21/2017
Date Data Arrived at EDR: 03/23/2017
Date Made Active in Reports: 05/09/2017
Number of Days to Update: 47

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 06/16/2017
Next Scheduled EDR Contact: 10/02/2017
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA Facility List

Cupa Facility List.

Date of Government Version: 06/05/2017
Date Data Arrived at EDR: 06/16/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 54

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Varies

SAN MATEO COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Business Inventory

List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 03/15/2017	Source: San Mateo County Environmental Health Services Division
Date Data Arrived at EDR: 04/07/2017	Telephone: 650-363-1921
Date Made Active in Reports: 05/10/2017	Last EDR Contact: 06/09/2017
Number of Days to Update: 33	Next Scheduled EDR Contact: 09/25/2017
	Data Release Frequency: Annually

Fuel Leak List

A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 03/15/2017	Source: San Mateo County Environmental Health Services Division
Date Data Arrived at EDR: 04/07/2017	Telephone: 650-363-1921
Date Made Active in Reports: 04/21/2017	Last EDR Contact: 06/09/2017
Number of Days to Update: 14	Next Scheduled EDR Contact: 09/25/2017
	Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA Facility Listing

CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011	Source: Santa Barbara County Public Health Department
Date Data Arrived at EDR: 09/09/2011	Telephone: 805-686-8167
Date Made Active in Reports: 10/07/2011	Last EDR Contact: 08/18/2017
Number of Days to Update: 28	Next Scheduled EDR Contact: 12/04/2017
	Data Release Frequency: Varies

SANTA CLARA COUNTY:

Cupa Facility List

Cupa facility list

Date of Government Version: 02/22/2017	Source: Department of Environmental Health
Date Data Arrived at EDR: 02/23/2017	Telephone: 408-918-1973
Date Made Active in Reports: 05/23/2017	Last EDR Contact: 08/07/2017
Number of Days to Update: 89	Next Scheduled EDR Contact: 12/04/2017
	Data Release Frequency: Varies

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	Source: Santa Clara Valley Water District
Date Data Arrived at EDR: 03/30/2005	Telephone: 408-265-2600
Date Made Active in Reports: 04/21/2005	Last EDR Contact: 03/23/2009
Number of Days to Update: 22	Next Scheduled EDR Contact: 06/22/2009
	Data Release Frequency: No Update Planned

LOP Listing

A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014	Source: Department of Environmental Health
Date Data Arrived at EDR: 03/05/2014	Telephone: 408-918-3417
Date Made Active in Reports: 03/18/2014	Last EDR Contact: 05/24/2017
Number of Days to Update: 13	Next Scheduled EDR Contact: 09/11/2017
	Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Hazardous Material Facilities

Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 05/04/2017	Source: City of San Jose Fire Department
Date Data Arrived at EDR: 05/08/2017	Telephone: 408-535-7694
Date Made Active in Reports: 07/27/2017	Last EDR Contact: 08/03/2017
Number of Days to Update: 80	Next Scheduled EDR Contact: 11/20/2017
	Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA Facility List

CUPA facility listing.

Date of Government Version: 01/21/2017	Source: Santa Cruz County Environmental Health
Date Data Arrived at EDR: 02/22/2017	Telephone: 831-464-2761
Date Made Active in Reports: 05/23/2017	Last EDR Contact: 08/18/2017
Number of Days to Update: 90	Next Scheduled EDR Contact: 12/04/2017
	Data Release Frequency: Varies

SHASTA COUNTY:

CUPA Facility List

Cupa Facility List.

Date of Government Version: 06/15/2017	Source: Shasta County Department of Resource Management
Date Data Arrived at EDR: 06/19/2017	Telephone: 530-225-5789
Date Made Active in Reports: 08/09/2017	Last EDR Contact: 08/21/2017
Number of Days to Update: 51	Next Scheduled EDR Contact: 12/04/2017
	Data Release Frequency: Varies

SOLANO COUNTY:

Leaking Underground Storage Tanks

A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 11/29/2016	Source: Solano County Department of Environmental Management
Date Data Arrived at EDR: 12/21/2016	Telephone: 707-784-6770
Date Made Active in Reports: 12/22/2016	Last EDR Contact: 06/09/2017
Number of Days to Update: 1	Next Scheduled EDR Contact: 09/25/2017
	Data Release Frequency: Quarterly

Underground Storage Tanks

Underground storage tank sites located in Solano county.

Date of Government Version: 03/15/2017	Source: Solano County Department of Environmental Management
Date Data Arrived at EDR: 03/17/2017	Telephone: 707-784-6770
Date Made Active in Reports: 05/03/2017	Last EDR Contact: 06/09/2017
Number of Days to Update: 47	Next Scheduled EDR Contact: 09/25/2017
	Data Release Frequency: Quarterly

SONOMA COUNTY:

Cupa Facility List

Cupa Facility list

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 06/23/2017
Date Data Arrived at EDR: 06/27/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 43

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 06/21/2017
Next Scheduled EDR Contact: 10/09/2017
Data Release Frequency: Varies

Leaking Underground Storage Tank Sites

A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 01/04/2017
Date Data Arrived at EDR: 01/06/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 55

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 06/21/2017
Next Scheduled EDR Contact: 10/09/2017
Data Release Frequency: Quarterly

STANISLAUS COUNTY:

CUPA Facility List

Cupa facility list

Date of Government Version: 05/10/2017
Date Data Arrived at EDR: 05/16/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 85

Source: Stanislaus County Department of Environmental Protection
Telephone: 209-525-6751
Last EDR Contact: 07/17/2017
Next Scheduled EDR Contact: 10/30/2017
Data Release Frequency: Varies

SUTTER COUNTY:

Underground Storage Tanks

Underground storage tank sites located in Sutter county.

Date of Government Version: 12/02/2016
Date Data Arrived at EDR: 12/06/2016
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 35

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 06/02/2017
Next Scheduled EDR Contact: 09/18/2017
Data Release Frequency: Semi-Annually

TEHAMA COUNTY:

CUPA Facility List

Cupa facilities

Date of Government Version: 05/01/2017
Date Data Arrived at EDR: 05/08/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 93

Source: Tehama County Department of Environmental Health
Telephone: 530-527-8020
Last EDR Contact: 08/03/2017
Next Scheduled EDR Contact: 11/20/2017
Data Release Frequency: Varies

TRINITY COUNTY:

CUPA Facility List

Cupa facility list

Date of Government Version: 04/24/2017
Date Data Arrived at EDR: 04/25/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 106

Source: Department of Toxic Substances Control
Telephone: 760-352-0381
Last EDR Contact: 07/21/2017
Next Scheduled EDR Contact: 11/08/2017
Data Release Frequency: Varies

TULARE COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA Facility List

Cupa program facilities

Date of Government Version: 01/05/2017
Date Data Arrived at EDR: 02/10/2017
Date Made Active in Reports: 05/25/2017
Number of Days to Update: 104

Source: Tulare County Environmental Health Services Division
Telephone: 559-624-7400
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 11/20/2017
Data Release Frequency: Varies

TUOLUMNE COUNTY:

CUPA Facility List

Cupa facility list

Date of Government Version: 04/27/2017
Date Data Arrived at EDR: 04/27/2017
Date Made Active in Reports: 08/10/2017
Number of Days to Update: 105

Source: Division of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 11/08/2017
Data Release Frequency: Varies

VENTURA COUNTY:

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: 12/27/2016
Date Data Arrived at EDR: 01/27/2017
Date Made Active in Reports: 05/10/2017
Number of Days to Update: 103

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 07/24/2017
Next Scheduled EDR Contact: 11/08/2017
Data Release Frequency: Quarterly

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: 06/29/2017
Next Scheduled EDR Contact: 10/16/2017
Data Release Frequency: Annually

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: 08/10/2017
Next Scheduled EDR Contact: 11/27/2017
Data Release Frequency: Quarterly

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: 09/26/2016
Date Data Arrived at EDR: 10/27/2016
Date Made Active in Reports: 01/24/2017
Number of Days to Update: 89

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 07/24/2017
Next Scheduled EDR Contact: 11/08/2017
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Underground Tank Closed Sites List

Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 02/27/2017
Date Data Arrived at EDR: 03/15/2017
Date Made Active in Reports: 05/03/2017
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 06/14/2017
Next Scheduled EDR Contact: 09/25/2017
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report

Underground storage tank sites located in Yolo county.

Date of Government Version: 03/31/2017
Date Data Arrived at EDR: 04/06/2017
Date Made Active in Reports: 05/03/2017
Number of Days to Update: 27

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 06/29/2017
Next Scheduled EDR Contact: 10/16/2017
Data Release Frequency: Annually

YUBA COUNTY:

CUPA Facility List

CUPA facility listing for Yuba County.

Date of Government Version: 01/30/2017
Date Data Arrived at EDR: 01/31/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 112

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 07/27/2017
Next Scheduled EDR Contact: 11/13/2017
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: 07/30/2013
Date Data Arrived at EDR: 08/19/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 45

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 11/27/2017
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 04/11/2017
Date Made Active in Reports: 07/27/2017
Number of Days to Update: 107

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 07/10/2017
Next Scheduled EDR Contact: 10/23/2017
Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 01/30/2017
Date Data Arrived at EDR: 02/01/2017
Date Made Active in Reports: 02/13/2017
Number of Days to Update: 12

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 08/03/2017
Next Scheduled EDR Contact: 11/13/2017
Data Release Frequency: Annually

PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 07/22/2016
Date Made Active in Reports: 11/22/2016
Number of Days to Update: 123

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 07/17/2017
Next Scheduled EDR Contact: 10/30/2017
Data Release Frequency: Annually

RI MANIFEST: Manifest information

Hazardous waste manifest information

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 06/19/2015
Date Made Active in Reports: 07/15/2015
Number of Days to Update: 26

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 08/21/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Annually

WI MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 04/13/2017
Date Made Active in Reports: 07/14/2017
Number of Days to Update: 92

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 06/12/2017
Next Scheduled EDR Contact: 09/25/2017
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

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.

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.

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.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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 & Game

Telephone: 916-445-0411

Current USGS 7.5 Minute Topographic Map

Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

© 2015 TomTom North America, Inc. All rights reserved. This material is proprietary and the subject of copyright protection and other intellectual property rights owned by or licensed to Tele Atlas North America, Inc. The use of this material is subject to the terms of a license agreement. You will be held liable for any unauthorized copying or disclosure of this material.

GEOCHECK® - PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

CV - MORGAN HILL D
18110 MONTEREY ROAD
MORGAN HILL, CA 95037

TARGET PROPERTY COORDINATES

Latitude (North):	37.139256 - 37° 8' 21.32"
Longitude (West):	121.661084 - 121° 39' 39.90"
Universal Transverse Mercator:	Zone 10
UTM X (Meters):	618919.8
UTM Y (Meters):	4110956.2
Elevation:	357 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5640402 MORGAN HILL, CA
Version Date:	2012
South Map:	5640078 MOUNT MADONNA, 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 principal 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).

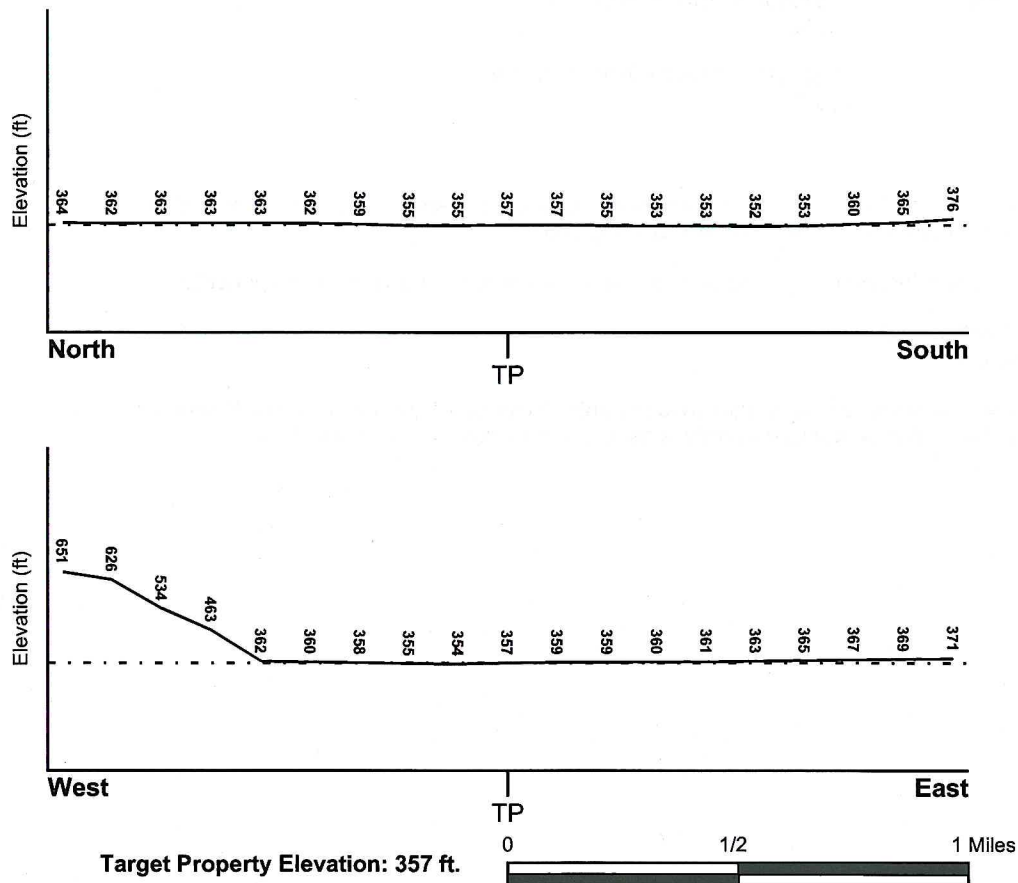
TOPOGRAPHIC INFORMATION

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 WSW

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

<u>Flood Plain Panel at Target Property</u>	<u>FEMA Source Type</u>
06085C0443H	FEMA FIRM Flood data
<u>Additional Panels in search area:</u>	<u>FEMA Source Type</u>
06085C0444H	FEMA FIRM Flood data
06085C0606H	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

<u>NWI Quad at Target Property</u>	<u>NWI Electronic Data Coverage</u>
MORGAN HILL	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.

<u>MAP ID</u>	<u>LOCATION FROM TP</u>	<u>GENERAL DIRECTION GROUNDWATER FLOW</u>
Not Reported		

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

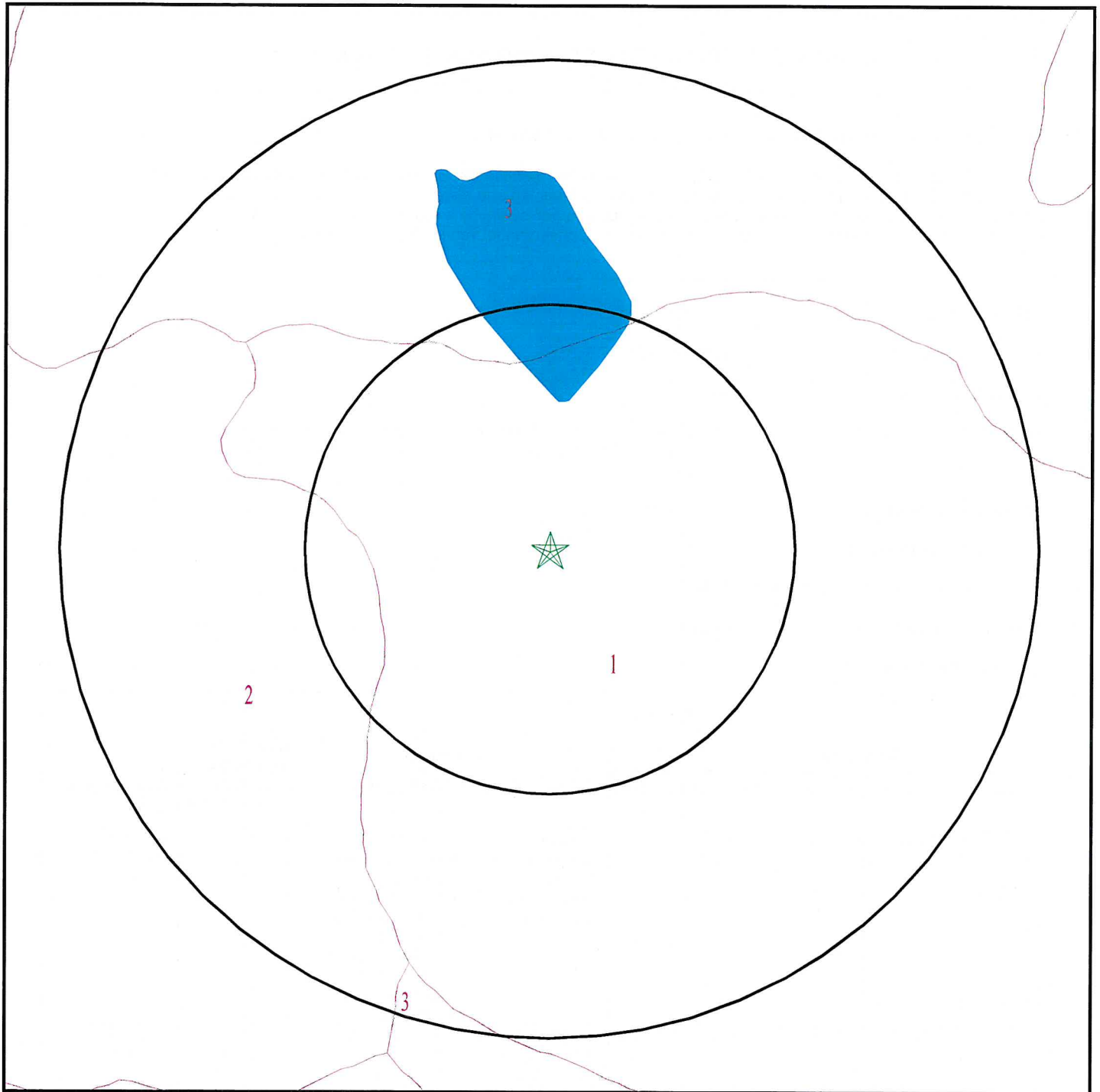
Era:	Mesozoic
System:	Cretaceous
Series:	Upper Mesozoic
Code:	uMze(decoded above as Era, System & Series)

GEOLOGIC AGE IDENTIFICATION

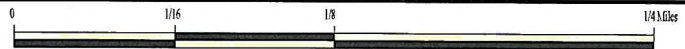
Category: Eugeosynclinal Deposits

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 - 5029315.2s



- ★ Target Property
- SSURGO Soil
- Water



SITE NAME: CV - Morgan Hill D
ADDRESS: 18110 Monterey Road
Morgan Hill CA 95037
LAT/LONG: 37.139256 / 121.661084

CLIENT: Stantec
CONTACT: Matthew Sapp
INQUIRY #: 5029315.2s
DATE: August 22, 2017 4:18 pm

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: PLEASANTON

Soil Surface Texture: loam

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: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	18 inches	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. FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4	Max: 7.3 Min: 6.1
2	18 inches	44 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: 7.3 Min: 6.1
3	44 inches	66 inches	gravelly sandy clay loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand.	Max: 4 Min: 1.4	Max: 7.3 Min: 6.1

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Map ID: 2

Soil Component Name: MAXWELL

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: Moderately 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							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	25 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 1.4 Min: 0.42	Max: 8.4 Min: 6.6
2	25 inches	46 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 1.4 Min: 0.42	Max: 8.4 Min: 6.6
3	46 inches	59 inches	gravelly 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: 8.4 Min: 7.9

Soil Map ID: 3

Soil Component Name: SAN YSIDRO

Soil Surface Texture: 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: Moderately well drained

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 183 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	20 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 14 Min: 4	Max: 6.5 Min: 5.6
2	20 inches	35 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 1.4 Min: 0.42	Max: 7.3 Min: 6.1
3	35 inches	50 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: 8.4 Min: 7.9
4	50 inches	59 inches	sandy clay loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4 Min: 1.4	Max: 8.4 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.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

WELL SEARCH DISTANCE INFORMATION

<u>DATABASE</u>	<u>SEARCH DISTANCE (miles)</u>
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

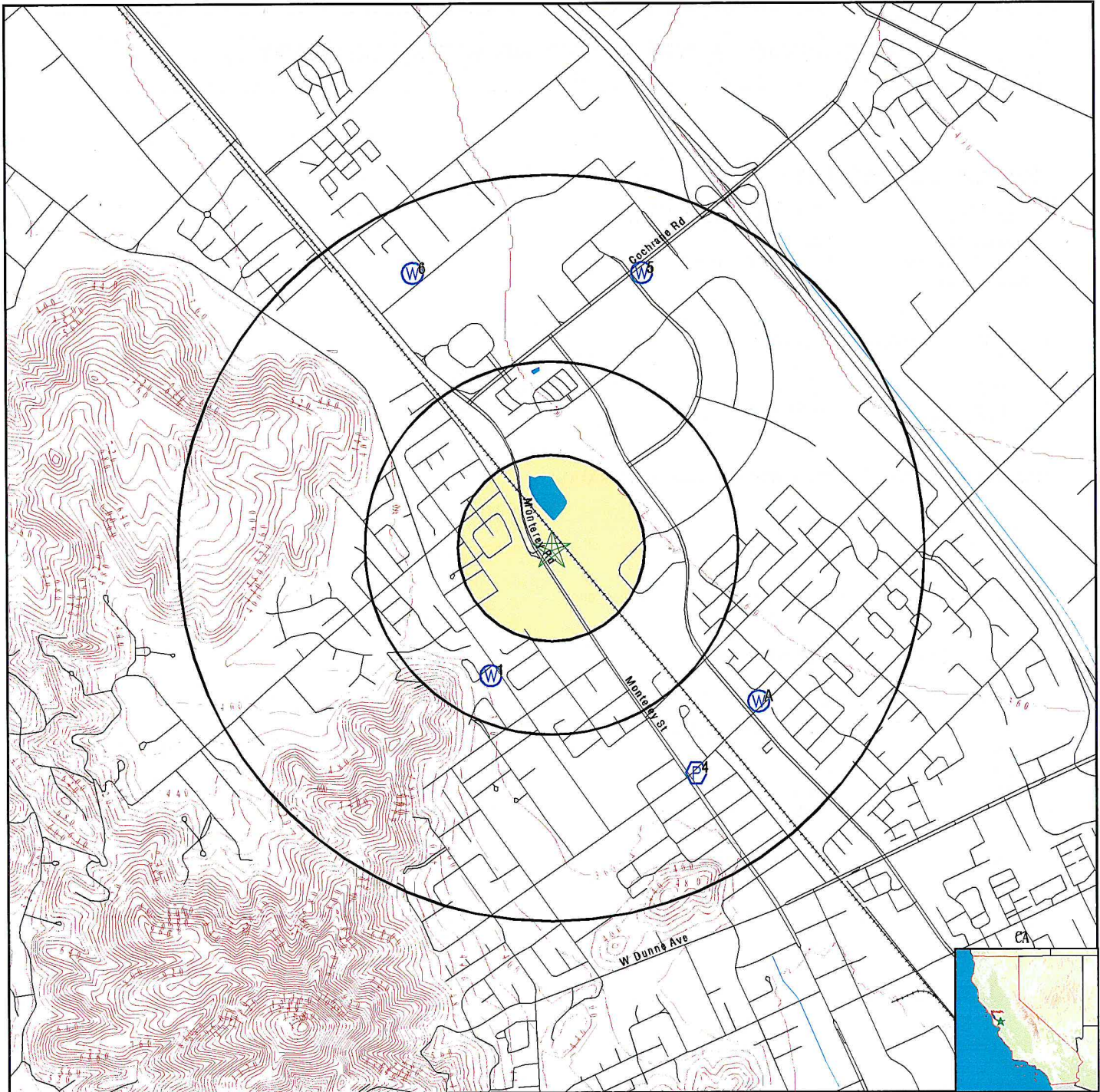
<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
4	CA4300917	1/2 - 1 Mile SSE

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
1	CADW60000004128	1/4 - 1/2 Mile SSW
A2	9386	1/2 - 1 Mile SE
A3	9397	1/2 - 1 Mile SE
5	9381	1/2 - 1 Mile NNE
6	9383	1/2 - 1 Mile NNW

PHYSICAL SETTING SOURCE MAP - 5029315.2s



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

Indeterminate Groundwater Flow at Location

Groundwater Flow Varies at Location

Closest Hydrogeological Data

Oil, gas or related wells

0 1/4 1/2 1 Miles

SITE NAME: CV - Morgan Hill D
ADDRESS: 18110 Monterey Road
Morgan Hill CA 95037
LAT/LONG: 37.139256 / 121.661084

CLIENT: Stantec
CONTACT: Matthew Sapp
INQUIRY #: 5029315.2s
DATE: August 22, 2017 4:18 pm

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

1 SSW 1/4 - 1/2 Mile Lower	CA WELLS	CADW60000004128
---	-----------------	------------------------

Objectid:	4128
Latitude:	37.1343
Longitude:	-121.66405
Site code:	371343N1216641W001
State well numbe:	09S03E20K003M
Local well name:	'09S03E20K003'
Well use id:	1
Well use descrip:	Observation
County id:	43
County name:	Santa Clara
Basin code:	'3-3.01'
Basin desc:	Llagas Area
Dwr region id:	80236
Dwr region:	North Central Region Office
Site id:	CADW60000004128

A2
SE
1/2 - 1 Mile
Lower

CA WELLS 9386

Water System Information:

Prime Station Code: 09S/03E-21K04 M FRDS Number: 4310006012 District Number: 05 Water Type: Well/Groundwater Source Lat/Long: 370800.0 1213900.0 Source Name: MAIN AVE System Number: 4310006 System Name: City of Morgan Hill Organization That Operates System: 17555 Peak Avenue Morgan Hill, CA 95037	User ID: HEN County: Santa Clara Station Type: WELL/AMBNT/MUN/INTAKE/SUPPLY Well Status: Active Raw Precision: Undefined
Pop Served: 27948 Area Served: CITY OF MORGAN HILL Sample Collected: 09-MAR-11 Chemical: SPECIFIC CONDUCTANCE	Connections: 9290 Findings: 520. US
Sample Collected: 09-MAR-11 Chemical: NITRATE (AS NO3)	Findings: 14. MG/L
Sample Collected: 31-JAN-12 Chemical: SPECIFIC CONDUCTANCE	Findings: 520. US
Sample Collected: 31-JAN-12 Chemical: NITRATE (AS NO3)	Findings: 16. MG/L

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Sample Collected:	29-MAY-13	Findings:	3. UNITS
Chemical:	COLOR		
Sample Collected:	29-MAY-13	Findings:	569. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	29-MAY-13	Findings:	7.4
Chemical:	PH, LABORATORY		
Sample Collected:	29-MAY-13	Findings:	131. MG/L
Chemical:	ALKALINITY (TOTAL) AS CaCO ₃		
Sample Collected:	29-MAY-13	Findings:	160. MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	29-MAY-13	Findings:	205. MG/L
Chemical:	HARDNESS (TOTAL) AS CaCO ₃		
Sample Collected:	29-MAY-13	Findings:	46. MG/L
Chemical:	CALCIUM		
Sample Collected:	29-MAY-13	Findings:	22. MG/L
Chemical:	MAGNESIUM		
Sample Collected:	29-MAY-13	Findings:	29. MG/L
Chemical:	SODIUM		
Sample Collected:	29-MAY-13	Findings:	1.4 MG/L
Chemical:	POTASSIUM		
Sample Collected:	29-MAY-13	Findings:	60. MG/L
Chemical:	CHLORIDE		
Sample Collected:	29-MAY-13	Findings:	32. MG/L
Chemical:	SULFATE		
Sample Collected:	29-MAY-13	Findings:	348. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	29-MAY-13	Findings:	0.28
Chemical:	LANGELIER INDEX @ 60 C		
Sample Collected:	29-MAY-13	Findings:	- 0.32
Chemical:	LANGELIER INDEX AT SOURCE TEMP.		
Sample Collected:	29-MAY-13	Findings:	12. MG/L
Chemical:	NITRATE (AS NO ₃)		
Sample Collected:	29-MAY-13	Findings:	10.
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)		
Sample Collected:	29-MAY-13	Findings:	2700. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	22-JUL-13	Findings:	570. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	28-MAY-14	Findings:	589. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	28-MAY-14	Findings:	7.5
Chemical:	PH, LABORATORY		
Sample Collected:	28-MAY-14	Findings:	140. MG/L
Chemical:	ALKALINITY (TOTAL) AS CaCO ₃		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Sample Collected:	28-MAY-14	Findings:	171. MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	28-MAY-14	Findings:	300. MG/L
Chemical:	NITRITE (AS N)		
Sample Collected:	28-MAY-14	Findings:	224. MG/L
Chemical:	HARDNESS (TOTAL) AS CaCO ₃		
Sample Collected:	28-MAY-14	Findings:	50. MG/L
Chemical:	CALCIUM		
Sample Collected:	28-MAY-14	Findings:	24. MG/L
Chemical:	MAGNESIUM		
Sample Collected:	28-MAY-14	Findings:	30. MG/L
Chemical:	SODIUM		
Sample Collected:	28-MAY-14	Findings:	1.5 MG/L
Chemical:	POTASSIUM		
Sample Collected:	28-MAY-14	Findings:	66. MG/L
Chemical:	CHLORIDE		
Sample Collected:	28-MAY-14	Findings:	35. MG/L
Chemical:	SULFATE		
Sample Collected:	28-MAY-14	Findings:	308. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	28-MAY-14	Findings:	0.45
Chemical:	LANGELIER INDEX @ 60 C		
Sample Collected:	28-MAY-14	Findings:	- 0.15
Chemical:	LANGELIER INDEX AT SOURCE TEMP.		
Sample Collected:	28-MAY-14	Findings:	12. MG/L
Chemical:	NITRATE (AS NO ₃)		
Sample Collected:	28-MAY-14	Findings:	0.1 MG/L
Chemical:	BROMIDE		
Sample Collected:	28-MAY-14	Findings:	11.7
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)		
Sample Collected:	28-MAY-14	Findings:	3000. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	28-MAY-14	Findings:	560. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	02-MAR-15	Findings:	2.1 UG/L
Chemical:	CHROMIUM, HEXAVALENT		
Sample Collected:	27-MAY-15	Findings:	11. MG/L
Chemical:	NITRATE (AS NO ₃)		
Sample Collected:	16-MAY-16	Findings:	2.3 MG/L
Chemical:	NITRATE (AS N)		

A3
SE
1/2 - 1 Mile
Lower

CA WELLS 9397

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Water System Information:

Prime Station Code:	09S/03E-28B02 M	User ID:	HEN
FRDS Number:	4310006007	County:	Santa Clara
District Number:	05	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	370800.0 1213900.0	Precision:	Undefined
Source Name:	DIANA WELL 01		
System Number:	4310006		
System Name:	City of Morgan Hill		
Organization That Operates System:	17555 Peak Avenue		
	Morgan Hill, CA 95037		
Pop Served:	27948	Connections:	9290
Area Served:	CITY OF MORGAN HILL	Findings:	21. MG/L
Sample Collected:	04-JAN-11		
Chemical:	NITRATE (AS NO3)		
Sample Collected:	11-JAN-11	Findings:	23. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	18-JAN-11	Findings:	26. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	25-JAN-11	Findings:	27. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	01-FEB-11	Findings:	28. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	08-FEB-11	Findings:	28. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	15-FEB-11	Findings:	29. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	22-FEB-11	Findings:	25. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	01-MAR-11	Findings:	22. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	08-MAR-11	Findings:	23. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	09-MAR-11	Findings:	340. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	09-MAR-11	Findings:	23. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	15-MAR-11	Findings:	25. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	22-MAR-11	Findings:	23. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	29-MAR-11	Findings:	19. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	05-APR-11	Findings:	21. MG/L
Chemical:	NITRATE (AS NO3)		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Sample Collected:	12-APR-11	Findings:	22. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	19-APR-11	Findings:	25. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	26-APR-11	Findings:	27. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03-MAY-11	Findings:	28. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	10-MAY-11	Findings:	29. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	17-MAY-11	Findings:	30. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	24-MAY-11	Findings:	31. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	31-MAY-11	Findings:	31. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	07-JUN-11	Findings:	30. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	14-JUN-11	Findings:	32. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	21-JUN-11	Findings:	33. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	28-JUN-11	Findings:	32. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	05-JUL-11	Findings:	33. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	12-JUL-11	Findings:	32. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	19-JUL-11	Findings:	33. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	26-JUL-11	Findings:	32. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	02-AUG-11	Findings:	32. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	09-AUG-11	Findings:	32. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	16-AUG-11	Findings:	32. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	23-AUG-11	Findings:	32. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	30-AUG-11	Findings:	32. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	07-SEP-11	Findings:	32. MG/L
Chemical:	NITRATE (AS NO3)		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Sample Collected:	13-SEP-11	Findings:	31. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	20-SEP-11	Findings:	32. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	27-SEP-11	Findings:	32. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	04-OCT-11	Findings:	32. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	11-OCT-11	Findings:	32. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	18-OCT-11	Findings:	32. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	25-OCT-11	Findings:	30. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	01-NOV-11	Findings:	32. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	08-NOV-11	Findings:	32. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	15-NOV-11	Findings:	31. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	22-NOV-11	Findings:	32. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	29-NOV-11	Findings:	32. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	31-JAN-12	Findings:	400. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	31-JAN-12	Findings:	23. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	15-MAY-12	Findings:	25. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	19-JUN-12	Findings:	29. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	26-JUN-12	Findings:	30. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	10-JUL-12	Findings:	29. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	17-JUL-12	Findings:	29. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	23-JUL-12	Findings:	29. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	30-JUL-12	Findings:	25. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	13-AUG-12	Findings:	27. MG/L
Chemical:	NITRATE (AS NO3)		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Sample Collected:	20-AUG-12	Findings:	25. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	27-AUG-12	Findings:	27. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	05-SEP-12	Findings:	27. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	10-SEP-12	Findings:	27. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	17-SEP-12	Findings:	26. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	24-SEP-12	Findings:	30. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	01-OCT-12	Findings:	29. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	08-OCT-12	Findings:	27. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	15-OCT-12	Findings:	28. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	22-OCT-12	Findings:	29. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	29-OCT-12	Findings:	25. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	05-NOV-12	Findings:	26. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	12-NOV-12	Findings:	25. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	19-NOV-12	Findings:	23. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	26-NOV-12	Findings:	25. MG/L
Chemical:	NITRATE (AS NO3)		

4
SSE
1/2 - 1 Mile
Lower

FRDS PWS CA4300917

Epa region:	09	State:	CA
Pwsid:	CA4300917		
Pwsname:	CALIFORNIA DIV OF FORESTRY		
City served:	Not Reported	State served:	CA
Zip served:	Not Reported	Fips county:	06085
Status:	Closed	Pop srvd:	25
Pwssvconn:	5	Source:	Groundwater
Pws type:	TNCWS	Owner:	State_Govt
Contact:	CALIFORNIA DIV OF FORESTRY		
Contactorgname:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Contact phone:	Not Reported	Contact address1:	Not Reported
Contact address2:	Not Reported	Contact city:	MORGAN HILL
Contact state:	CA	Contact zip:	95037
Activity code:	N		

Location Information:

Name:	CALIFORNIA DIV OF FORESTRY		
Pwstypcd:	TNCWS	Prmsrccd:	GW
Poperved:	25		
Add1:	Not Reported		
Add2:	Not Reported		
City:	MORGAN HILL	State:	CA
Zip:	95037	Phone:	Not Reported
Cityserv:	NC PARK RES	Cntysew:	Not Reported
Stateserv:	CA	Zipsew:	Not Reported

PWS ID:	CA4300917	
Date Initiated:	8405	Date Deactivated: Not Reported
PWS Name:	CALIFORNIA DIV OF FORESTRY	
	MORGAN HILL, CA 95037	

Addressee / Facility: Not Reported

Facility Latitude:	37 07 50	Facility Longitude:	121 39 11
City Served:	NC PARK RES		
Treatment Class:	Untreated	Population:	00000025

Violations information not reported.

5
NNE
1/2 - 1 Mile
Higher

CA WELLS 9381

Water System Information:

Prime Station Code:	09S/03E-16M03 M	User ID:	HEN
FRDS Number:	4310006005	County:	Santa Clara
District Number:	05	Station Type:	WELL/AMBNT/MUN/INTAKE
Water Type:	Well/Groundwater	Well Status:	Standby Raw
Source Lat/Long:	370900.0 1213920.0	Precision:	1,000 Feet (10 Seconds)
Source Name:	COCHRAN WELL - STANDBY		
System Number:	4310006		
System Name:	City of Morgan Hill		
Organization That Operates System:	17555 Peak Avenue		
	Morgan Hill, CA 95037		
Pop Served:	27948	Connections:	9290
Area Served:	CITY OF MORGAN HILL		

6
NNW
1/2 - 1 Mile
Lower

CA WELLS 9383

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Water System Information:

Prime Station Code:	09S/03E-17E03 M	User ID:	HEN
FRDS Number:	4310006004	County:	Santa Clara
District Number:	05	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Standby Raw
Source Lat/Long:	370900.0 1214000.0	Precision:	Undefined
Source Name:	BURNETT AVE - STANDBY		
System Number:	4310006		
System Name:	City of Morgan Hill		
Organization That Operates System:	17555 Peak Avenue		
	Morgan Hill, CA 95037		
Pop Served:	27948	Connections:	9290
Area Served:	CITY OF MORGAN HILL		
Sample Collected:	21-OCT-08	Findings:	5.6 UG/L
Chemical:	PERCHLORATE		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
95037	21	0

Federal EPA Radon Zone for SANTA CLARA 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 Zip Code: 95037

Number of sites tested: 1

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	-0.300 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

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 & Game

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

© 2015 TomTom North America, Inc. All rights reserved. This material is proprietary and the subject of copyright protection and other intellectual property rights owned by or licensed to Tele Atlas North America, Inc. The use of this material is subject to the terms of a license agreement. You will be held liable for any unauthorized copying or disclosure of this material.

Appendix E AGENCY RECORDS

From: [Pech, Somira](#)
To: [Jansen, Alicia](#)
Subject: CPRA REQ090717D
Date: Saturday, September 09, 2017 10:58:25 AM

Good morning Alicia,

Thank you for your recent record request received on 09/07/2017 for the following address in Morgan Hill:

18110 Monterey Dr

We have no records for this location. However, additional electronic documents may be found on the following websites:

[Local Oversight Program \(LOP\)](#)
[GEOTracker \(GT\)](#)
[Cal EPA Site Portal](#)

Spill Reports Website – California Office of Emergency Services (Cal OES):

[https://w3.calema.ca.gov/operational/malhaz.nsf/\\$defaultview](https://w3.calema.ca.gov/operational/malhaz.nsf/$defaultview)

Please be advised that in some cities, other participating agencies may be responsible for maintaining the type of files you requested. This link may be of assistance in determining who will have the documents you are looking for in the future:

[UNIDOCs](#) – Who regulates what in Santa Clara County

Best regards,

Somira Pech

Department of Environmental Health
1555 Berger Drive, Building 2, Suite 300
San Jose, CA 95112

www.ehinfo.org

408-918-3423 Direct Line

408-280-6479 Fax

Email: somira.pech@deh.sccgov.org

**** LAST business transaction/payment/submittal of the day will be processed at 4:45 pm. Transactions submitted after 4:45 pm will be processed the following business day.**

“Learn from yesterday, live for today, hope for tomorrow.” By Albert Einstein

NOTICE: This email message and/or its attachments may contain information that is confidential or restricted. It is intended only for the individuals named as recipients in the message. If you are NOT an authorized recipient, you are prohibited from using, delivering, distributing, printing, copying, or disclosing the message or content to others and must delete the message from your computer. If you have received this message in error, please notify the sender by return mail.



County of Santa Clara
Consumer & Environmental Protection Agency
Public Records Request Form

Please Print Legibly or Type:

Name of Requestor:	Alicia Jansen
Agency/Company: (if applicable)	Stantec Consulting
Address of Requestor:	25864-F Business Center Drive, Redlands, CA 92374
Phone # of Requestor:	909-255-8213
Fax # of Requestor:	909-335-6120
Email of Requestor:	alicia.jansen@stantec.com
Indicate the Best Way to Reach You:	email

Requested Documents - please be as specific as possible & be sure to include the address of the location being requested (including city) and the exact type of records you are looking for:

I am conducting an environmental site assessment and would like to request any available records including inspection notes, groundwater monitoring documents, hazardous materials permits, UST permits, or other records of environmental significance for the Property located at 18110 Monterey Drive, Morgan Hill, CA 95037.

Once the form is completed and printed, you can either email to dehweb@cep.sccgov.org or fax to (408) 286-3280. **Please note: We have 10 business days to process the request in order of which it was received. We only process requests for records pertaining to Consumer & Environmental Protection Agency. If you are requesting records for other agencies/departments please contact those other agencies/departments. Thank you.**

FOR COUNTY USE ONLY:

Date Received:		Initials:
Department Received:		Request #:
Date Submitted to Counsel:		



FIRE DEPARTMENT SANTA CLARA COUNTY

14700 Winchester Blvd., Los Gatos, CA. 95032-1818
(408) 378-4010 • (408) 378-9342 (fax) • www.sccfd.org



APPLICATION FOR COPIES OF PUBLIC RECORDS

Read Instructions For Review Carefully

COMPANY OR SITE FOR WHICH RECORDS ARE REQUESTED

Please Type or Print Legibly

BUSINESS NAME: _____

STREET ADDRESS: 18110 MONTEREY DRIVE

CITY/ZIP: MORGAN HILL, CA 95037

INFORMATION REQUESTED BY:

NAME: ALICIA JANSEN

BUSINESS NAME: STANTEC CONSULTING

STREET: 25864-F BUSINESS CENTER DRIVE

CITY/ZIP: REDLANDS, CA 92374

PHONE: 909-255-8213 FAX: 909-335-6120

INFORMATION REQUESTED

I am conducting an environmental site assessment and would like to request any available records including inspection notes, groundwater monitoring documents, hazardous materials permits, UST permits, or other records of environmental significance for the Property located at 18110 Monterey Drive, Morgan Hill, CA 95037.

Organized as the Santa Clara County Central Fire Protection District

*Serving Santa Clara County and the communities of Campbell, Cupertino, Los Altos,
Los Altos Hills, Los Gatos, Monte Sereno, Morgan Hill, and Saratoga*

INSTRUCTIONS FOR REVIEW OF FIRE DEPARTMENT RECORDS

1. Applications for review of public records must be submitted on Santa Clara County Fire Department's standard application form.
2. The specific street address must be provided for the site. Additional sites must be submitted on separate application forms.
3. You will be contacted by telephone when files are available and a time will be scheduled for the files to be reviewed. Please allow 10 working days for files to be made available.
4. If the files are not reviewed on the date scheduled, and no contact is made to reschedule, the records will be returned to the files and a new application must be submitted.
5. Files must be reviewed in the designated area of the Bureau of Fire Prevention office.
6. No documents may be removed from the files. Contents of files may not be reorganized.
7. File reviews must be completed no later than 5:00 pm. You will be allowed to return at 8:00am the next work day to complete your review if necessary.
8. If extended time is required to review files, notify our office and the files will be kept available for your review for up to five working days.
9. Copying of documents is allowable with the exception of maps and drawings. A \$5.00 fee is charged for copying plus 10 cents per page printed. Fees must be paid by check or exact change only.

I have read and understand the above instructions.



SIGNATURE

09/07/2017

DATE


(Form #1/95 Rev. 03/19/12)

Organized as the Santa Clara County Central Fire Protection District

*Serving Santa Clara County and the communities of Campbell, Cupertino, Los Altos,
Los Altos Hills, Los Gatos, Monte Sereno, Morgan Hill, and Saratoga*

Appendix F

HISTORICAL DOCUMENTS



CV - Morgan Hill D
18110 Monterey Road
Morgan Hill, CA 95037

Inquiry Number: 5029315.3
August 22, 2017

Certified Sanborn® Map Report



6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

08/22/17

Site Name:

CV - Morgan Hill D
18110 Monterey Road
Morgan Hill, CA 95037
EDR Inquiry # 5029315.3

Client Name:

Stantec
25864-F Business Center Drive
Redlands, CA 92374
Contact: Matthew Sapp



The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Stantec 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.

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Certification # 2DE9-4246-9666

PO # NA

Project City Ventures - Morgan Hill D

UNMAPED 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 #: 2DE9-4246-9666

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™

Limited Permission To Make Copies

Stantec (the client) is permitted to make up to FIVE photocopies of this Sanborn Map transmittal and each fire insurance map accompanying this report solely for the limited use of its customer. No one other than the client is authorized to make copies. Upon request made directly to an EDR Account Executive, the client may be permitted to make a limited number of additional photocopies. This permission is conditioned upon compliance by the client, its customer and their agents with EDR's copyright policy; a copy of which is available upon request.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT. Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2017 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

CV - Morgan Hill D
18110 Monterey Road
Morgan Hill, CA 95037

Inquiry Number: 5029315.4
August 22, 2017

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

08/22/17

Site Name:

CV - Morgan Hill D
18110 Monterey Road
Morgan Hill, CA 95037
EDR Inquiry # 5029315.4

Client Name:

Stantec
25864-F Business Center Drive
Redlands, CA 92374
Contact: Matthew Sapp



EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Stantec 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. EDR's 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.# NA
Project: City Ventures - Morgan Hill D

Coordinates:

Latitude: 37.139256 37° 8' 21" North
Longitude: -121.661084 -121° 39' 40" West
UTM Zone: Zone 10 North
UTM X Meters: 618916.83
UTM Y Meters: 4111159.65
Elevation: 357.00' above sea level

Maps Provided:

2012
1980
1973
1968
1955
1939
1917

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT. Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

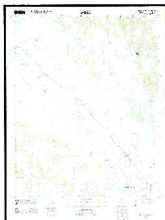
Copyright 2017 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2012 Source Sheets



Morgan Hill

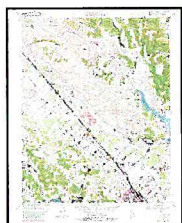
7.5-minute, 24000



Mount Madonna

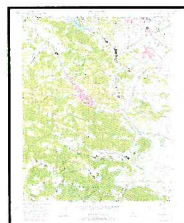
7.5-minute, 24000

1980 Source Sheets



Morgan Hill

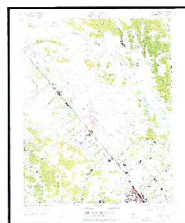
7.5-minute, 24000
Aerial Photo Revised 1978



Mt. Madonna

7.5-minute, 24000
Aerial Photo Revised 1978

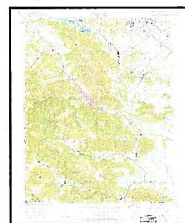
1973 Source Sheets



Morgan Hill

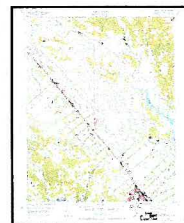
7.5-minute, 24000
Aerial Photo Revised 1973

1968 Source Sheets



Mt. Madonna

7.5-minute, 24000
Aerial Photo Revised 1968



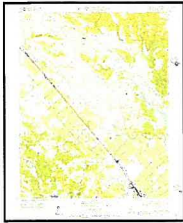
Morgan Hill

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.

1955 Source Sheets



Morgan Hill

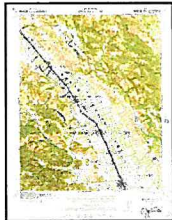
7.5-minute, 24000
Aerial Photo Revised 1953



Mt. Madonna

7.5-minute, 24000
Aerial Photo Revised 1953

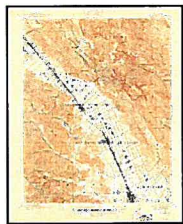
1939 Source Sheets



Morgan Hill

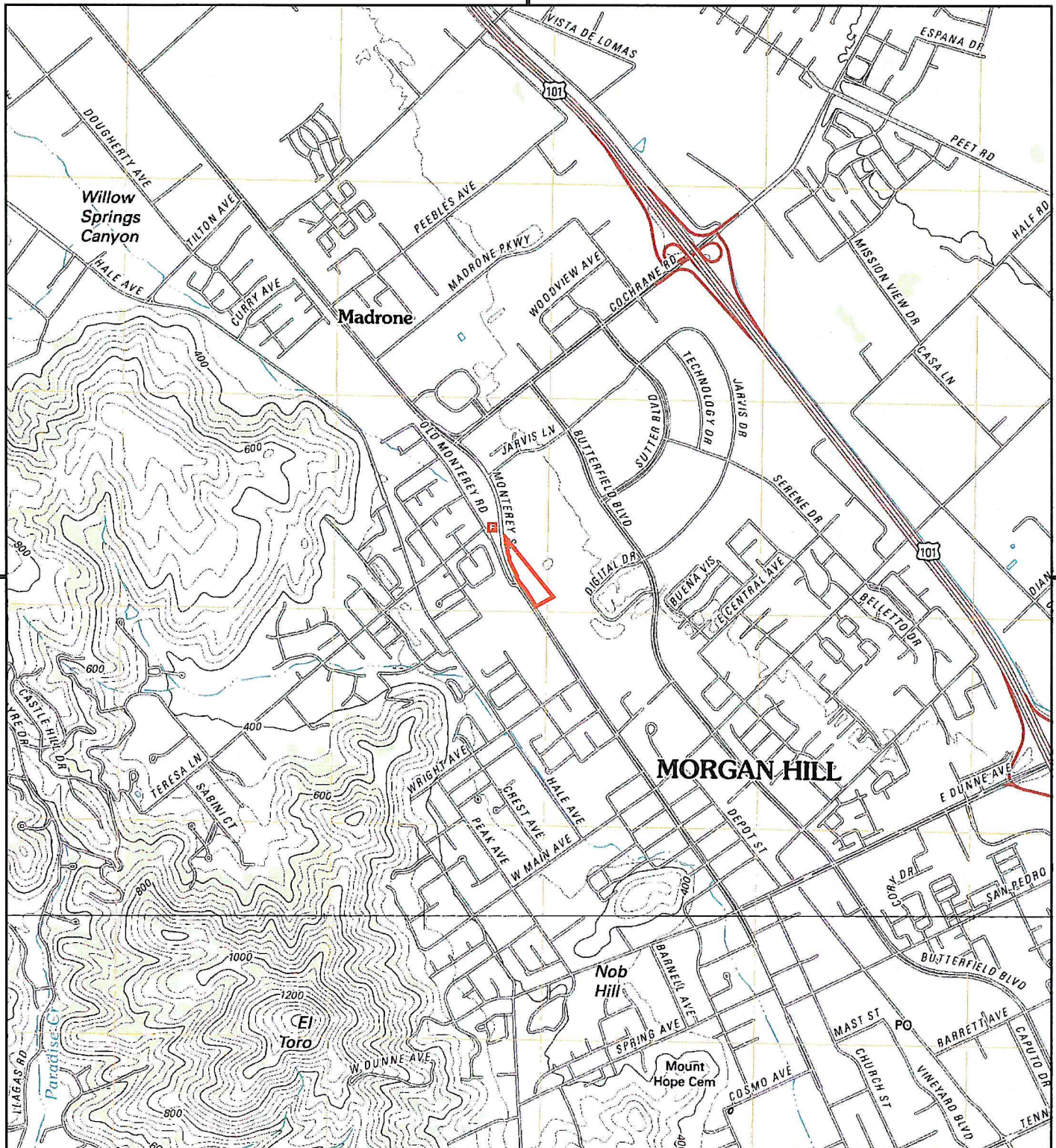
15-minute, 62500
Aerial Photo Revised 1939

1917 Source Sheets

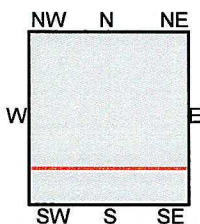


Morgan Hill

15-minute, 62500



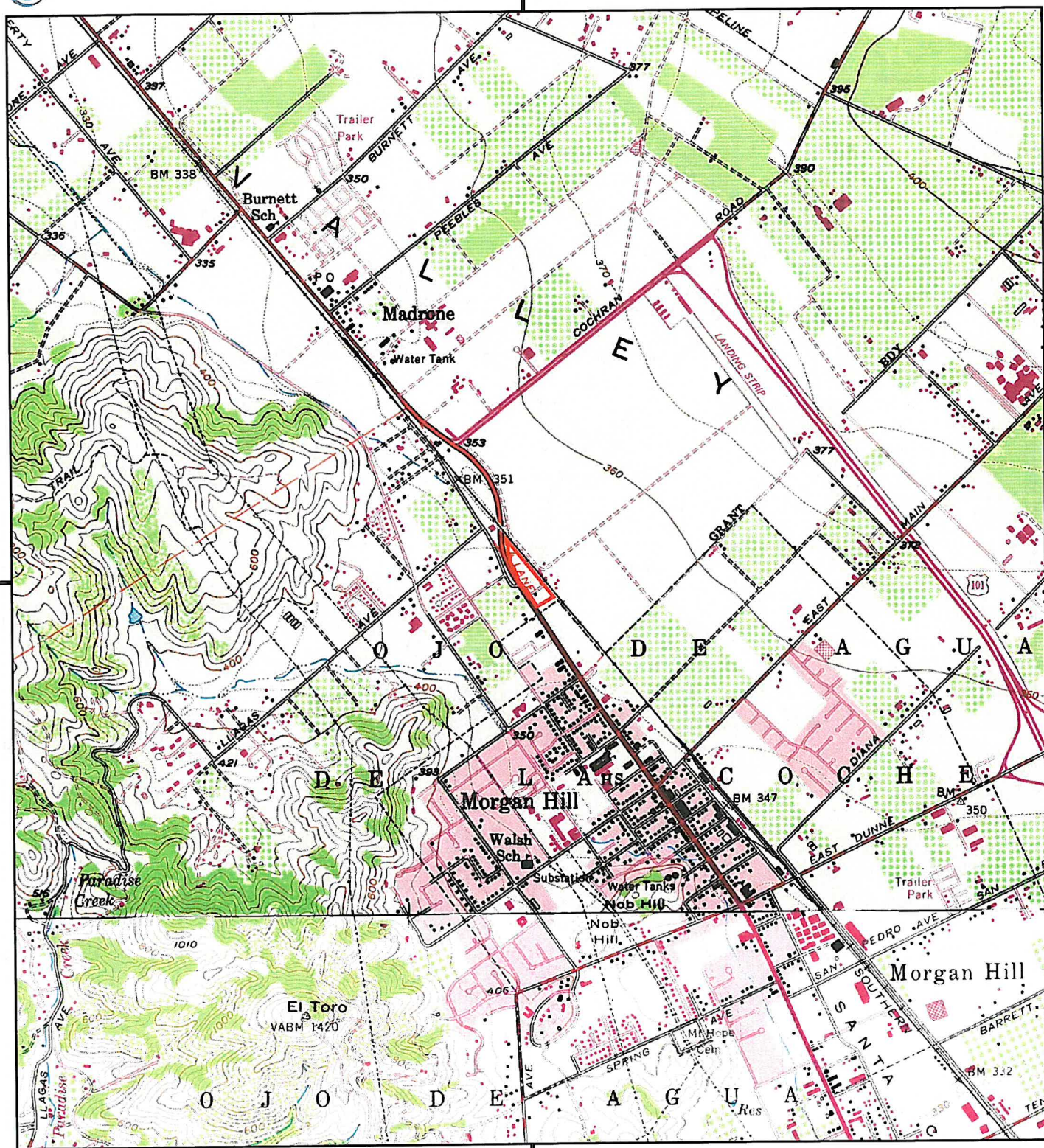
This report includes information from the following map sheet(s).



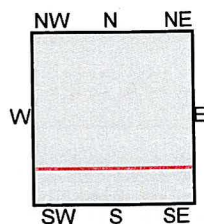
TP, Morgan Hill, 2012, 7.5-minute
S, Mount Madonna, 2012, 7.5-minute

SITE NAME: CV - Morgan Hill D
ADDRESS: 18110 Monterey Road
Morgan Hill, CA 95037
CLIENT: Stantec





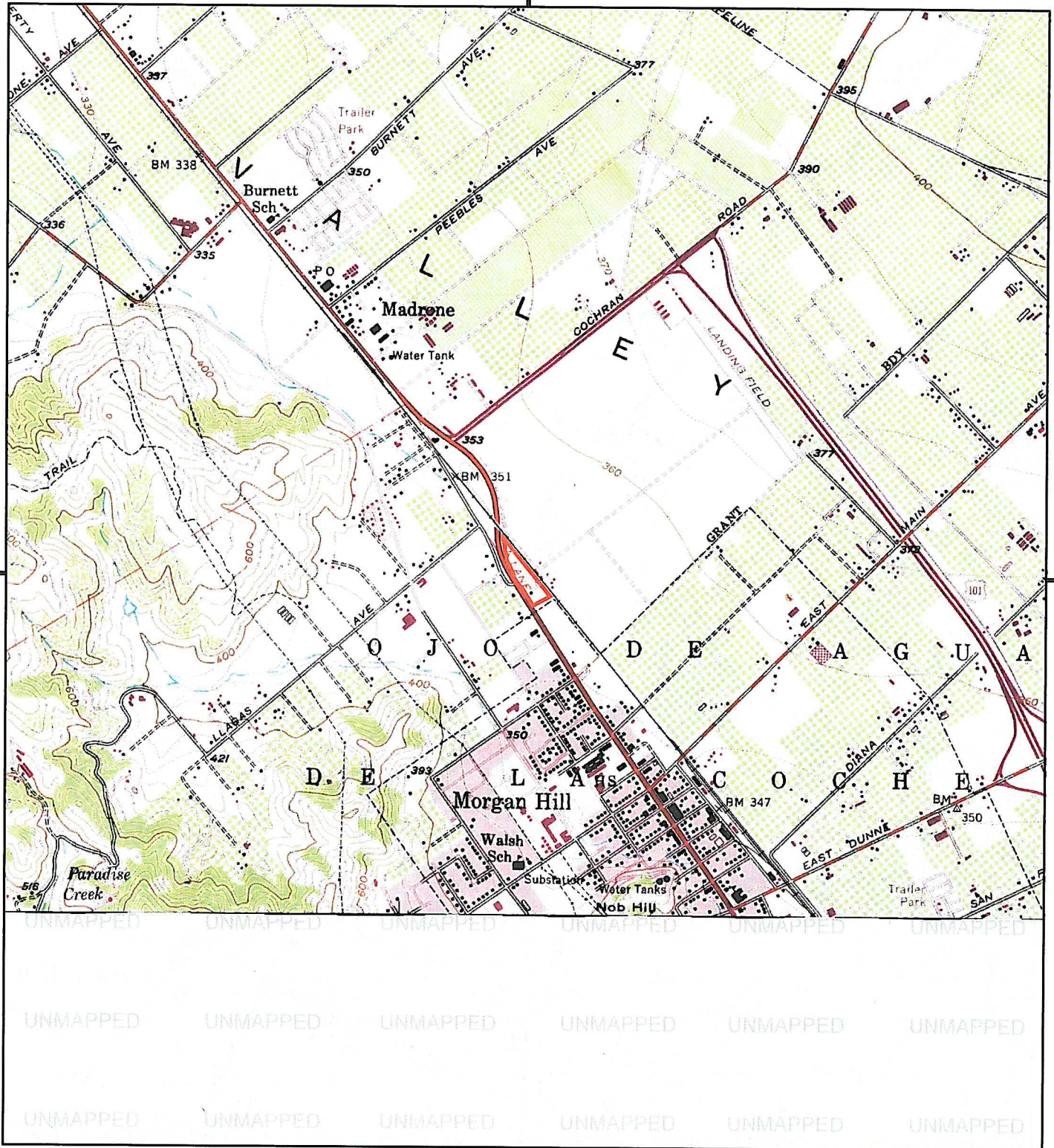
This report includes information from the following map sheet(s).



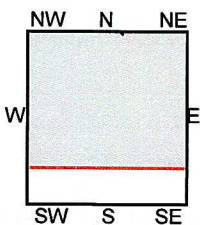
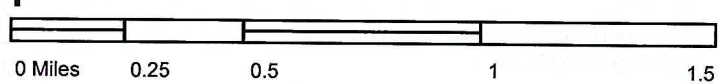
TP, Morgan Hill, 1980, 7.5-minute
S, Mt. Madonna, 1980, 7.5-minute

SITE NAME: CV - Morgan Hill D
ADDRESS: 18110 Monterey Road
Morgan Hill, CA 95037
CLIENT: Stantec





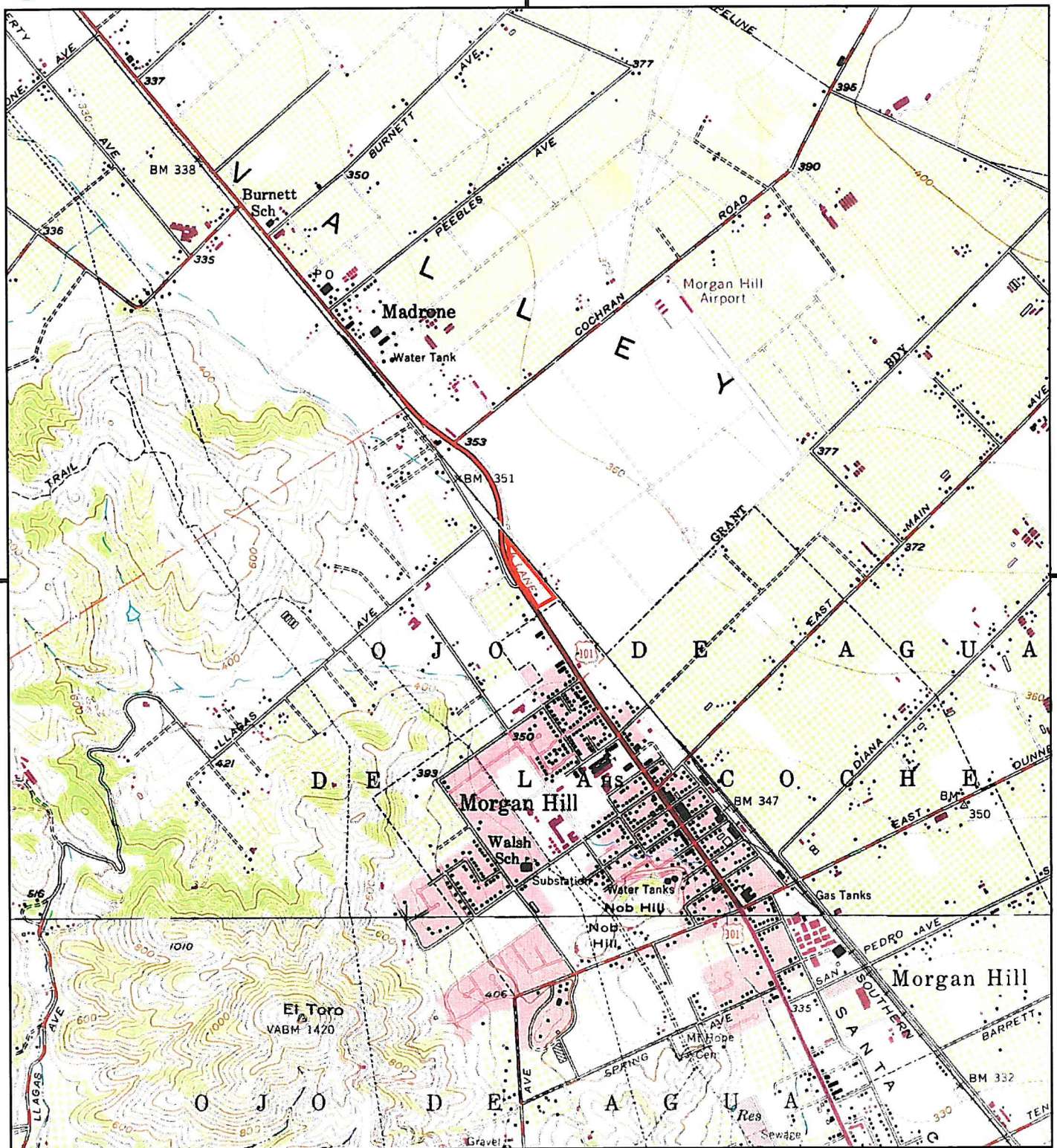
This report includes information from the following map sheet(s).



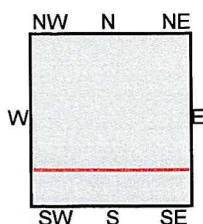
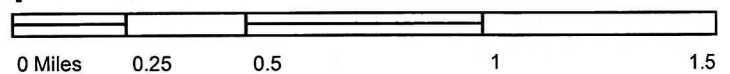
TP, Morgan Hill, 1973, 7.5-minute

SITE NAME: CV - Morgan Hill D
 ADDRESS: 18110 Monterey Road
 Morgan Hill, CA 95037
 CLIENT: Stantec





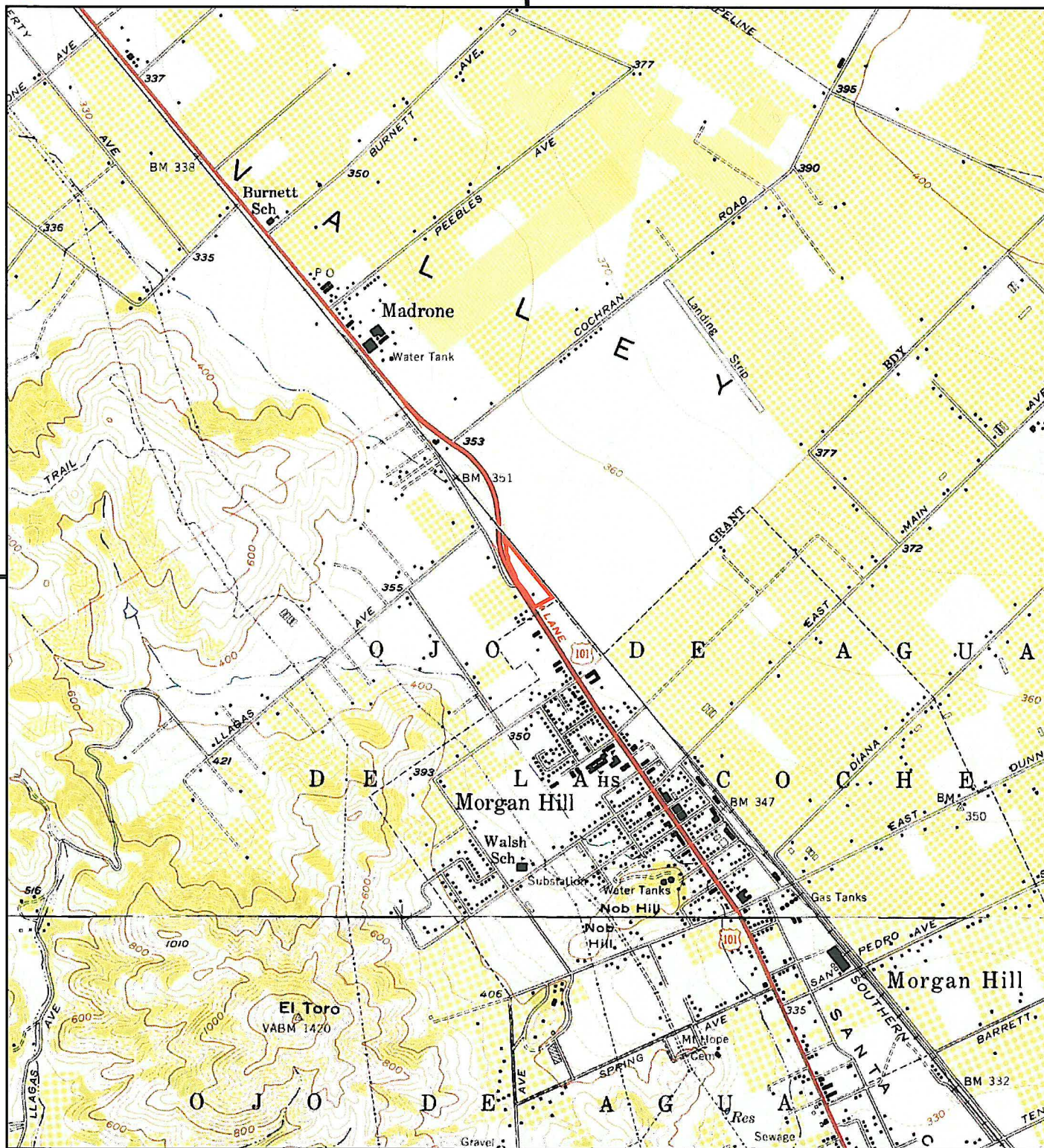
This report includes information from the following map sheet(s).



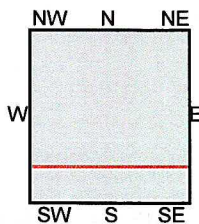
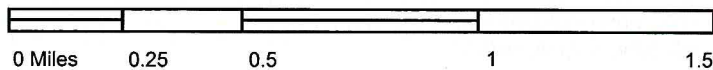
TP, Morgan Hill, 1968, 7.5-minute
S, Mt. Madonna, 1968, 7.5-minute

SITE NAME: CV - Morgan Hill D
ADDRESS: 18110 Monterey Road
Morgan Hill, CA 95037
CLIENT: Stantec





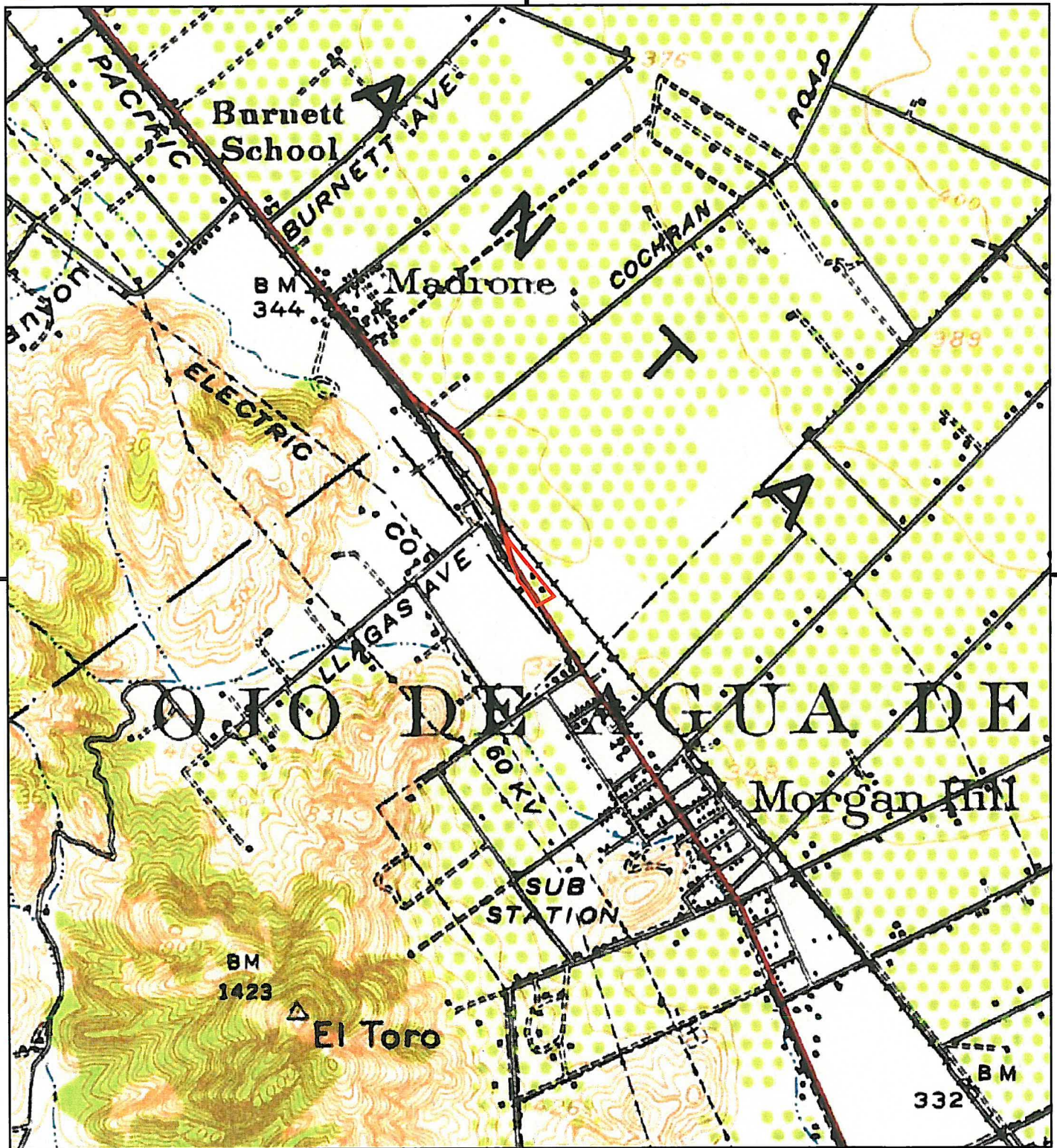
This report includes information from the following map sheet(s).



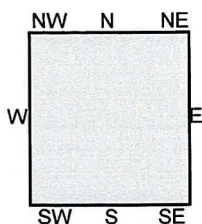
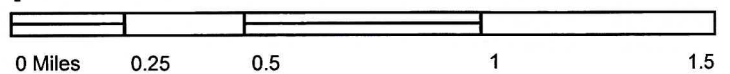
TP, Morgan Hill, 1955, 7.5-minute
S, Mt. Madonna, 1955, 7.5-minute

SITE NAME: CV - Morgan Hill D
ADDRESS: 18110 Monterey Road
Morgan Hill, CA 95037
CLIENT: Stantec





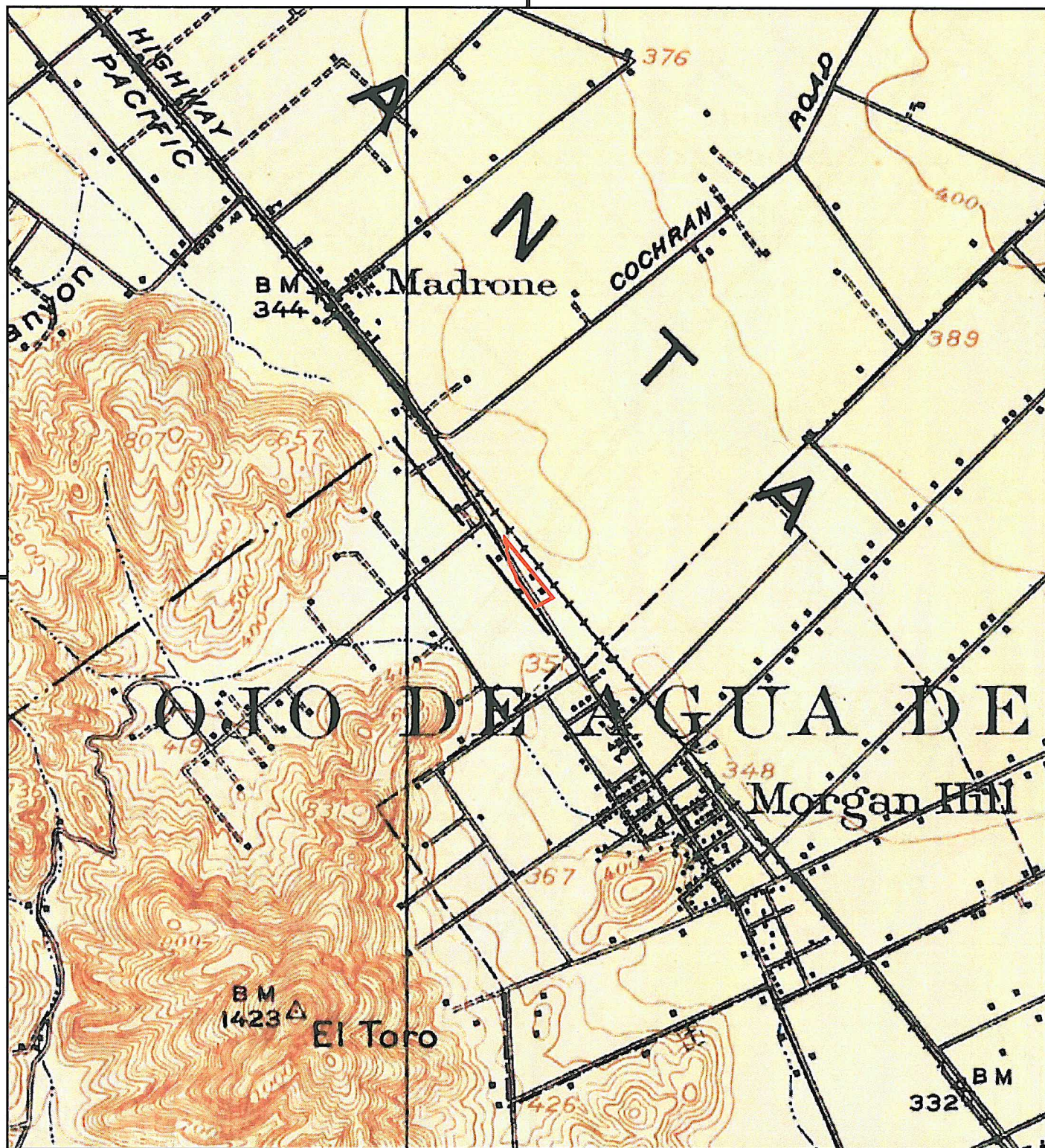
This report includes information from the following map sheet(s).



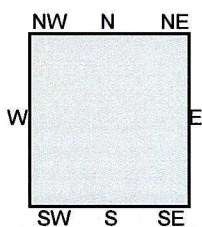
TP, Morgan Hill, 1939, 15-minute

SITE NAME: CV - Morgan Hill D
ADDRESS: 18110 Monterey Road
Morgan Hill, CA 95037
CLIENT: Stantec





This report includes information from the following map sheet(s).



TP, Morgan Hill, 1917, 15-minute

SITE NAME: CV - Morgan Hill D
ADDRESS: 18110 Monterey Road
Morgan Hill, CA 95037
CLIENT: Stantec





CV - Morgan Hill D
18110 Monterey Road
Morgan Hill, CA 95037

Inquiry Number: 5029315.9
August 24, 2017

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

08/24/17

Site Name:

CV - Morgan Hill D
18110 Monterey Road
Morgan Hill, CA 95037
EDR Inquiry # 5029315.9

Client Name:

Stantec
25864-F Business Center Drive
Redlands, CA 92374
Contact: Matthew Sapp



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:

<u>Year</u>	<u>Scale</u>	<u>Details</u>	<u>Source</u>
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2010	1"=500'	Flight Year: 2010	USDA/NAIP
2009	1"=500'	Flight Year: 2009	USDA/NAIP
2006	1"=500'	Flight Year: 2006	USDA/NAIP
2005	1"=500'	Flight Year: 2005	USDA/NAIP
1998	1"=500'	Acquisition Date: August 21, 1998	USGS/DOQQ
1982	1"=500'	Flight Date: July 05, 1982	USDA
1973	1"=500'	Flight Date: January 01, 1973	USGS
1968	1"=500'	Flight Date: June 14, 1968	USGS
1963	1"=500'	Flight Date: June 23, 1963	USGS
1956	1"=500'	Flight Date: June 12, 1956	USDA
1950	1"=500'	Flight Date: March 06, 1950	USDA
1948	1"=500'	Flight Date: September 26, 1948	USDA
1940	1"=500'	Flight Date: June 09, 1940	USDA
1939	1"=500'	Flight Date: October 20, 1939	USDA

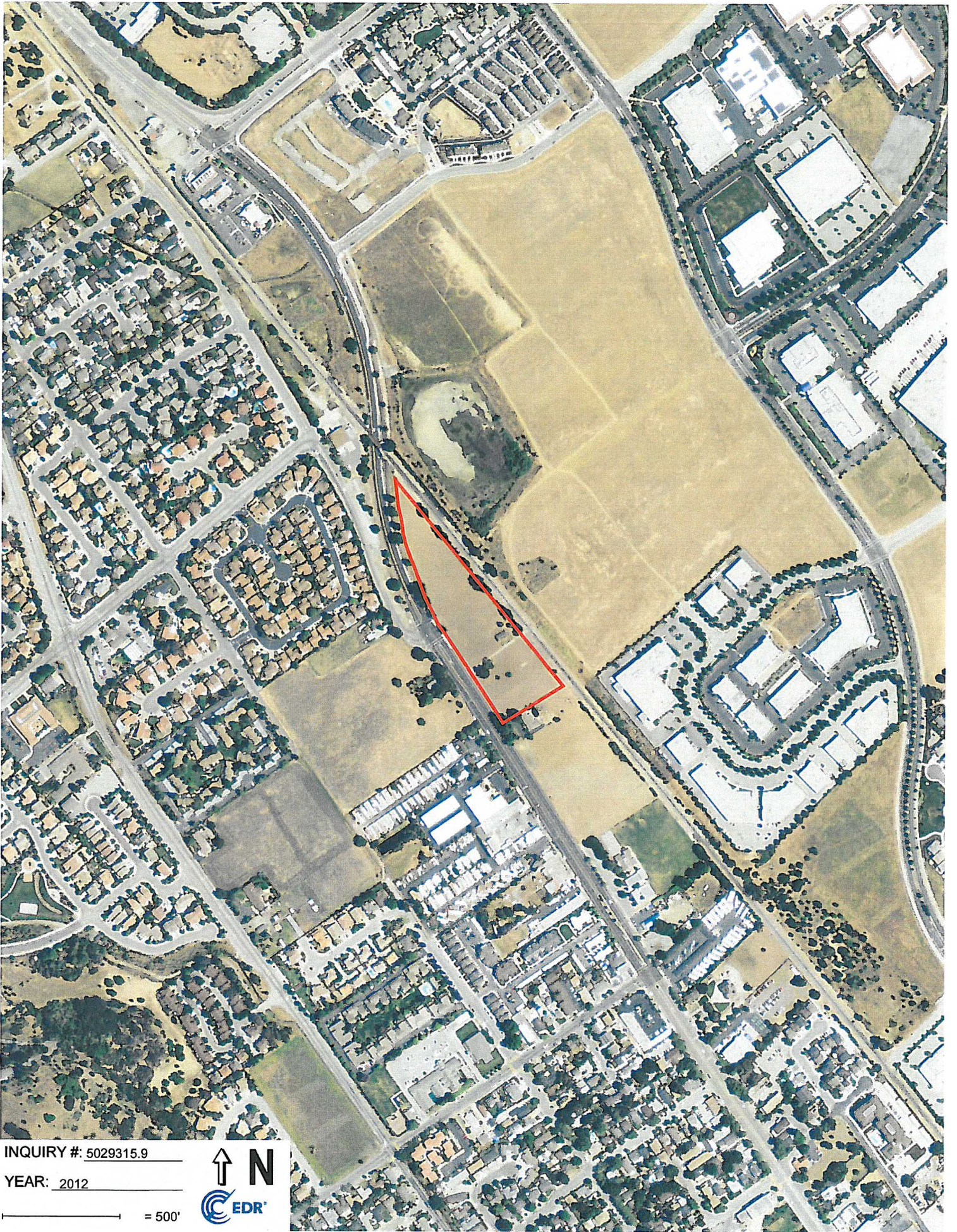
When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT. Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2017 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.



INQUIRY #: 5029315.9

YEAR: 2012

— = 500'





INQUIRY #: 5029315.9

YEAR: 2010

— = 500'





INQUIRY #: 5029315.9

YEAR: 2009

— = 500'



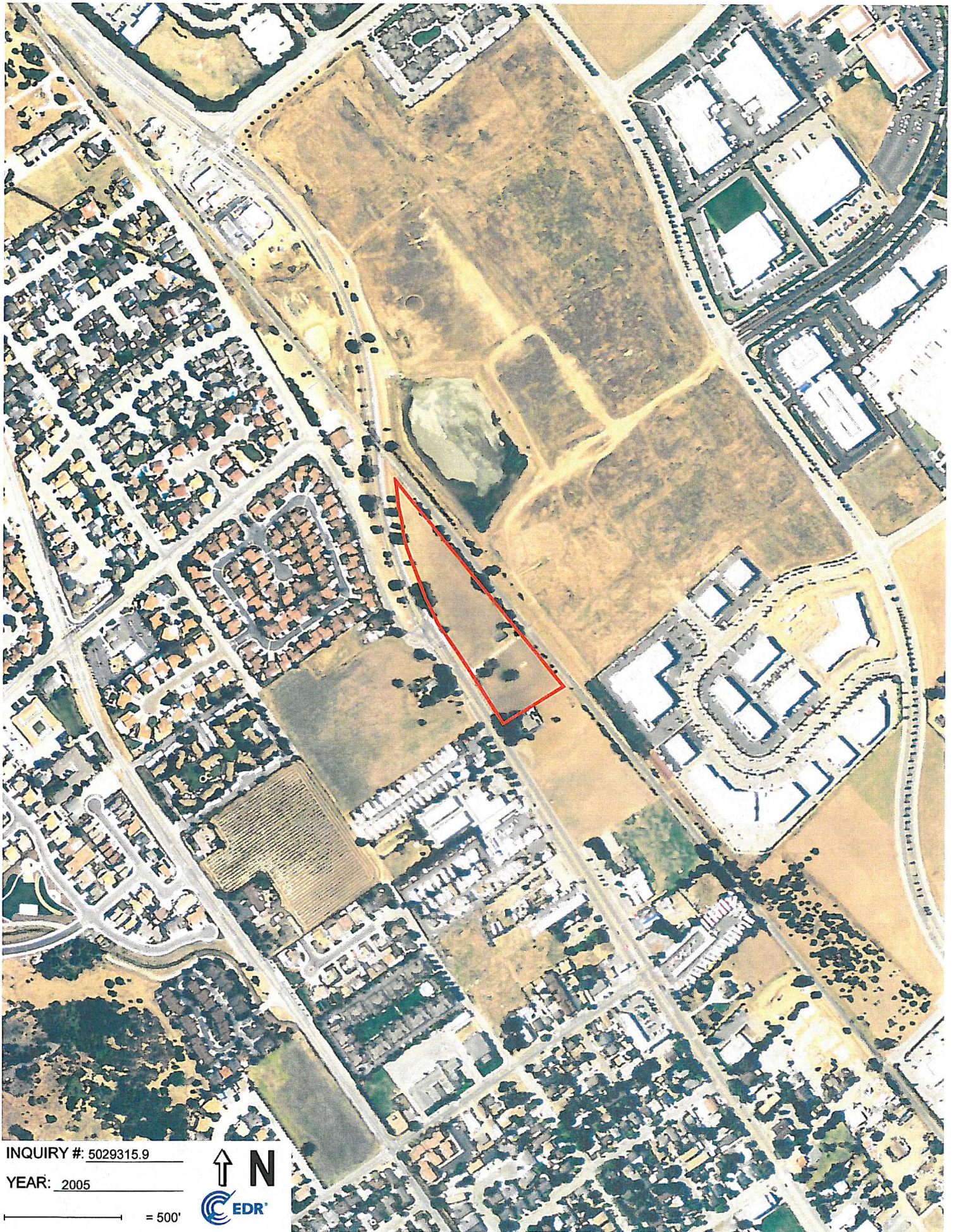


INQUIRY #: 5029315.9

YEAR: 2006

— = 500'





INQUIRY #: 5029315.9

YEAR: 2005

— = 500'





INQUIRY #: 5029315.9

YEAR: 1998

— = 500'





INQUIRY #: 5029315.9

YEAR: 1982

— = 500'





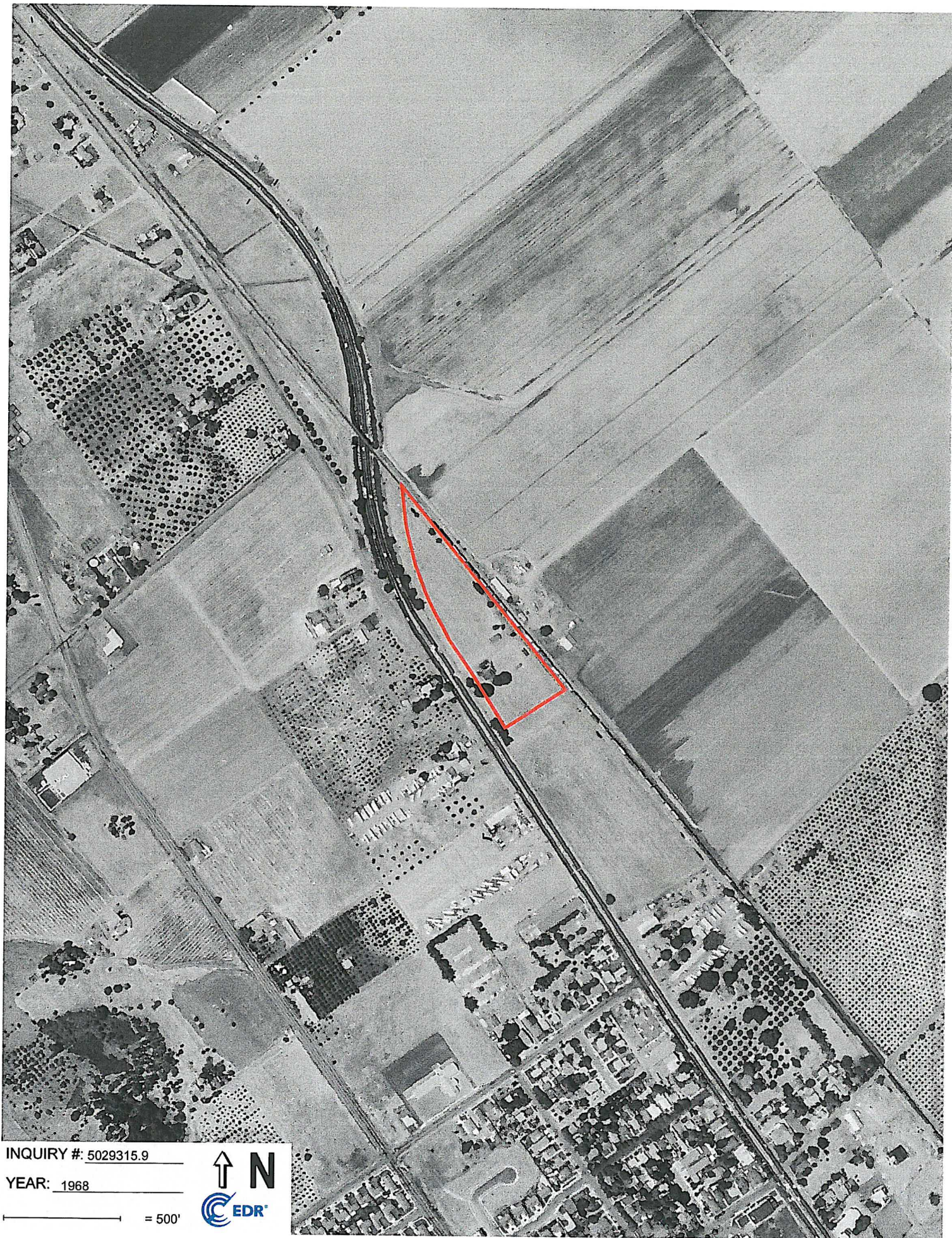
INQUIRY #: 5029315.9

YEAR: 1973

_____ = 500'



Subject boundary not shown because it exceeds image extent or image is not georeferenced.

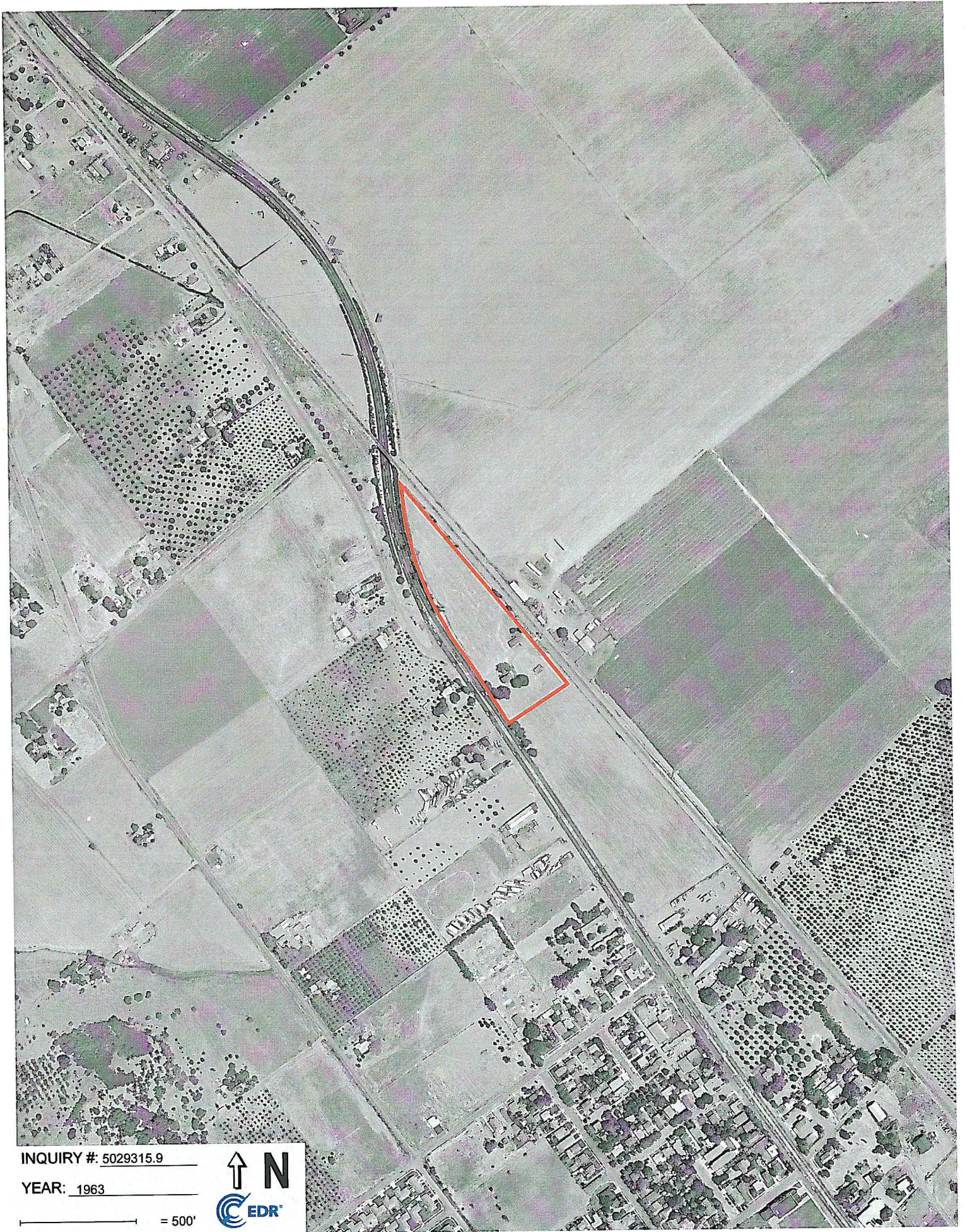


INQUIRY #: 5029315.9

YEAR: 1968

— = 500'



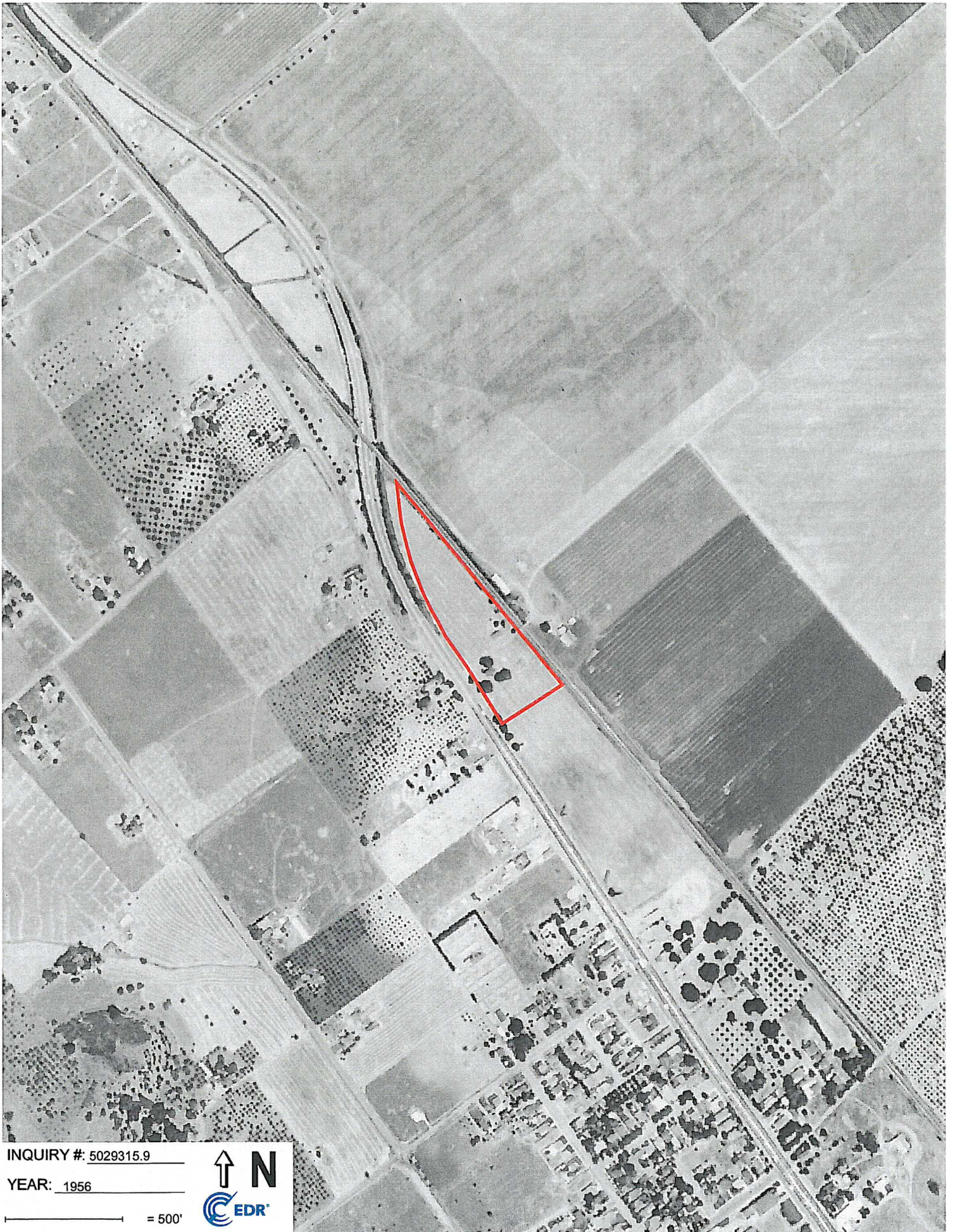


INQUIRY #: 5029315.9

YEAR: 1963

— = 500'





INQUIRY #: 5029315.9

YEAR: 1956

— = 500'



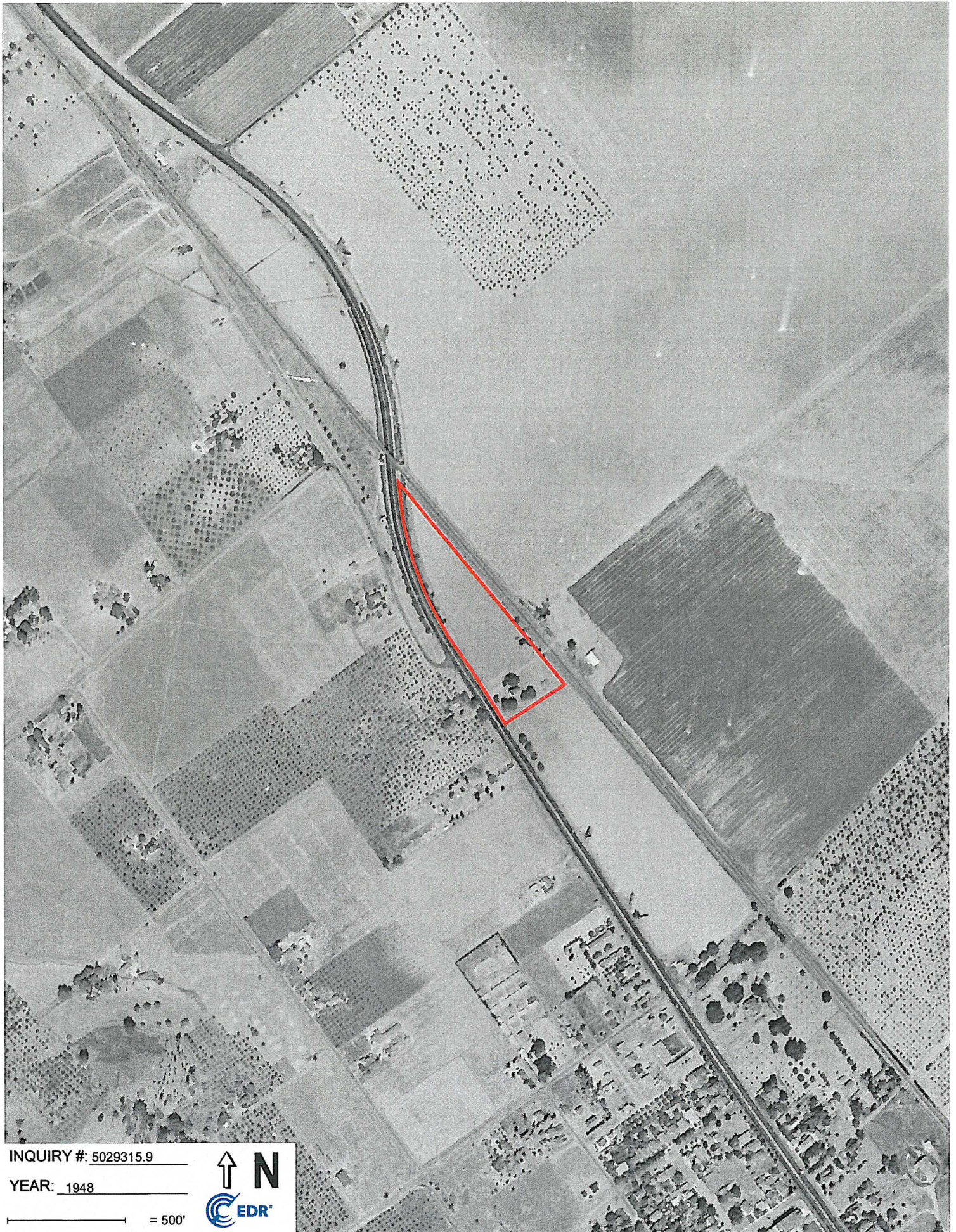


INQUIRY #: 5029315.9

YEAR: 1950

— = 500'



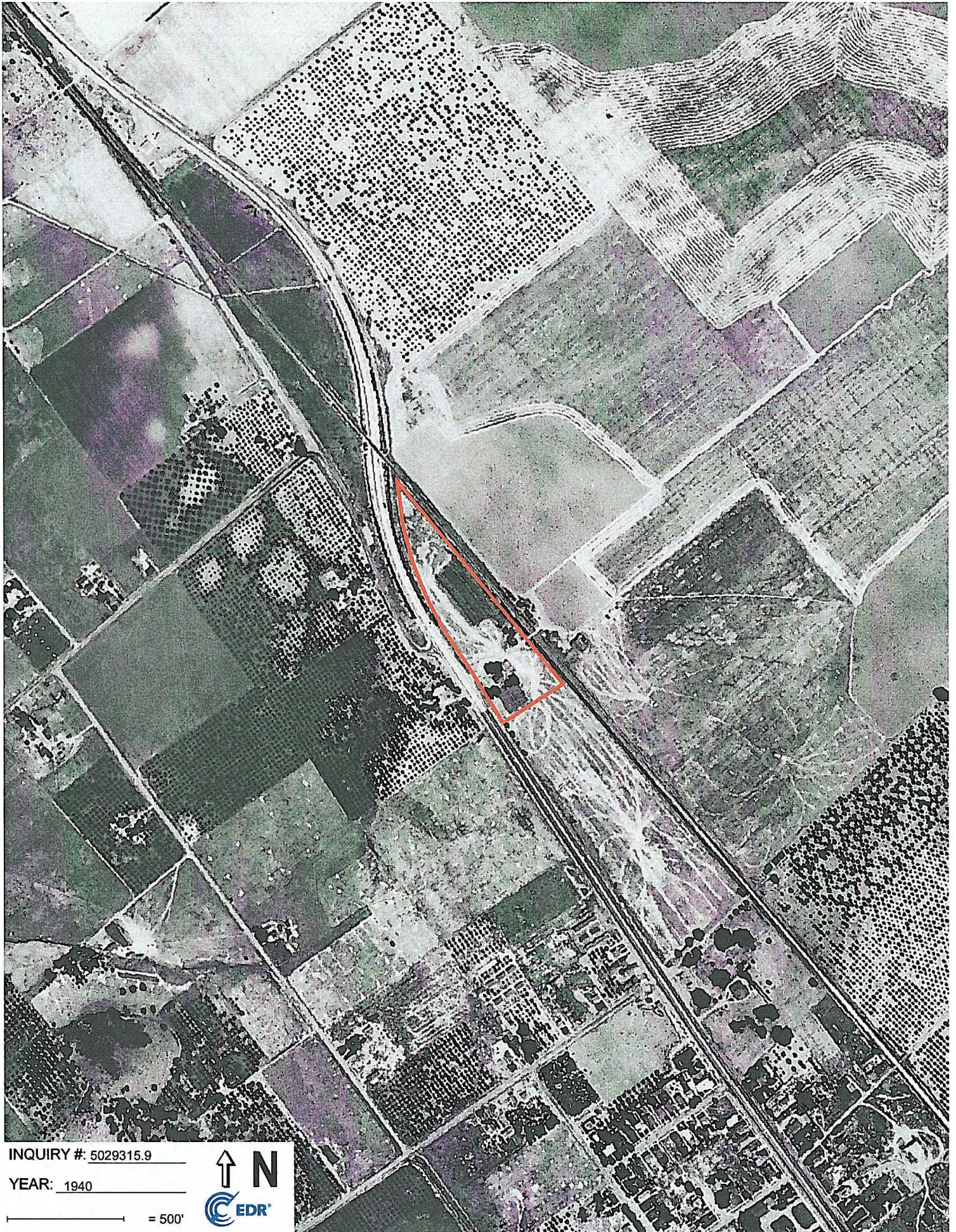


INQUIRY #: 5029315.9

YEAR: 1948

— = 500'



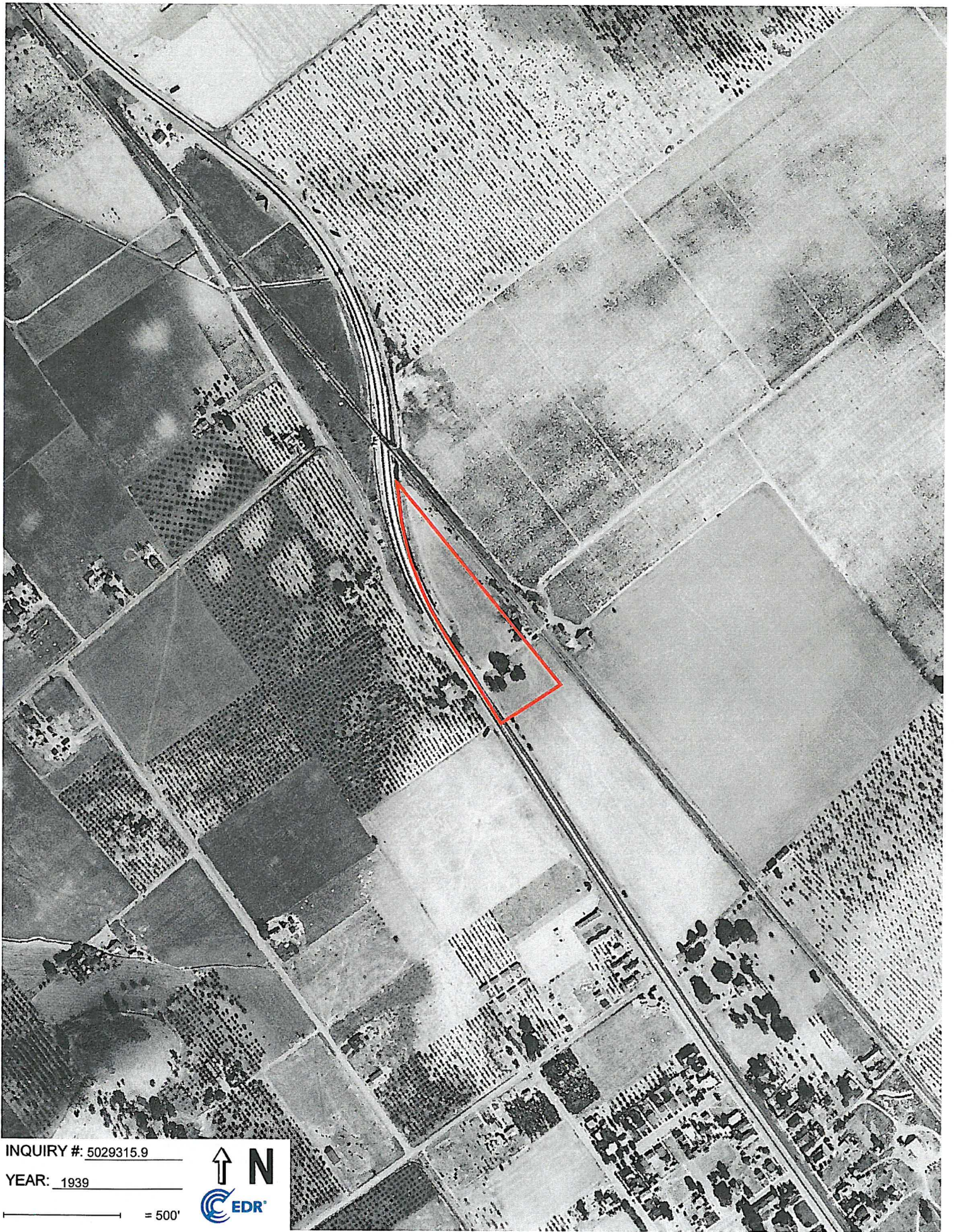


INQUIRY #: 5029315.9

YEAR: 1940

— = 500'





INQUIRY #: 5029315.9

YEAR: 1939

— = 500'



CV - Morgan Hill D

18110 Monterey Road
Morgan Hill, CA 95037

Inquiry Number: 5029315.5
August 23, 2017

The EDR-City Directory Image Report

TABLE OF CONTENTS

SECTION

Executive Summary

Findings

City Directory Images

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OR DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2017 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc. or its affiliates is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

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.

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.

<u>Year</u>	<u>Target Street</u>	<u>Cross Street</u>	<u>Source</u>
2013	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Cole Information Services
2008	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Cole Information Services
2003	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Cole Information Services
1999	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Cole Information Services
1995	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Cole Information Services
1992	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Cole Information Services
1986	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Haines Criss-Cross Directory
1980	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Haines Criss-Cross Directory
1975	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Haines Criss-Cross Directory
1970	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Haines Criss-Cross Directory

RECORD SOURCES

EDR is licensed to reproduce certain City Directory works by the copyright holders of those works. The purchaser of this EDR City Directory Report may include it in report(s) delivered to a customer. Reproduction of City Directories without permission of the publisher or licensed vendor may be a violation of copyright.

FINDINGS

TARGET PROPERTY STREET

18110 Monterey Road
Morgan Hill, CA 95037

<u>Year</u>	<u>CD Image</u>	<u>Source</u>
<u>MONTEREY</u>		
1986	pg A21	Haines Criss-Cross Directory
1986	pg A22	Haines Criss-Cross Directory
1980	pg A23	Haines Criss-Cross Directory
1980	pg A24	Haines Criss-Cross Directory
1975	pg A25	Haines Criss-Cross Directory
1975	pg A26	Haines Criss-Cross Directory
1970	pg A27	Haines Criss-Cross Directory

MONTEREY RD

2013	pg A1	Cole Information Services
2008	pg A5	Cole Information Services
2003	pg A9	Cole Information Services
1999	pg A12	Cole Information Services
1995	pg A16	Cole Information Services
1992	pg A18	Cole Information Services

MONTEREY ST

2013	pg A2	Cole Information Services
2008	pg A6	Cole Information Services
2003	pg A10	Cole Information Services
1999	pg A13	Cole Information Services
1995	pg A17	Cole Information Services
1992	pg A20	Cole Information Services

FINDINGS

CROSS STREETS

No Cross Streets Identified

City Directory Images

Target Street

✓

Cross Street

-

Source

Cole Information Services

MONTEREY RD 2013

20000 LAND & SEA BOAT & RV STORAGE

MONTEREY ST 2013

17916 SHEYLA AGUILAR
17920 PRONTO AUTO REPAIR
17925 JOSE RIVERA
17935 ADOLFO CAMPOS
CHRISTOPHER AVALOS
NINETTA FOWLKES
17937 ALEJANDRO MOZO
ARTURO ARENAS
FRANK SARINANA-JR
IRMA VALDOVINO
JORGE CASTILLO
JOSE GALLARDO
LEOBARDO RICARDO
MARTHA GONZALEZ
NORMA ALVAREZ
ROBERTO GARCIA
SANTOYU NAVARRO
17939 ALEJANDRO CRISPIN
CYNTHIA MONTENAYOR
JULIAN MESA
MARIA MORENO
17941 FERNANDO JARQUIN
HECTOR LOPEZ
JOAQUIN MONCADA
LORENA SANDOVAL
LORETO HERNANDEZ
MARY JUAREZ
MERCEDES VARGAS
MIGUEL ESTRADA
17945 A1 MUFFLER & BRAKE
STAR MOTOR IMPORTS
17975 ANTONIO MARTINEZ
ARELY OLIVA
BRITTNEY MONTEZ
CARLOS ALTAMIRANO
CLEDA AGATEP
D DAVIS
DAN CAPPS
DONNA ECK
EDITH GARAY
EVA CAMARILLO
FRANCES GLYNN
GLORIA LUNA
HEATHER CABRAL
HECTOR MARQUEZ
JACK PEMBERTON
JOHN KINSEY
JOSE PALOMERA
JUANA URENDA
KATIE GATCH

MONTEREY ST 2013 (Cont'd)

17975 MARIA FRANCO
MINERVA GONZALEZ
MOTORCYCLE SAFETY TRAININ
NAGALI GARCIA
OSCAR ZUNIGA
PHYLLIS OLSON
RAMIRO MEJIA
ROGELIO GAMEZ
ROSARIO JUAREZ
SHARON TALLEY
TAMMY TAYLOR
TERRY ROWLAND
VINTAGE HARDWOOD FLOORS
17995 ROCCIS AUTOBODY
18005 JON SCYOC
18025 DIVERSIFIED SOLUTIONS
SILICON VALLEY SELF STORAGE
STORAGEMART
18055 ACACIA MOBILE HOME PARK
ALFREDO HERNANDEZ
BARBARA BINETTE
BERENICE JIMENEZ
BETTY BORDEN
DAVID MORRIS
DENELLE PEREGRINA
EMMANUEL EPIGMENIO
ERNESTO HERRERA
EZEKIEL SANDOVAL
FERNANDO HERRERA
FRANCISCO ZAPIEN
HECTOR MARTINEZ
JANET HOWELL
JON VANSYOC
JULIAN LANDEROS
LORENZO URISTA
NANCY GREISS
OMAR GUZMAN
OMAR PEREZ
PATRICK SULLIVAN
RICHARD PUTANO
RODOLFO RUIZ
RUBEN HERRERA
STEVEN KEEN
VICTOR PARRA
VINCENTE MIRELES
18060 OCCUPANT UNKNOWN
18105 RONALD PERRY
18502 OCCUPANT UNKNOWN
18506 OCCUPANT UNKNOWN
18510 OCCUPANT UNKNOWN

MONTEREY ST 2013 (Cont'd)

18514	OCCUPANT UNKNOWN
18518	OCCUPANT UNKNOWN
18522	OCCUPANT UNKNOWN
18526	OCCUPANT UNKNOWN
18530	OCCUPANT UNKNOWN
18534	OCCUPANT UNKNOWN
18538	OCCUPANT UNKNOWN
18542	OCCUPANT UNKNOWN
18546	OCCUPANT UNKNOWN
18550	OCCUPANT UNKNOWN
18585	ARTISTRY IN HAIR
	STARBUCKS COFFEE
	US HOME OWNERSHIP
18605	MORGAN HILL FUEL LP
18960	CALIFORNIA SALVAGE & AUTO PARTS
	CALIFORNIA TOWING COMPANY
18970	BURKES UPHOLSTERY
	UHAUL NEIGHBORHOOD DEALER
18980	MMS BEHAVIORAL DAY PROGRAM
19010	ERIC TANIS

Target Street

✓

Cross Street

-

Source

Cole Information Services

MONTEREY RD 2008

20000 LAND & SEA BOAT & RV STORAGE

MONTEREY ST 2008

17916 ERNESTO MARTINEZ
MARCO LOPEZ
17920 ALFA AUTOMOTIVE & TOWING
MORGAN HILL AUTO WORKS
17925 JOSE RIVERA
17935 CONSUELO BERNAL
KURT KRONAWITTER
MARIA AVALOS
NINETTA FOWLKES
PETRA HERNANDEZ
RAUL GARCIA
SCOTT FORSTNER
17937 ARTURO ARENAS
BENITEZ HERNANDEZ
CLAUDIA GUZMAN
DIAZ ALBERTO
FELIX ALBARRAN
IRMA VALDOVINO
MAYKO DIAZ
MAYRA BENIT
SUE SOMERS
17939 GUILLERMIN HERRERA
JOSE RIVERA
MATHYS MARSELIS
NANCY LEON
RAY DAENZER
VERONICA ESPARZA
17940 COMMUNITY ADULT SCHOOL
17941 LORETO HERNANDEZ
17945 A1 MUFFLER & BRAKE
STAR MOTOR IMPORTS
17960 MORGAN HILL UNIFID SCHOOL DST
17975 ABEL WOLFSON
ALEX FILAV
ALFONSO MUNOZ
ANGELICA BECERRA
ANNA URIBE
ANTONIO MARTINEZ
CARLOS ALTAMIRANO
CLEDA AGATEP
DAN CAPPS
DAVID BROOKS
FRANCES GLYNN
GABRIEL MENDOZA
GARY ANDERSON
GENOVEVA COBARUBIAS
GLORIA SARMIENTO
GUADALUPE ARVIZU
HECTOR MARQUEZ
HONORATO HERRERA

MONTEREY ST 2008 (Cont'd)

17975 JACK PEMBERTON
JOSE PALOMERA
JUAN HERNANDEZ
JUAN LOPEZ
KARINA SANCHEZ
KIMBERLY KINSEY
LEON BASS
LEONARD LUZENSKI
MANUEL GOMEZ
MARIE MCDONALD
MINERVA GONZALEZ
PEDRO BRISENO
PHYLLIS OLSON
RAQUEL RODRIGUEZ
REBECA GONZALES
ROBERTO LOPEZ
SILVIA MEJIA
STEPHANIE SILVA
THERESA RUIZ
THOMAS POLLEY
17980 AMBER CLARK
17995 ROCCIS AUTO COLLISION INC
18005 JON SCYOC
18025 AXIOM & ASSOCIATES INVESTIGATING
BATHROOM DR
CREATIVE CAPITAL
DIVERSIFIED SOLUTIONS
OVERLAND DEVELOPMENT CORP
OVERLAND SELF STORAGE
18055 ABRAHAM VICTORINO
ACACIA MOBILE HOME PARK
ALFONSO EVERETT
ALVIN SILVEIRA
AMANDA KEITH
ASUNCION URISTA
BARBARA BEERS
CESAR MAYA
CINDY HERNANDEZ
CRISTINE BONGOLAN
ERASMO EPIGMENIO
EZEKIEL SANDOVAL
GEORGE MCCLOUD
JAMES HUGHES
JERRY YOUNG
JESSE LEMA
JOY HAWKINS
JOY PEREGRINA
MANUEL HERRERA
NANETTE VIERA
OCTAVIO OCHOA

MONTEREY ST 2008 (Cont'd)

18055 OMAR GUZMAN
 PATRICIA HERNANDEZ
 PATRICIA MENDOZA
 RICHARD PUTANO
 RODOLFO RAMIREZ
 ROXANN FRANCO
 SONRISE MAINTENANCE
 STEVE SANTOS
 STEVEN KEEN
 VICENTE MIRELES
 VICTOR PARRA
18060 OCCUPANT UNKNOWN
18960 BILLSLIST COMNET ORG
 CALIFORNIA SALVAGE & AUTO PARTS
 CALIFORNIA TOWING CO
18970 BURKES UPHOLSTERY
 U HAUL
18980 MMS BEHAVIORAL DAY PROGRAM
19010 ERIC TANIS

Target Street

✓

Cross Street

-

Source

Cole Information Services

MONTEREY RD 2003

20000 GARRY KRAUSE & SONS
JW DRILLING & SONS



-

MONTEREY ST 2003

17916 DIEGO MENDOZA
ERNESTO MARTINEZ
17920 ALFA AUTO
ALFA RADIATOR
MYRIAM GIRALDO
U HAUL CO
17925 OCCUPANT UNKNOWN
17935 GRACE MALDONADO
KURT KRONAWITTER
NINETTA FOWLKES
17945 A 1 MUFFLER & BRAKE
ADVANCED WHEELS
EDWARD PURDIN
17960 CENTRAL HIGH SCHOOL
17965 ARTESANIAS JALISCO
JALISCO ARTESANIAS
17975 ABEL WOLFSON
ANNA URIBE
BRADLEY RUSSMAN
CARLOS ALTAMIRANO
CARMEN MENDOZA
DAN CAPPS
DONNA ECK
ELMER BASS
FRANCISCO VARGAS
GUADALUPE ARVIZU
H RENDON
HILL HAVEN MHP
JOSEPH HINCHBERGER
JUAN HERNANDEZ
KIMBERLY KINSEY
L FRYE
MANUEL GOMEZ
MARIA LARA
RODNEY GATCH
SANDRO LOPEZ
SERGIO GARCIA
SEVERINO MENDOZA
THERESA RUIZ
17995 OCCUPANT UNKNOWN
ROCCIS AUTO BODY
ROCCIS AUTO COLLISION INC
18025 AXIOM & ASSOCS INVESTIGATIONS
CAMP INVESTIGATIONS
CREATIVE CAPITAL
DELBERT H WELKER
HARRY WELKER
LARRY WILLARD
OVERLAND PLAZA SELF STORAGE
VALERIE BENEDICT

MONTEREY ST 2003 (Cont'd)

18055 ACACIA MOBILE HOME PARK
ALFRED HERNANDEZ
ALVIN SILVEIRA
ANTONIO RIVERA
BARBARA BEERS
CHARLES KEEN
ERASMO EPIGMENIO
EZEKIEL SANDOVAL
FELIX HERNANDEZ
FERNANDO HERRERA
G SANDAVOL
GERARDO CARRANZA
HECTOR HERRERA
HERSHEL PETTY
HP CONSTRUCTION
JACOB VILLAREAL
JEANETTE PETRIZ
JERRY YOUNG
L VILLAREAL
MARTIN ALVAREZ
MIGUEL NUNEZ
PAUL DELGADILLO
RICHARD PUTANO
RODOLFO RAMIREZ
RONALD SPORS
RUBEN HERRERA
SANTIAGO VICTORINO
SCOTT BURNS
SONRISE MAINTENANCE
STAR SMILES
TONI MUDJAB
18060 NANCY SUTTER
18625 GUILLERMO ANDRADE
18960 CALIFORNIA SLVG & AUTO PARTS
CALIFORNIA TOWING CO
OCCUPANT UNKNOWN
18970 BURKES UPHOLSTERY
OCCUPANT UNKNOWN
U HAUL CO
18980 BIG BOAT INC
NOAHS ARK PRESCHOOL & DAY CARE
OCCUPANT UNKNOWN
19010 ERIC TANIS

Target Street

✓

Cross Street

-

Source

Cole Information Services

MONTEREY RD 1999

20000 MORGAN HILL AUCTION COMPANY
SOUTH COUNTY AUTO RV DISPLAY
YUBA SAN JOSE INCORPORATED

MONTEREY ST 1999

✓
-
✓

17916 ALICIA MARTINEZ
MARCO LOPEZ

17920 ALFA RADIATOR SERVICE
MORGAN HILL AUTO WORKS

17925 JOSE RIVERA
OCCUPANT UNKNOWN

17935 GARCIA PEREZ
KURT KRONAWITTER
MARIA AVALOS
PETRA HERNANDEZ
SCOTT FORSTNER

17937 CINDIA MONCADA
CLAUDIA GUZMAN
FELIX ALBARRAN
IRMA VALDOVINO
JACOB VELASQUEZ
NORMA ALVAREZ
SUE SOMERS

17939 IRMA LAZCANO
VERONICA ESPARZA

17941 HERNAN FLORES

17945 A 1 MUFFLER & BRAKE
ACOUSTECHS SOUND & COMMUNICATIONS
FRONTIER APPLIANCE
STAR MOTOR IMPORTS

17960 MORGAN HILL UNIFIED SCHOOL DISTRICT CTRL HIGH SCHOOL

17965 E M F MOTORCYCLE PARTS & ACCESSORIES

17975 ANNA URIBE
CARLOS ALTAMIRANO
CELIA WOLFSON
CLEDA AGATEP
DAN CAPPS
DAVID BROOKS
ELODIA MARTINEZ
EVA CAMARILLO
FRANCES GLYNN
GARY ANDERSON
GENOVEVA COBARUBIAS
GUADALUPE ARVIZU
HECTOR MARQUEZ
HONORATO HERRERA
JACK PEMBERTON
JOSE PALOMERA
JUAN HERNANDEZ
JUAN LOPEZ
JUANA URENDA
KARINA SANCHEZ
KIMBERLY KINSEY
LEON BASS
LUISANGELA NAJERA

MONTEREY ST 1999 (Cont'd)

17975 MANUEL GOMEZ
MARIE MCDONALD
MARTHA GONZALEZ
MINERVA GONZALEZ
PEDRO BRISENO
PHYLLIS OLSON
RAMIRO MEJIA
RAQUEL RODRIGUEZ
ROBERTO LOPEZ
THERESA RUIZ
THOMAS POLLEY
17980 AMBER CLARK
17995 ROCCIS AUTO BODY
18005 JON SCYOC
18025 OCCUPANT UNKNOWN
OVERLAND PLAZA SELF STORAGE
18055 ACACIA MOBILE HOME PARK
ALEX ALONZO
ALFONSO EVERETT
ALVIN SILVEIRA
ANGEL JIMENEZ
ASUNCION URISTA
CRISTINE BONGOLAN
ERASMO EPIGMENIO
EZEKIEL SANDOVAL
FILIBERTO GARCIA
FRANCISCO ZAPIEN
GERARDO CARRANZA
JAMES HUGHES
JERRY YOUNG
JESSE LEMA
JOY HAWKINS
M MCKEE
MANUEL HERRERA
MANUEL QUIRARTE
NANETTE VIERA
NUBIA HERNANDEZ
OMAR GUZMAN
PATRICIA HERNANDEZ
PATRICK SULLIVAN
RICHARD PUTANO
RODOLFO RAMIREZ
SHARAN DEBLASIO
STEVE SANTOS
STEVEN KEEN
VICENTE MIRELES
VICTOR PARRA
18105 CAROLYN PERRY
18625 EL CAPRI RESTAURANT
18960 CALIFORNIA SALVAGE & AUTO PARTS

Target Street

✓

Cross Street

-

Source

Cole Information Services

MONTEREY ST 1999 (Cont'd)

18960 CALIFORNIA TOWING COMPANY
18970 BURKES UPHOLSTERY
U-HAUL COMPANY INDEPENDENT DEALERS
18980 NOAHS ARK PRESCHOOL & DAY CARE
19010 ERIC TANIS

MONTEREY RD 1995

17795 PRUDENTIAL INSURANCE CO
WHYUSA
17825 TERRY LEWIS REAL ESTATE
17865 BUSHWACKER
COSMIC GENERAL STORE
CULINARY EXPRESS
DUCK PEN
GAETANO CUSTOM TAILORING
JUST FOR YOU CATERING
PRETTY NAIL
QUALITY SHOE REPAIR
ROSES 4U
SORCIS BARBER SHOPPE
17890 MORGAN HILL APARTMENTS
17895 AUTOMOTIVE LOCK & KEY
17905 MORGAN HILL SHELL
17910 DOMS CAFE
17920 ALFA RADIATOR SVC
17945 A 1 MUFFLER & BRAKE
ACOUSTECHS SOUND & COMM
FRONTIER APPLIANCE
R CS LAWN MOWER SHOP
17965 BELL NURSERY & FLORIST
17995 K & A MARKET
ROCCIS AUTOBODY
18025 OVERLAND PLAZA SELF STORAGE
18055 ACACIA MOBILE HOME PARK
18625 EL CAPRI
18960 CALIFORNIA SALVAGE & AUTO PRTS
CALIFORNIA TOWING CO
18970 BURKES UPHOLSTERY
U HAUL CO
19040 RANCHO MOTEL
19100 ALS BARBER SHOP
19120 MADRONE FOOD MARKET
MADRONE MEAT MARKET
19140 ERNIES BAR & GRILL
19190 COMMUNITY GARAGE
COMMUNITY TOWING
19210 SINALOA CAFE
19240 ECHO MOTEL
19280 SOTELO BROTHERS FORKLIFT INC
19380 ALPINE RECREATION
19490 COCHRANE PLAZA CHEVROLET GEO
19500 B & P MARINE
20000 AVERY, PRESTON

MONTEREY ST 1995

✓
-
17916 MARTINEZ, ALICIA
17925 OCCUPANT UNKNOWNN
17935 FISHER, THOMAS
17945 OCCUPANT UNKNOWNN
17960 CENTRAL HIGH SCHOOL
17975 ACCORNERO, L
AGATEP, CLEDA JR
ALTAMIRANO, MARY
BLANCHARD, V
BRISENO, DOLORES
CHAPARRO, CARMEN
COLLINS, N
DAMRON, C D
ECK, A T
FRYE, LOUISE M
GARCIA, RAMON B
GATCH, RODNEY
GOMEZ, MANUEL
MENDOZA, JOSE M
OCHOA, ARGEL
OLSON, KENNETH E
RUIZ, TERESA E
SONDOSSI, M
THORNE, S
URIBE, ANNA L
WHITFIELD, M A
WHITLEY, M
18005 HEINTZ, GARY
18055 RAMIREZ, RODOLFO
19010 TAPIA, JORGE L

MONTEREY RD 1992

17795 PRUDENTIAL INS THE
17810 M H U S D ACCNTS
MORGN HL SC ADULT
17825 TERRY LEWIS RL EST
17835 GOOD FOOD CO THE
THE GOOD FOOD CO
17865 BUSHWACKER THE
CITIZENS AGNST RECL
COSMIC GENERAL STR
DEPOT DELI&DINING
DUCK PEN THE
GAETANO CSTM TLRNG
HAIR STOP THE
NORTHSIDE MARKET
PRETTY NAIL
QUALITY SHOE REPAIR
17875 C OF C
17880 CASTELLON, TERESA
GIL, ROBERT
IBANEZ, MARIA
MARTIN, DOUGLAS L
MARTINEZ, ROMANA
MERONEY, LELAND
MORGN HL APARTMENTS
OBOZLO, OSELA
SANTIAGO, DAVID
VELASCO, COBIAN E
WILSON, GRANT
17895 AUTOMTC LOCK&KEY
SORCIS BARBER SHOPP
17905 MORGN HL SHELL
17910 DOMS CAFE
17916 MARTINEZ, ALICIA
17920 ALFA RADIATOR
17925 ORTIZ, MANUEL
17945 A 1 MUFFLER&BRAKE
ACOUSTECHS SOUND
COOKS UPHOLSTERY
E M F MTRCYCLE PRS
FRONTIER APPLIANCE
R CS LAWN MOWER SHP
TCHAMOURIAN, TONY
17960 MORGN HL SC CENTRAL
17965 BELL NURSERY
17975 ACCORNERO, L
AGATEP, CLEDA JR
ALTAMIRANO, MARY
CASTANEDA, MARTHA
CHAPARRO, CARMEN
COLLINS, N

MONTEREY RD 1992 (Cont'd)

17975 DAMRON, C D
ECK, A T
FRYE, L M
GARCIA, RAMON B
GAXIOLA, LUIS
GOMEZ, MANUEL
LEPRE, STEVE
OLSON, KENNETH E
RUIZ, TERESA E
SONDOSSI, M
URIBE, ANNA L
17995 K&A MARKET
ROCCIS BODY SHOP
18025 OVERLAND PLAZA STRG
18055 ACACIA MOBILE HM PK
AVALOS, A
BEERS, R
18455 S G MAYNE TERMITE
18625 EL CAPRI
18960 CA SALVAGE&AUTO PRT
CA TOW COMPANY
18970 BURKES UPHOLSTERY
19020 GUYS HIGHWAY TAVERN
19040 RANCHO MOTEL
19100 ALS BARBER SHOP
19120 MADRONE FOOD MARKET
19140 ERNIES BAR&GRILL
19190 CA ST AUTOMOBILE
PONZINIS CMNTY GAR
19210 SINALOA CAFE
19240 ECHO MOTEL
19280 SOTELO BROS FORKLFT
19400 SOUTH VLY AUTOMOTVE
19490 DENT CLINIC THE
DON MURTOS CHVRLET
THE DENT CLINIC
19500 B&P MARINE
COURTYARD RSTRNT
20000 BEST RV
BILL DORAN COMPANY

Target Street

✓

Cross Street

-

Source

Cole Information Services

MONTEREY ST 1992

18055 HADJIMOHAMMADI, MASSOUD
MARTINEZ, JOSE
MARTINEZ, RICARDO
PARRA, VICTOR

MONTEREY 1986

MONTEREY RD 95037
MORGAN HILL

60	XXXX	00	
118	GOODMAN JERRY G	779-0127	4
118	XXXX	00	
120	*HANDMADE TILE WORKS	779-7707	5
140	CORNELIUS B J	779-2206	4
	*RECREATIONAL VEHICLE	779-3173	7
	*RECREATNL VHCL SERV	227-1644	8
547	XXXX	00	
550	*BONNER PACKING CO	629-1242	1
	*BONNER PACKING CO	779-8343	2
	GALLAGHER T L	779-3731	+8
	*MARRA BROS DSTRBTNG	778-3380	1
561D	HEAD LLOYD	463-0598	3
562	*CONTRACTORS PAVING	463-0508	5
9765	KWONG YIP HING	463-0226	5
9860	*SHELTON DRAINAG PRD	463-0800	+6
10000	*B&V TRAILER&BARN	778-2635	5
	*B&V TRLR&BARN SALES	463-0104	4
10400	WASECA CAROL	779-3698	
	WASECA JOHN	779-3698	
10980	*LORETTA CNTRY KCHN	778-1219	+6
11230	GUERRERO RICH	778-5058	+6
14815	BAUM J MARTIN	779-7833	9
14855	TORRES FRANK Y	779-2661	
15055	GIDDING L	778-2472	5
	*SILVER SADDLE	778-1946	4
15075	*FULLERS SADDLE SHOP	779-0808	3
15080	*WAGON WHEEL MOTEL	779-5390	3
15100	AIELLO JOS	779-1576	0
	GONZALEZ JESUS	779-6280	5
	*UESUGI FARMS INC	779-2078	
15135	EBADYPOUR BEHROOZ	779-4611	5
	HARROLD DAVID	779-0775	
	HARROLD JUDY	779-0775	4
15145	*FLOWERS BY WILSON	779-9145	
	*WILSONS FLORISTS	779-9145	
A	*RAPUNZELS HAIR	779-1880	5
15147	WILSON JAMES A	779-4584	7
15155	BAUGHMAN RICHARD	779-9445	2
	MCJUNKIN MARY L	779-3305	
	MCJUNKIN THOMAS A	779-3305	
	WARREN K J	778-1593	4
15160	LEE TIM	779-4219	4
	VASQUEZ SALLY	778-3611	5
	VIZCARRA ARNULFO	779-1388	5
15220	XXXX	00	
15285	*B J LANDSCAPING	779-0366	1
15355	SPECHT ANN	779-2644	
	SPECHT REUEL	779-2644	
15365	*OUTER LIMITS	778-5722	+6
15540	*BRANON REALTY	779-7306	8
	*BRANON REALTY	226-2642	5
	*DAL CONCRETE	779-6035	8
	HOOPER GERALD	778-5085	+6
	*LOU MAR CONSTRUCTIN	778-3696	5
15570	WIENS THOMAS A	779-3926	
15585	BUILDING		
	*ADAIR WISE&ASSOCIE	779-8449	+6
	*BIRR WILSON&CO INC	779-6263	+6
	*EAGLE&COURTNEY	779-5101	+6
	*FIDELITY UNION INS	779-0300	4
	*GOLDEN EAGLE	779-9168	4
	*LAZZARINI E J CPA	779-9168	8
	*MASON ANITA KELL	225-3512	
	*MASON ANITA REALTOR	779-2065	4

MONTEREY 1986

1565	1566	1567	1568	1569	1570	1571	1572	1573	1574	1575	1576	1577	1578	1579	1580	1581	1582	1583	1584	1585	1586	1587	1588	1589	1590	1591	1592	1593	1594	1595	1596	1597	1598	1599	1600	1601	1602	1603	1604	1605	1606	1607	1608	1609	1610	1611	1612	1613	1614	1615	1616	1617	1618	1619	1620	1621	1622	1623	1624	1625	1626	1627	1628	1629	1630	1631	1632	1633	1634	1635	1636	1637	1638	1639	1640	1641	1642	1643	1644	1645	1646	1647	1648	1649	1650	1651	1652	1653	1654	1655	1656	1657	1658	1659	1660	1661	1662	1663	1664	1665	1666	1667	1668	1669	1670	1671	1672	1673	1674	1675	1676	1677	1678	1679	1680	1681	1682	1683	1684	1685	1686	1687	1688	1689	1690	1691	1692	1693	1694	1695	1696	1697	1698	1699	1700	1701	1702	1703	1704	1705	1706	1707	1708	1709	1710	1711	1712	1713	1714	1715	1716	1717	1718	1719	1720	1721	1722	1723	1724	1725	1726	1727	1728	1729	1730	1731	1732	1733	1734	1735	1736	1737	1738	1739	1740	1741	1742	1743	1744	1745	1746	1747	1748	1749	1750	1751	1752	1753	1754	1755	1756	1757	1758	1759	1760	1761	1762	1763	1764	1765	1766	1767	1768	1769	1770	1771	1772	1773	1774	1775	1776	1777	1778	1779	1780	1781	1782	1783	1784	1785	1786	1787	1788	1789	1790	1791	1792	1793	1794	1795	1796	1797	1798	1799	1800	1801	1802	1803	1804	1805	1806	1807	1808	1809	1810	1811	1812	1813	1814	1815	1816	1817	1818	1819	1820	1821	1822	1823	1824	1825	1826	1827	1828	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	1839	1840	1841	1842	1843	1844	1845	1846	1847	1848	1849	1850	1851	1852	1853	1854	1855	1856	1857	1858	1859	1860	1861	1862	1863	1864	1865	1866	1867	1868	1869	1870	1871	1872	1873	1874	1875	1876	1877	1878	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2443	2444	2445	2446	2447	2448	2449	2450	2451	2452	2453	2454	2455	2456	2457	2458	2459	2460	2461	2462	2463	2464	2465	2466	2467	2468	2469	2470	2471	2472	2473	2474	2475	2476	2477	2478	2479	2480	2481	2482	2483	2484	2485	2486	2487	2488	2489	2490	2491	2492	2493	2494	2495	2496	2497	2498	2499	2500	2501	2502	2503	2504	2505	2506	2507	2508	2509	2510	2511	2512	2513	2514	2515	2516	2517	2518	2519	2520	2521	2522	2523	2524	2525	2526	2527	2528	2529	2530	2531	2532	2533	2534	2535	2536	2537	2538	2539	2540	2541	2542	2543	2544	2545	2546	2547	2548	2549	2550	2551	2552	2553	2554	2555	2556	2557	2558	2559	2560	2561	2562	2563	2564	2565	2566	2567	2568	2569	2570	2571	2572	2573	2574	2575	2576	2577	2578	2579	2580	2581	2582	2583	2584	2585	2586	2587	2588	2589	2590	2591	2592	2593	2594	2595	2596	2597	2598	2599	2600	2601	2602	2603	2604	2605	2606	2607	2608	2609	2610	2611	2612	2613	2614	2615	2616	2617	2618	2619	2620	2621	2622	2623	2624	2625	2626	2627	2628	2629	2630	2631	2632	2633	2634	2635	2636	2637	2638	2639	2640	2641	2642	2643	2644	2645	2646	2647	2648	2649	2650	2651	2652	2653	2654	2655	2656	2657	2658	2659	2660	2661	2662	2663	2664	2665	2666	2667	2668	2669	2670	2671	2672	2673	2674	2675	2676	2677	2678	2679	2680	2681	2682	2683	2684	2685	2686	2687	2688	2689	2690	2691	2692	2693	2694	2695	2696	2697	2698	2699	2700	2701	2702	2703	2704	2705	2706	2707	2708	2709	2710	2711	2712	2713	2714	2715	2716	2717	2718	2719	2720	2721	2722	2723	2724	2725	2726	2727	2728	2729	2730	2731	2732	2733	2734	2735	2736	2737	2738	2739	2740	2741	2742	2743	2744	2745	2746	2747	2748	2749	2750	2751	2752	2753	2754	2755	2756	2757	2758	2759	2760	2761	2762	2763	2764	2765	2766	2767	2768	2769	2770	2771	2772	2773	2774	2775	2776	2777	2778	2779	2780	2781	2782	2783	2784	2785	2786	2787	2788	2789	2790	2791	2792	2793	2794	2795	2796	2797	2798	2799	2800	2801	2802	2803	2804	2805	2806	2807	2808	2809	2810	2811	2812	2813	2814	2815	2816	2817	2818	2819	2820	2821	2822	2823	2824	2825	2826	2827	2828	2829	2830	2831	2832	2833	2834	2835	2836	2837	2838	2839	2840	2841	2842	2843	2844	2845	2846	2847	2848	2849	2850	2851	2852	2853	2854	2855	2856	2857	2858	2859	2860	2861	2862	2863	2864	2865	2866	2867	2868	2869	2870	2871	2872	2873	2874	2875	2876	2877	2878	2879	2880	2881	2882	2883	2884	2885	2886	2887	2888	2889	2890	2891	2892	2893	2894	2895	2896	2897	2898	2899	2900	2901	2902	2903	2904	2905	2906	2907	2908	2909	2910	2911	2912	2913	2914	2915	2916	2917	2918	2919	2920	2921	2922	2923	2924	2925	2926	2927	2928	2929	2930	2931	2932	2933	2934	2935	2936	2937	2938	2939	294
------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	-----

MONTEREY 1980

MONTEREY RD	95013 CONT	MONTEREY RD	95037 CONT	MONTEREY RD	95037 CONT
NO # BROTHERS PRIDE	483-0121 9	C PATCHEN JOHN	779-3282 9	FRONTIER ELECTRIC	583-2410 0
NO # BROTHERS BUZZ PRODC	779-2883 9	15855 XXXX	00	FRONTIER ELECTRIC	578-7860 0
NO # CHARLES BUZZ INN	483-0545 7	15855 XXXX	285-7800 9	ORTIZES CASA DE FLRE	779-8175 0
NO # CHUCKS 24 HR CAFE	483-0526 8	15855 SUPERIOR MOTOR SV	779-3079 4	KIRCHNER SALES	779-3311 6
NO # COYOTE ANCO SERVICE	483-0606 7	15870 BRYAN JIM L	779-6905 8	MERINO GEORGE	779-3488 00
NO # COYOTE HENRY ACRES	483-0121 9	CALIF ST FRSTRY DIV	779-2121 1	APARTMENTS	779-4507 4
NO # COYOTE MARKET	483-0717 7	WGRH HL RFL FIRE DS	779-2348 8	DEAN JAMES A	779-7837 9
NO # COYOTE SERVICE	483-0777 0	B PISANO GREG	779-7308 9	LEDORF ELLA	779-6940 0
NO # DESJARDONS LOUIS	483-0163 8	AFFILIATED BROKERS	779-8426 0	POLSTON JAS	779-6311 0
NO # ENCINAL SC MRGN HLL	483-0618 7	BAIN REALTY	227-5823 0	ROBINSON DANL	779-6320 0
NO # FROST EARL	483-0292 0	FIELDS DICK	779-8426 0	WALLACE LEONA	779-4527 9
NO # JEWETT JOHN	483-0580 7	KENNE EVERETT	779-7281 6	ZAMORA LEO J	779-4527 9
NO # KENS COYOTE MKRT	483-0719 0	M H ENGINEERING	226-3050 9		
NO # MALECH EARL GARAGE	483-0630 7	M H ENGINEERING CO	779-7381 8		
NO # MALECH RAY	483-0549 7	MCCLEINTOCK WILLIAM	779-7381 6		
NO # MADULA F WHOLE LMBR	483-0515 7	READ SUSAN	779-8426 0		
NO # PARKER L VNETTE	483-0178 8	SILACCI GARY	779-8426 0		
NO # RIVERSIDE CLUB BAR	483-0625 7	15886 XXXX	00		
NO # STEIN WALTER J	483-0238 8	15715 COUNTRY PRINTERS	779-2288 8		
NO # SUGISHITA T	483-0533 7	15725 GRAY CHAS	779-9277 0		
NO # TOMYS CHEVRON SERV	483-0643 8	15925 XXXX	00		
NO # US PSTL SV COYOTE	483-0686 8	15945 XXXX	00		
25 BUS 10 RES 9 NEW		15975 BOBS EQUIP RENTALS	779-9175 3		
		SPENCER RENTAL SERV	779-9175 8		
		21 MILE AUTO WCRKS	779-5403 9		
		ANGELOS RESTAURANT	779-0670 9		
		HILLYW GROCERY	779-8428 7		
		CHURCH OF JC LATTER	779-2370 0		
		FARMERS INSURANCE	779-1875 9		
		HB ASSOCIATES	779-0244 0		
		MOORE SERVICE	779-5522 6		
		OMNIPRISE INC	779-7321 9		
		BLACK DAVID	779-7325 0		
		GREGG DANL W DVM	779-7325 7		
		MRGN HL ANML SVCS	779-7325 8		
		SPRINGDAY D L	779-7325 8		
		D C WELDING	779-1553 8		
		AMERICAN FLOOR CVR	779-3174 0		
		WACKERLY MARLAND	779-6551 9		
		FARLEY STATION	779-5500 8		
		BO PLUMBING	779-6330 0		
		BOSS REPAIR	779-4642 9		
		J STORKANS FINE FRN	779-9026 0		
		STORKANS J	779-9026 9		
		16205 XXXX	00		
		16210 HOLIDAY MOTEL	779-2666 2		
		MOUSTIRATS CHARLES	779-2666 2		
		16219 XXXX	00		
		16225 LAM WINDOW CO	779-4141 0		
		NATI AUTO GLASS	779-4141 9		
		16270 XXXX	00		
		16275 KARLAN NICK	779-2952 0		
		THE VILLA	779-9707 0		
		VILLA THE	779-9707 0		
		SHO WHITE DRIVE INN	779-6511 1		
		PETROLINE SLS SERV	779-3011 8		
		HAIR EM THE	779-2519 9		
		B MAM SHOES	779-2622 0		
		B PARADISE INN MTL	779-1454 0		
		16315 MRGN HL TIRE SHOP	779-2881 8		
		16320 HILL J M	779-7700 8		
		BONDIS BARBER SHOP	779-2781 4		
		VALDEZ BROS U HAUL	779-7385 9		
		CARDENAS ISAS	779-7420 7		
		BROOKS RAWLEIGH L	779-9385 0		
		16370 XXXX	00		
		16375 BUILDING	00		
		CANDY PARK TRAVEL	779-6495 9		
		CNTY FLAIR INTERIOR	224-0172 0		
		COUNTY FLAIR INTERIORS	779-6308 0		
		NATURAL FOOD WORKS	779-7764 3		
		RECORD ADDICT THE	779-3000 9		
		ROBERTS PHOTOGRAPH	779-0455 0		
		S VALLEY OFF EQUIP	779-5590 9		
		S VLY OGC SUPPLIES	620-1711 0		
		STRAW HAT PIZZA	779-0668 9		
		THE RECORD ADDICT	779-3000 9		
		UNIFORM MORGAN HILL	779-4744 0		
		YUM YUM TREE	779-1488 9		
		C BOOK GALLERY THE	779-0444 0		
		L DESIGN AWARDSATROPH	779-1444 0		
		16375 SWANNS FIXIT SHOP	779-4396 5		
		16380 COUNTRY STR GROCERY	779-5512 4		
		16390 MARSHALL BERTHA E	779-2356 0		
		16410 TACKROOM SADDLE SHP	779-2526 0		
		16415 XXXX	00		
		16430 DEELINE FASHIONS	779-7386 8		
		BONHAN DENNIS	779-3091 0		
		EW SEMI	779-6316 0		
		INSTITUTE FOR LTRCY	779-6886 0		
		SHAW GEN S	779-1337 0		
		UNITED COUNTRY HOME	779-1159 0		
		WEEKS RESEARCH ASSC	779-0856 0		
		16433 CIMARRON HOMES INC	226-5970 0		
		FELTY SYNGALIN	779-2181 3		
		FIDELITY SAVINGSALNS	779-0651 0		
		NOR CAL INSRNC SRVS	779-0685 0		
		SOUTH EAT BSSNS ASS	779-0686 0		
		TITLE ASSTRUST CO	779-2128 9		
		16435 XXXX	00		
		16450 BI ASSOCIATES	779-6859 0		
		CAMERON KI	779-5500 0		
		16480 ALPINE TRLR PK	779-3920 0		
		AMARAL PAUL	779-1572 0		
		CARL LEO	779-3774 0		
		COYLEWIM	779-9073 8		
		DART KAREN	779-2535 0		
		DUXALL JAMES	779-0740 0		
		MUNOZ JESUS	779-3623 4		
		SWANN MAX	779-4597 4		
		WILLIAMS CHARLES B	779-2866 6		
		16480 RACKLEYS PIZZA REST	779-6882 8		
		16490 XXXX	00		
		16510 RANREZ JOSE	779-1441 8		
		16520 XXXX	00		
		16525 SOUTHSIDE GROCERY	779-2377 2		
		16530 ROUND TABLE PIZZA	779-6338 9		
		16545 BURGER QUEEN	779-3557 0		
		16555 SOUTHSIDE ANTIQUES	779-1666 9		
		16560 AAW DRIVE IN	779-9250 0		
		16570 XXXX	00		
		16580 CASTANEDA RICHARD	779-2329 0		
		16590 JELLY R	779-3885 5		
		16595 MAH USED CARS	779-2848 0		
		16605 VATES B E	779-6219 0		
		16610 XXXX	00		
		16615 LOPEZ J	779-1185 0		
		16620 FELLOSERO M	779-3439 8		
		16625 MRGN HL BIKE SHOP	779-4015 8		
		16630 RITTS CRAFTERS	779-7538 9		
		16635 HAIR BRIGADE THE	779-8419 9		
		16640 JOANNS HAIR BRIGADE	779-8419 9		
		16645 TOBI TV	779-3935 0		
		16650 FRONTIER APPLIANCE	779-9144 5		
		16655 FRONTIER ELECAPLNC	578-7650 5		
		16675 XXXX	00		
		16685 HOODES CECIL	779-2067 4		
		16690 XXXX	00		
		16695 MESSINA GEORGE	779-7406 0		
		16700 VALUE REALTY	224-8811 0		
		16705 ORGAN HILL	224-8811 0		
		16710 TH REAL ESTATE PLAC	779-2173 0		
		16715 THE REAL EST PLACE	683-4840 9		
		16720 VALUE REALTY	779-2173 9		
		16725 VALUE REALTY	683-4840 9		
		16730 CATS MEOW THE	779-1370 9		
		16735 THE CATS MEOW	779-1370 9		
		16740 MRGN HL LIQUORS	779-3611 8		
		16745 XXXX	00		
		16750 XPHA BETA CO	779-9825 2		
		16755 DAVES A & D	779-5551 8		
		16760 B GS MOBILE SERVICE	779-7106 6		
		16765 RAGIOS AUTO CARE	779-2211 4		
		16770 SC MRGN HL	779-5246 0		
		16775 XXXX	00		
		16780 CHRISTIAN SON SOC	779-2596 4		
		16785 GAVILAN BANK	779-7374 7		
		16790 TRIVY STREET SHELL	779-5518 7		
		16795 FIG LEAF FACTORY	779-0292 0		
		16800 MONTEREY SAVINOS LN	779-3139 7		
		16805 FORT A KEYES	779-1331 8		
		16810 FORT KEYES	779-3311 8		
		16815 XXXX	00		
		16820 MORRAN HILL ALANO C	779-6790 0		
		16825 UNITED METHODIST CH	779-4044 0		
		16830 XXXX	00		
		16835 CULINIA GERALD	779-4625 5		
		16840 MRGN HL FLORIST	779-4311 5		
		16845 SOUTH VLY PAYING	779-4625 8		
		16850 DAVIS VIOLET	779-7051 0		
		16855 CREATIVE TRAVEL WRL	779-9185 0		
		16860 BUTCHER BOY MEATS	779-4424 8		
		16865 XXXX	00		
		16870 BARBARA LJOHN	779-2251 0		
		16875 XXXX	00		
		16880 DRIVE IN LIQUOR	779-2525 5		
		16885 MRGN HL DRV IN LOR	779-2525 8		
		16890 ARCHITCTRL RENDERING	779-6222 7		
		16895 BURDICK N AIAAASC	779-0456 8		
		16900 COUNTRY HAIRTAG	779-8421 0		
		16905 COUNTRY REALTY	779-4124 0		
		16910 COUNTRY REALTY	225-2654 0		
		16915 COUNTRY RLY PRAPRTY	779-6304 9		
		16920 GREENWELL PAUL	779-6222 6		
		16925 HERFURTH PROPERTIES	779-9288 0		
		16930 PARSONS R CHL CONTR	779-4124 7		
		16935 COZY CORNER	779-0723 0		
		16940 SCOOTERS ICE CREAM	779-3533 4		
		16945 MASSEI M	779-2651 0		
		16950 SAUCEDO ENGRACIA	779-1794 9		
		16955 CHAMBER OF COMMERCE	779-9444 0		
		16960 MORGAN HILL CHMBROF	779-9444 0		
		16965 A JEWELRY STORE THE	779-4197 0		
		16970 SPACEPLAN	779-0030 0		
		16975 VALENTINES RESTAURA	779-1990 9		
		16980 XXXX	00		
		16985 ELTORO SHOP	779-3224 0		
		16990 REX BARBER SHOP	779-2214 0		
		16995 MISTER SCISSORS	779-4474 5		
		17000 SCISSORS MR	779-4474 0		
		17005 M H TAVERN	779-9082 0		
		17010 ACEVEDO JEWELERS	779-2014 5		
		17015 ACEVEDO JEWELERS	779-2014 5		
		17020 FRAMEMAKER	779-4306 9		
		17025 HAURYTS TY	779-4131 0		
		17030 MISSION TRL GRMT FD	779-3101 0		
		17035 VALLEY LCKRAFRZN FD	779-3101 2		
		17040 CORNER CORNER	779-4424 8		
		17045 GALLERY ARTS	779-3181 0		
		17050 AL STATIS CORN DRG	779-3181 0		
		17055 CORNER DRUG	224-0501 0		
		17060 SOUTH CO REALTY	779-3146 8		
		17065 SOUTH COUNTRY REALTY	225-8121 9		
		17070 MICHAELS	779-4149 8		
		17075 NOB HILL MICHAELS	779-4149 5		
		17080 THE OUTFIT	779-4108 7		
		17085 MERLE NORMAN CSMTCS	779-8222 6		
		17090 NORMAN MERLE CSMTCS	779-8222 6		
		17095 MRGN HL LIGHTING	779-7338 9		
		17100 GRANADA THEATRE	779-2992 0		
		17105 SERGIO AUGEMENT	779-1082 8		
		17110 THEATRE GRANADA	779-2992 3		
		17115 LAUREL ANTONIO F MD	779-2164 9		
		17120 MERCY MEDCL CLNC	779-2164 0		
		17125 MORGAN HILL MERCY MD	779-2164 0		
		17130 WILLARD REALTY	779-3161 0		
		17135 ABIGD ANTONIO DR	227-3223 9		
		17140 FISHER JACK DR	779-7348 5		
		17145 HUANG FRANK F MD	779-7348 8		
		17150 JERGE LARRY DR	779-7348 9		
		17155 KRINSKY MARTIN DR	779-7348 8		
		17160 KRINSKY MARTIN S	225-7626 6		

MONTEREY 1980

MONTEREY RD.		95037 CONT	MONTEREY RD.		95037 CONT
	EBERT DICK INTRRS	778-7400 X		BIRCHOFF JOHN	778-1983 9
17550	GARCIA & HENRY	778-9148 X		FORBES HENRY JR	778-9652 5
	GARCIA HENRY ENGRS	778-9148 X		GARCIA FERRIE R	778-7480 9
	GARCIA JR J	778-9148 X		GONZALES GUILLEMO	778-4419 0
	WERRY W M	778-9148 X		GUILLEN RAMON	778-7647 0
	GARCIA BL BLU PRNT CO	778-9148 X		JARENEZ J L	778-1323 0
17560	XXXX	00		KENNEDY BOBBI	778-1267 0
	MITCHELL ROBERT	778-9194 7		LEON ROGER	778-6202 0
17570	THICHININ DR	778-9194 7		LOZA ROSA	778-4366 9
	THICHININMARTINE	778-9194 7		OJEDA ALVARO	778-7480 9
17590	WELLS FARGO BANK	778-3156		RAMOS SALVADOR	778-9448 X
17599	NORTHERN CAL SVCL LN	778-9181 6		ROMERO LEO	778-4472 8
	PALO ALTO SAVINGS LN	778-9181 6		ROSWAY SERVICE	778-9237 4
17600	XXXX	00	18055		
	BANK OF AMER MTSB	778-4161 3	18060	SUTTER JOHN	778-3646
	QUINTER DREW	778-4161 3	18065	DE PASQUALE F	778-3632
17630	EL CASTILLO SPR MKT	778-4130 0	18110	PETERSON JOAQUIN	778-4915 0
17640	XXXX	00		SUTTER FRANK	778-2070
	LA AUTOMOTIVE INC	683-2313 7	18125	XXXX	00
	BAM AUTOMOTIVE INC	778-2151 0	18305	XXXX	00
	BAM AUTOMOTIVE INC	226-2820 9	18305	XXXX	00
	MINTON S W	778-2151 5	18375	CORRAL ANTONIO	778-0214 0
17660	LA AUTO CLUB EMRG	778-2151 0	18455	STUCKY LEO	778-1539
	AFFILIATED BROKERS	578-8060 0	18505	LEONARD DORNALD	778-0529 0
	BURKLEYAMCADOUE	778-7666 0	18575	STUCKY NADOM	778-1539 0
	CROWE ROBERT	778-5584 8	18625	CAPRI RESTAURANT	778-3567 8
	THE WING ROOM	778-8458 8	18645	FARNWORTH REX E	778-2845 7
	MILLER PATRICIA DDS	778-6357 8		FARNWORTH TRMT CTR	268-6555 5
	THE DRAWING ROOM	778-6357 8		FARNWORTH TRMT CTR	778-7050 5
	WILLIAM L ANTHONY G DOS	778-5410 0	18720	XXXX	00
17664	XXXX	00	18920	GOSS MANUEL M	778-3068
17690	WINGOS UPHOLSTERY	778-2266 6	18930	XXXX	00
	TOWNCOUNTRY FLOWER	778-1230 9	18960	CALIF MACHINE SHP	778-8990 0
17710	XXXX	00		CALIF SALVAGEAUTO	778-9186 7
17710	COUNTRY REAL EST CO	778-0344 0		CALIF SALVAGEAUTO	227-6623 0
17720	JOHNSON CONCRETE	778-5210 9		CALIFERS OUTLINE	778-0671 0
	JOHNSON FUNERAL HME	778-5456 7	18980		
	DAL DELITE	778-5381 6	19000		
17750	WELLS FARGO CREDIT	778-9523 2	19010	WILBERT RAMON	778-7941 6
17760	CLOVE S MORTGAGE	778-9523 2	19020	PEDROTTI FRANK WIN	778-4915 0
	GOLDEN ST MTD SRY	778-4480 0	19040	VINEO J	778-2368
	SURKS KURLS	778-4992 0	19090	MAGNOLIA ERNEST	778-3217
	MEHLER HSPTL CLNC	778-5210 9	19090	LEONARD ARNOLD	778-0529 0
	PETERSON GRETCHEN	778-6303 9	19120	MADRONO FORD MKT	778-3414
17770	PETERSON GRETCHEN A	778-6303 9	19140	ERMIES BAR	778-4087 5
	ERRIS ALAN REALTY	778-8401 9	19190	COMMUNITY GARAGE	778-2833
	GARDEN WEST ETL	778-8401 9		SANFERNIS CMTY CRGE	778-4915 0
	MALECH CNSTRCTN	778-8755 0	19210	SINALOA CAFE	778-0740
	PRINTED IMAGE	778-6775 0	19220	RAMIREZ MARIA E	778-9906 0
17775	THE HORNET REALTY	778-6775 0	19230	RAMIREZ JOSE	778-9906 0
17780	DON MATLOCK	778-3178 6	19240	XXXX	00
	THE LEAN REALTY	778-3178 6	19250	CAYROL CLAYTON W	778-4060 0
	PROSPECTORS REALTY	778-0166 0	19260	XXXX	00
	PROSPECTORS REALTY	778-0166 0	19280	XXXX	00
	PROSPECTORS REALTY	225-3915 9			
17810	XXXX	00		RAINWATER SPAS	778-8479 0
	SC MRGN HL ADULT ED	778-5261		CANYON R	778-4511 0
	SC MRGN HL AST SUPT	778-5222	19400	CANYON R V SALES	225-0034
	SC MRGN HL AST SUPT	778-5223	19490	LEON TRAILER SALES	225-0034
	SC MRGN HL DSTD OFC	778-5210		HI LO TRLR SALES	441-0511 0
	SC MRGN HL DSTD OFC	778-5216	19500	SOUTH VLYT AUTOVLT	778-5859 5
	SC MRGN HL FOOD SV	778-5250		SHELLWORTH CHEVROLET	778-2138 4
	SC MRGN HL MATERIAL	778-5250		SHELLWORTH CHEVROLET	778-2138 4
	SC MRGN HL PERSONAL	778-5287	20000	COURTYARD RSTRNT	778-0532 0
	SC MRGN HL PLANNING	778-5311		KRIGIN CELLARS	778-5478 8
	SC MRGN HL PURCHSNG	778-5289		ARAC CONSTRUCTION	227-6833 0
	SC MRGN HL SPL SVS	778-5289	NO #	AFEEZ CONSTRUCTION CO	778-6336 0
	SC MRGN HL TRNSPRNT	778-5260	NO #	LANDSEA INTL	226-8855 8
	SC MRGN HL ASST SUP	778-5295	NO #	ARAGUT YRNI	463-0037 1
	SC MRGN HL CAPTRLR	778-5216	NO #	ARAC CONSTRUCTION	778-0416 3
	SC MRGN HL CRPCLM	778-5249	NO #	BARBARA SHOP	463-0563 7
	SC MRGN HL CRPCLM	778-5278	NO #	BEDAL SID	463-0239 9
17810	MORGAN HILL REALTY	778-5471 0	NO #	CORPUS B J	778-2025 0
17825	MORGAN HILL REALTY	225-2000 2	NO #	GOODMAN JERRY G	778-1297 0
17835	CARLSONS ANTIQUES	778-3767	NO #	KAWANAMI GEORGE	778-4810 31
	XXXX	00	NO #	KAWANAMI HENRY	463-0516 7
17865	CAMINE CORRAL THE	778-1432 8	NO #	PURPO VICTOR	778-3363
	END TRAIL TRADING PT	778-0191 3	NO #	PURPO VICTOR G	463-0638 7
	FARNERS INSURNG GRP	778-0338 0	NO #	R-4818	778-0127 0
	MR DWIGHT	778-3643 0	NO #	SASO D	463-0552 7
	MARTINEZ SIMON	778-3643 0	NO #	SASO KENNETH	463-0192 0
	ROCKS CLEARNSHUTXEDD	778-1644 0	NO #	SASO KENNETH	463-0513 7
	SPRICK SHACK	778-6602 8	NO #	SC MRGN HL ENCLNAL	778-5221
17875	BUSHWACKER THE	778-6602 8	395 BUS	225 RES	611 NEW
	OAK GLEN REALTY	226-5812 2	11095	GENES AUTO MART	842-4525 2
	OAK GLEN REALTY INC	778-2141 9	11425	HEFFNER MICHAEL	842-2783 0
	OAK GLEN REALTY INC	683-2141 9	11505	CHAS B	842-2783 0
17880	THE BUSHWACKER	778-6602 8	11995	RANGEL INOCENCIO	683-2245
	CRISPIN H S	778-9459 0	12185	RAMAN JAMES	683-2962 0
	LAURENCE ANDISE	778-4421 1	12205	XXXX	00
17895	ALIDE BOOKKEEPING	778-4421 1	12526	CHARO INC	683-2494 0
	ALIDE BUSINESS CTR	778-4421 1		RAN RADIAOR	683-4727 9
17905	MCKENZIE MIC	778-9703 5	12325	CHAS TRACT D	683-0181 0
17910	DOSW CAFE	00	12635	BAKER JACK D	683-4511 0
17915	HEEG AUDREY	778-0320 0		DEAR R	683-2227 8
17920	CAMINO TIERRADERA	778-1411 0	12637	XXXX	00
17925	ALLSTATE REALTY	778-5020 0	12705	XXXX	00
17930	SC MASTER PH	778-5020 0	12715	SHORES ARCONDIO	683-4393 0
17945	BEAUTIFUL DRAPEY	778-1486 9	12715	FLORILE FLEA BARN	683-4046 0
	COOKS UPHOLSTERY	778-1111 1	12716		
	LAURENCE AUTO PARTS	778-5050 0	12725	SC R TRNG STBLs	683-2066
	STEVES DIAGNOSTIC CNT	778-5244	12835	PARKER T C	683-4628 6
	SC MRGN HL CENTRAL	778-1482 8	12900	SAN MARTIN WINERY	683-2672 0
17960	BILL NURSERY	778-1482 8	12945	SC WESTERN STR	683-2469 9
17965	SC HAY MBL PRX	778-9246 4	13065	SANDOLY FARMSTR	683-2016 9
	ALTAMARAND MARY	778-3172 6	13065	XXXX	00
	BIVERT TIM	778-3172 6	13165	AT TOWING	683-0584 0
	CARLTON KAREIGH	778-3466 5		NIGHT OWL D	683-4708 9
	EXCK A T	778-3673 9	13095	XXXX	00
	EVANS BECCIE M	778-9667 6	13115	GARCIA PORFIRIA	683-2660 9
	GARCIA J A	778-6335 6		MARTINEZ J	683-0450 0
	GATCH RODNEY	778-0045 0		SWANSON KEITH E	683-2167 0
	GATCH ROY P	778-8782 8	13155	XXXX	00
	GETZ JACK EDE	778-9755 5	13165	CONTRY RPRTS	683-0549 0
	HILL HAYEN MBL PRX	778-9755 5		ENTRY THE	683-0581 0
	HILL LOYCE	778-9684 0		GAC CABINETS/ATFRES	683-4800 6
	MACKPHERSON K	778-8782 8		KASTOR DUANE A	683-4653 0
	MACDONALD B E	778-6318 9		S MOTOR AUTO BODY	683-4761 0
	MUNYON J	778-6718 9	13175	ST CLAIR MICHIGAN	683-2534 0
	OLSON KENNETH E	778-9642 4	13175	CRENEYS FVS OF CA	683-2805 0
	SC MASTER PH	778-9323 0	13195	SC WESTERN STR	683-2470 9
	ROCHE PHILIP W	778-1243 9		JASCO MARGARITA	683-2470 9
	SAPR D M	778-1243 9		MARIA MARIA	683-2492 0
	SAVERI G L	778-8560 7	13225	HEREFORD CURTIS	683-4058 0
	SCOTT VERNON	778-4461 5	13245	SANMARTIN TEXACO	683-4421 9
	SNYDER C EOW	778-4531 0	13245	XXXX	00
	ST CLOUD R V	778-1553 0	13255	XXXX	00
	UPTON HELEN	778-1553 0	13295	XXXX	00
	WHITLEY COY	778-5179 5	13305	SANMARTIN CNTRY STR	683-2393 5
17975	OLENN REALTY	225-7708 0	13325	SANMARTIN NH	683-9963 6
17985	ROCKS BOLD SHOP	778-2770 6	13335	ROCCAS MTN	683-2330
	WAYNES SERVICE CNTR	778-1800 9	13365	SANMARTIN FEEDS	683-2689 9
18005	STORAGE YARD THE	00		SOUTH CNTY FEEDS	683-0588 0
18010	APARTMENTS	00	13405	VLY EXPD AGST PRD	683-0344 0
18055	BARAZZA TERESA	778-1263 0		PRISCLLS HAIR STYL	683-2032 7
	BAUER B	778-6374 0		STODDARDS SADDLERY	683-0546 0
				TANDY LEATHER	683-0546 0

MONTEREY 1975

..MONTEREY RD 95013 CONT..
 NU # SCHWABENLAND JOHN 225-2335
 NO # SMITH TOMMY 227-3459+5
 NO # SUGISHITA T 225-2340
 NO # TONY'S CHEVRON SERV 225-2339
 NO # US POST OFFICE 226-2500 1
 * 17 BUS 12 RES 9 NEW

MONTEREY RD 95037 MORGAN HILL

118*PARSONS R GNL CONTR 779-4134+5
 119*YELLOW CAB CO 779-3311+5
 120 HUDSON OIL CO 779-9731 3
 125 XXXX 00
 230 XXXX 00
 350 XXXX 00
 510 XXXX 00
 540*FILICE EST VINEYRD 779-2611+5
 542 ARANDA FRANCISCO 226-4792 4
 548 XXXX 00
 550 ROBINSON WM F 779-7011+5
 561C CANADY MELVIN J JR 578-8899+5
 595 XXXX 00
 763 HEAGERTY AL 227-0567 2
 797 XXXX 00
 1080 XXXX 00
 1130 XXXX 00
 1255 XXXX 00
 1390*SHILLWORTH OLSEN CO225-1370 3
 1450 XXXX 00
 6120 XXXX 00
 10580 BRUNDAGE JAS W 779-7055+5
 14160 DETERRA JOHN S 779-4437+5
 14240*ABILITY WRECKERS 779-9191 2
 CLAMP MEN 779-2301+5
 14245 LIGO GEO 779-2710
 14300 XXXX 00
 14325 LEONETTI A F 779-2862
 14425*HIRAKI NURSERY 779-3910+5
 14440 AVILA JESUS T 779-2537 4
 14445 AVILAS MKT 779-2537
 14485 GARZA SOCCORRO 779-3918 4
 14520 MAGALLANEZ RITO 779-5756 3
 14540 XXXX 00
 14546 XXXX 00
 14550 XXXX 00
 14560 SPECHT BYRON D 779-2098 3
 14600*FAST GAS 779-9052 3
 14715*NOB HILL MICHAELS 779-4149+5
 14720*ERNIES SERVICE STN 779-3630
 ROUSH ERNEST 779-2690
 14735 XXXX 00
 14855 TORRES FRANK Y 779-2661
 14910 PERCY MANUEL 779-9223 2
 15055 SASSER M I 779-5676+5
 A SASSER M Z 779-9785
 A SILVER SADDLE THE 779-9785 2
 B STEFANEL BETTY 779-3698
 15075*BRAWLEY JOHN JR 779-4194 4
 *COUCH WAYNE CO 779-4194 4
 *MODULAR HOMES 779-4194 4
 15080 SKAGGS JUANITA 779-4023+5
 WILSON J O 779-3995 4
 15100 VESUGI GEO 779-2078
 15136 XXXX 00
 15145*FLOWERS BY WILSON 779-9145 4
 *SHIPP REALTY 779-3167+5
 *WILSON'S FLORISTS 779-9145 4
 15155 MCJUNKIN THOS A 779-3305 3
 NASH BILL 779-4405 4
 NASH WM C 779-5715 4
 B BAUGHMAN RICHARD 779-9445
 15160 DORWARD JOHN 779-2679 4
 15170 SIMPSON LORI A 779-5928+5
 15190 NEWTON E 779-9644 3
 15205 XXXX 00
 15220 SPEEGLE BILL 779-9480
 15280 SPEEGLE W 779-2919
 *WALLEY PUMPEMACH SH779-2919 2
 15345 XXXX 00
 15355 SPECHT ANNA 779-2644 4
 *SPECHT REUEL B 779-3977
 15365*OUR PLACE 779-2643+5
 15540 ZINN J A 779-3944+5
 15570 BRIONES MANUEL G 779-5868 4
 WIENS THOS A 779-3926 2
 15655*WORTH CTRY MBL HSE 226-3050 4
 15665*WORTH CO MBL HM SL779-3079 4
 15670*CALIF STE FRSTRY DV779-2121
 CASTLEMAN DAN 779-4239 4
 HATSON WM J 779-7402+5
 15686 XXXX 00
 15715 XXXX 00
 15925 FLETCHER JERRY 779-4251
 15945 XXXX 00
 15975*BOBS EQUIP RENTALS 779-9175 3
 15985*21 MILE AUTO WRCKRS 779-5463 4
 15995*21 MLE HSE PRDC MKT779-2383
 16010*QUEEN OLIVE STAND 779-3929+5
 16060 XXXX 00
 16155*LITTLETONS MACH SHP779-3883+5
 16170 XXXX 00
 16180*FAT ALBERTS 779-9894+5
 16190*KIRBY CO MORGAN HL 779-5454+5
 16210*HOLIDAY HOTEL 779-2666 2
 MOUSTIRATS CHAS 779-2666 2
 16214 XXXX 00
 16225*ARAS BROS BODY SHP779-5182+5
 16270 TERRIBLE HERBST 779-9778
 16275*VILLA THE 779-9707
 16290*SNO WHITE DRIVE INN779-9511
 16295*PETROLANE GAS SERV 779-3011
 16310*CARMENS BEAUTY SLN 779-2519+5
 16315*MORGAN HL TIRE SHOP779-2888 4
 16320 XXXX 00
 16330*BRONDIS BARBER SHOP 779-3788 4
 16340*XAVIER SADDLE SHOP 779-2526 4
 16360 BAUMERT K 779-4651 4
 16365 BROOKS RAWLEIGH L 779-9386
 16370 XXXX 00
 16380*SWANNS FIXIT SHOP 779-4396+5
 16390*COUNTRY STR GROCERY779-5512 4
 16410*A 1 AUTO WRECKERS 779-4430+5

..MONTEREY RD 95037 CONT..
 *ACTION MTRCYCLE RPR779-7591+5
 B MARSHALL BERTHA E 779-2356
 16415*LAPEL CAFE 779-9773 3
 16435 XXXX 00
 16440*ALPINE MOTEL&TRLR 779-3920
 DUVALL JAS 779-3683 4
 MUNOZ JESUS 779-4597 4
 16490*CRACKLEYS PIZZACREST 779-9807 4
 16510 XXXX 00
 16595 RAMIREZ JOSE 779-5100 3
 16720*WORLD OIL CO NO 52 779-9840 4
 16725 NAZZAL ISSA 779-7488+5
 *SOUTHSIDE GROCERY 779-2377 2
 16745*BURGER QUEEN 779-3557
 16755*RED DRN FLASTENRSRY779-3520+5
 16760*ACW DRIVE IN 779-9250
 16779 XXXX 00
 16780 CASTANEDA RICHARD 779-9329
 16790 JELLY R 779-3885
 16795*WCH USED CARS 779-3848
 16805 DAVID PAUL 779-7485+5
 16810 XXXX 00
 16815*CABLE TV 779-4158 3
 *NATIONWIDE CABLESVN779-4158
 16820 PELISSERO M 779-3489
 16825*MORGAN HILL BIKE SH779-4015 3
 16830 XXXX 00
 16835 XXXX 00
 16845*FRONTIER APPLIANCES779-9144+5
 *FRONTIER ELECCAPLNC578-7660+5
 *FRONTIER ELECTRIC 779-9141+5
 16855*SOIL TESTING SERV 779-2020+5
 16860 XXXX 00
 16870 MERINO GEO 779-3488
 16875*DRIFTWOOD NO TWO 779-3033
 16875...APARTMENTS
 CIOLINO JOHN 779-9660
 DEAN JAS A 779-4507 4
 KRUGH MABLE 779-3701 4
 RAYES NASH 779-4374+5
 SHOCKLEY JIMMY 779-4014 4
 WALLACE LEONA 779-3420
 WIMER ROD A 779-3444+5
 16875.....
 16879 HODGES CECIL 779-2067 4
 16880 DITTO BEN W 779-3693 4
 16881 XXXX 00
 16890 MESSINA GEO 779-2406
 16915*NORTHERN CAL SVGLN779-9181 3
 *PALO ALTO SAVNGSLN779-9181 3
 16925*TITLE INSGTRUST CO 779-2138 3
 16935*MORGAN HL LIQUORS 779-3611+5
 16940*MORGAN HILL AUTO MSH779-9850 3
 16955*ALPHA BETA ACME MKT779-9825 2
 16960*HAYNES ARCO 779-2770 3
 16995*ESPINOSA SERV CNTR779-4818 4
 17015*FRAGGIOS AUTO CARE 779-2211 4
 17020*MORGAN SC MORGAN HL779-5246 4
 17045 TOSTE JAS 779-4772+5
 17080*CHRISTIAN SNL SOC 779-2696 4
 17085 XXXX 00
 17090*GEORGES SHELL SERV 779-5018 4
 17100 HASTINGS DOYLE E 779-4786+5
 17105 XXXX 00
 17130 ERVASTI H 779-4366 3
 17175*UNITED METHODIST CH779-4044
 17190 XXXX 00
 17200*GREYHOUND BUS LINES779-9769
 *SOUTH CO TRNSPRATN779-5192 4
 17205 DAVIS VIOLET 779-3705
 17240 XXXX 00
 17245*HUDSON INTERIORS 779-2688+5
 17265 BARBAGLIA JOHN 779-2251
 17270 STEGALL FRANK 779-9942
 17280 XXXX 00
 17290*DRIVE IN LIQUOR 779-2525+5
 *MORGAN HL DRIVE LQR779-2525+5
 17295 QUINDT ROY 779-5681+5
 17300*COZY CORNER 779-9734
 17305*CARD TREE THE 779-7000+5
 17315 MASSER MARIE MISS 779-2651
 17320*PERKINS GLASS 779-5011+5
 17330 XXXX 00
 17335*MORGAN HILL C OF C 779-9444 3
 17335*ELTORO SHOP 779-3224
 17340*PREX BARBER SHOP 779-2214
 17350*MR SCISSORS 779-4474+5
 *SCISSORS MR 779-4474
 17365*H TAVERN 779-9082
 17367*ACEVEDO JEWELERS 779-2014+5
 *ACEVEDO JEWELERS 779-2014+5
 17375*HOUSE OF DESIGN 779-9026 3
 17380*HAURY'S TV 779-4131
 17385*MISSION TRL CRMT FD779-3101
 *VALLEY LCKREFRN FD779-3101 2
 17390*TELFERS FAMILY SHOE779-4916
 17395*AL STATTIS CRNR ORG779-3181
 *CORNER DRUGS 779-3181 2
 17400*SOUTH CTRY REALTY 226-8131 4
 *SOUTH COUNTY REALTY779-3146 3
 17415 XXXX 00
 17420*FIRST AM TITL GRNTY779-4181 3
 17430*KANAWYER FLOORS 779-4319+5
 17440*GRANADA THEATRE 779-2992
 *THEATRE GRANADA 779-2992 3
 17450*MORGAN SC CENTRL HI779-5244 4
 17455*WILLARD ANN REALTY 227-3229 2
 17470*MAST APPLIANCES 779-3171
 17485*MORGAN HL CHEVRON 779-5614 4
 17490*DOWNTOWN HARDWARE 779-3133 4
 *RUG DOCTOR RENTS 779-3133+5
 *VALS AQUARIUM 779-5814 4
 17500*LUMS RESTCOFFEE SH779-5834 4
 17505*FOURNIER M REALTOR 779-2121 2
 *FOURNIER MORRIS 225-2161 1
 *MORRIS FOURNIER 779-2727
 17510*MORGAN HL CTY COURT779-2133 2
 *SANTA CLR CO JUDCL 779-2133 4
 17515*JANES GLADIS M 779-3350 2
 *JANIES APPAREL SHOP779-3350
 17520*BLACK HGR CO 779-6131+5
 17530*SOUTH VLY BLUE PRNT779-2433+5
 17535*JACKS STEAK HOUSE 779-9726
 17540 XXXX 00

..MONTEREY RD 95037 CONT..
 17550*GARCIA J R 779-9148 4
 *GARCIAHENRY ENGRS779-9148 4
 HENRY W K 779-9148 4
 17560*YIN YANG WATER BED 779-3173+5
 17575 DOMINO FREDRIC J 779-9194+5
 TICHININ BRUCE 779-9194 4
 17590*WELLS FARGO BANK NA779-3156
 17599 XXXX 00
 17600 XXXX 00
 17605*BANK OF AMER NTC&A 779-4161 3
 17620*GUNTER BROS FEED 779-3136
 17630*EL CASTILLO SPA MKT779-4310
 17645*BOYDS ARCO 779-4913 3
 17650*A A CALIF ATO ASM779-2151 3
 *BEM AUTOMOTIVE 779-2151 3
 *BEM AUTOMOTIVE INC 683-2313+5
 *MINTON S W 779-2151+5
 *NATL AUTO CLB RD SV779-2151+5
 17660 MACVICAR ROBINA 779-2494 3
 17664 XAVIER JIM L 779-9550 4
 17680*WINGOS UPHOLSTERY 779-2260
 17710 JOHNSON EDWIN P 779-3463
 17720 JOHNSON CHRIS 779-7424+5
 JOHNSON EDWIN P JR 779-3000 3
 *JOHNSON FUNERAL HME779-3225
 17735*PATIO FREEZE 779-9815+5
 17755 CASTILLO CRISTOBAL 779-9526 2
 17765 BOULWARE R GREGORY 779-4287+5
 17775 XXXX 00
 17780*DEYOUNG MILDRED 779-9292 3
 *MILDREDS ANTIQUE SH779-9292 2
 17795*MAIOS AUTOMOTIVE SV779-4710+5
 17825 DEJESUS TERESA 779-4887
 17835*CARLSONS ANTIQUES 779-3767
 17860*OLD HMSTO ANTIQUES 779-3798 2
 *WALGREENS HMSTO ANTQ779-3798 3
 17865*SPENCE MOTEL 779-7166+5
 17875*DOSSETTI JOHN 779-7444+5
 *DAK GLEN REALTY 779-2141+5
 *WINN INSURANCE AGCV779-7444+5
 17880...MORGAN HILL MTLCTR
 LEITZKE JUANITA H 779-5980+5
 MORALES ROSIE E 779-3678+5
 *MORGAN HL MTLCTR 779-3264 4
 TYRREL AMELIA 779-3301 4
 17880...
 17895 XXXX 00
 17905*VIEIRAS SHELL SERV 779-3838+5
 17910*DOMS CAFE 779-9703+5
 17915 ZAMORA LEO J 779-4837+5
 17916 HINRICH MARK 779-7433+5
 ROSS LEON 779-5855+5
 17920*PIONEER PUMPEWELL 779-4010+5
 *R X ENTERPRISES 779-7454+5
 17925*LEIMAS REALTY 779-2400
 17935*ROYAL MOTEL 779-9214 2
 17945*CERAMICS BY D 779-2241+5
 *COOKS UPHOLSTERY 779-7111+5
 *GAYILAN AUTO PARTS 779-4188 4
 *MOORE SERVICE 779-5522+5
 *NOB HILL HEATGMETL779-3139 3
 17975...HILL HAVEN MBL PK
 BLANCARTE M M 779-7167+5
 BUTLER F E 779-3067+5
 COPELAND DONALD L 779-2421+5
 CUSTER M M 779-9927 4
 ECK A L 779-3466+5
 EVANS TOM 779-3673 4
 FRYE L M 779-9667+5
 GERLACK ED 779-2057
 HATTABAUM SAM 779-9516+5
 HERNANDEZ DAVID 779-4802 2
 *HILL HAVEN MBL PRK 779-7654+5
 *JOHNSON M J 779-5865+5
 KUHN NORMAN D 779-5679 4
 LINDSAY DWIGHT E 779-5842+5
 MCCORMICK W H 779-4514+5
 MCMAHON B E 779-2947 3
 MENDOZA FRANK A 779-4255
 MURPHY GAYLORD 779-4933
 ROCHE PHILIP W 779-9431
 ROMERO LEON 779-4472+5
 SARRI O M 779-2622+5
 SNYDER C EDW 779-4461+5
 SPINK RALPH 779-3344
 STECLOD RUTHELLA 779-4531+5
 WALLACE ELIZABETH 779-9248 3
 WHITLEY CGY 779-5179 4
 17975.....
 17995*ELTORO MOTORS 779-9166 4
 *ROCCIS AUTO BODY 779-9090+5
 18040 XXXX 00
 18055...APARTMENTS
 CUMMINGS ALLEN 779-4333+5
 DAFFERN ATHIE 779-5752 4
 FORBES HENRY JR 779-9652+5
 FORBES PENNY 779-9018 4
 FORD CLARA FRANCES 779-5481+5
 HOSTETLER PERCY J 779-5979+5
 HOWE ROBT D 779-2776 2
 LOPEZ MICHAEL M 779-5550+5
 NAJERA D L 779-7553+5
 STOREY DAVID 779-3279 4
 *SUBWAY SERVICE 779-9377 4
 18055.....
 18060 SUTTER JOS 779-3646
 18105 VIOLA PASQUALE F 779-3832
 18110 SUTTER FRANK 779-2070
 B PEREIRA JOAQUIN 779-4915
 18195 DINZILLO ART 779-3394 2
 18225*POPPA ROY 779-3395
 18305 XXXX 00
 18375 LINDSAY JOHN M JR 779-9607
 18455 MOON N D 779-2060
 18515 DUNN MICHAEL E 779-4267 3
 18625*CAPRI RESTAURANT 225-7071+5
 18645 ARZAGA JOSE E 779-9429
 18665*FARNWORTH TRMT CTRL268-6655+5
 *FARNWORTH TRMT CNTRL779-1050+5
 18720 LEONARD ARNOLD 779-9066
 18920 GOMES MANUEL M 779-3068
 18930 AMARAL JOAO 779-9648 4
 DIAS FRANK 779-2858+5
 SEQUEIRA ANTONIO A 779-5043 2

MONTEREY 1975

..MONTEREY RD 95037 CONT..
 18960*CALIF SLVGE&AUTO PRT227-6633 2
 *CALIF SLVGE&ATO PRT779-9186+5
 18980 RICHERT SCOTT 779-4457+5
 RICHERT WALTER S 779-7144+5
 19000*FARMERS OUTLET 779-9824+5
 19010 VILLARRUEL RAMON 779-5929+5
 19020 XXXX 00
 19040 MINEO CHAS 779-2368
 19080 MAGINCALDA ERNEST 779-3217
 19100*ALS BARBER SHOP 779-3331
 19120*MADRONE FOOD MKT 779-3414
 19140*ERNIES BAR 779-4087+5
 19190*COMMUNITY GARAGE 779-9717
 *PONZINIS CMNTY GRGE779-9717 2
 19210*SINALOA CAFE 779-9740
 19240 XXXX 00
 19250 CARROLL CLAYTON W 779-4060 3
 19260 JOAQUIN JOS J 779-3612
 19280*MORGAN HL CYCL SLVG578-0672+5
 *MORGAN HL MOTORCYCL779-5884+5
 19380 XXXX 00
 19400*SOUTH VLY AUTOMOTVE779-5959+5
 19490*SHELLWORTH OLSON 779-2136 4
 19500*CELLAR THE 779-4314 2
 *PEDRIZZETTI WINE SH779-4512 3
 NO # ARAGUZ TRINI 227-3592
 NO #*BATTAGLIA PACKING 226-6248 4
 NO # COVARRUBIAS J 578-7462+5
 NO # HEAD LLOYD 227-0450 4
 NO # JARAMILLO CRUZ 225-1048+5
 NO # KAWANAMI GEO 779-4810 3
 NO # KAWANAMI HENRY 225-1240
 NO #*MORGAN SC ENCINAL 779-5221 4
 NO # PUPPO VICTOR C 225-2337
 NO # PUPPO VICTOR 779-3363
 NO # ROBINSON GEO 225-0773
 NO # SASO A D 225-2552
 NO # SASO KENNETH 225-1094
 NO # SASO VINCENT D 225-2552
 NO # YOKOI TAKEO 779-3069
 * 183 BUS 210 RES 113 NEW

MONTEREY 1970

MONTEREY RD 95037 MORGAN HILL

561D HEAD LLOYD 227-0450
 1110*CAL SALVG&AUTO PRS227-6633
 1450*DIVISION OF FORSTRY227-8360
 16410*GENERAL AUTO WRCKNG225-6431
 17560*HOGUE B BODY SHOP 255-4776
 NO # ARAGUZ TRINI 227-3592
 NO #*BATTAGLIA PACKING 225-4275
 NO #*KAISER SAND&GRAVEL 225-2066
 NO # KAWANAMI HENRY 225-1240
 NO # MCKINLEY WM C 225-6573
 NO # PUPPO VICTOR C 225-2337
 NO # ROBINSON GEO 225-0773
 NO # SASO A D 225-2552
 NO # SASO KENNETH 225-1094
 NO # SASO VINCENT D 225-2552
 NO # WILLIAMS ROBT V 225-9355
 * 6 BUS 10 RES

MONTEREY RD N 95037 MORGAN HL

1390*SHELLWORTH T CHVRLT225-1030
 *TOM SHELLWORTH CHEV225-1030
 NO # ADRAGNA LEO L 225-1619
 NO #*HENRIETTA RNCHO PRD225-8328
 NO #*THREE CROWN LAND CO225-8795
 NO # WILLIAMSON BIRGER 225-8795
 * 4 BUS 2 RES

MONTEREY RD S 95037 MORGAN HL

763 HEAGERTY AL 227-0567
 * 0 BUS 1 RES

Appendix G

LABORATORY ANALYTICAL REPORT



Stantec Consulting Corporation
15575 Los Gatos Boulevard Building C
Los Gatos, California 95032
Tel: (408) 356-6124
RE: CV-Morgan Hill D

Work Order No.: 1708207

Dear Kyle Emerson:

Torrent Laboratory, Inc. received 6 sample(s) on August 28, 2017 for the analyses presented in the following Report.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.

Torrent Laboratory, Inc. is certified by the State of California, ELAP #1991. If you have any questions regarding these test results, please feel free to contact the Project Management Team at (408)263-5258; ext 204.

A handwritten signature in blue ink, appearing to read "Belinda Vega", with a long horizontal stroke extending to the right.

Belinda Vega
Vice President of Operations

August 31, 2017

Date



Date: 8/31/2017

Client: Stantec Consulting Corporation

Project: CV-Morgan Hill D

Work Order: 1708207

CASE NARRATIVE

No issues encountered with the receiving, preparation, analysis or reporting of the results associated with this work order.

Unless otherwise indicated in the following narrative, no results have been method and/or field blank corrected.

Reported results relate only to the items/samples tested by the laboratory.

This report shall not be reproduced, except in full, without the written approval of Torrent Analytical, Inc.



Sample Result Summary

Report prepared for: Kyle Emerson
Stantec Consulting Corporation

Date Received: 08/28/17

Date Reported: 08/31/17

HA-1-1

1708207-001

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results</u>	<u>Unit</u>
Arsenic	SW6010B	1	0.15	1.3	5.62	mg/Kg
Lead	SW6010B	1	0.12	3.0	6.65	mg/Kg

HA-2-1

1708207-002

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results</u>	<u>Unit</u>
Arsenic	SW6010B	1	0.15	1.3	5.05	mg/Kg
Lead	SW6010B	1	0.12	3.0	35.7	mg/Kg
4,4-DDE	SW8081B	1	0.19	2.0	11.6	ug/Kg
4,4-DDT	SW8081B	1	0.13	2.0	12.7	ug/Kg

HA-3-1

1708207-003

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results</u>	<u>Unit</u>
Arsenic	SW6010B	1	0.15	1.3	4.27	mg/Kg

HA-4-1

1708207-004

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results</u>	<u>Unit</u>
Arsenic	SW6010B	1	0.15	1.3	5.55	mg/Kg
Lead	SW6010B	1	0.12	3.0	11.8	mg/Kg

HA-5-1

1708207-005

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results</u>	<u>Unit</u>
Arsenic	SW6010B	1	0.15	1.3	4.09	mg/Kg
Lead	SW6010B	1	0.12	3.0	3.19	mg/Kg

HA-6-1

1708207-006

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results</u>	<u>Unit</u>
Arsenic	SW6010B	1	0.15	1.3	5.59	mg/Kg
Lead	SW6010B	1	0.12	3.0	59.2	mg/Kg



SAMPLE RESULTS

Report prepared for: Kyle Emerson
Stantec Consulting Corporation

Date/Time Received: 08/28/17, 4:28 pm

Date Reported: 08/31/17

Client Sample ID:	HA-1-1	Lab Sample ID:	1708207-001A
Project Name/Location:	CV-Morgan Hill D	Sample Matrix:	Soil
Project Number:	185804012		
Date/Time Sampled:	08/28/17 / 11:16		
SDG:			

Prep Method: 3050B	Prep Batch Date/Time: 8/30/17 10:45:00AM
Prep Batch ID: 9366	Prep Analyst: BJAY

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Arsenic	SW6010B	1	0.15	1.3	5.62		mg/Kg	08/30/17	20:02	PPATEL	426503
Lead	SW6010B	1	0.12	3.0	6.65		mg/Kg	08/30/17	20:02	PPATEL	426503



SAMPLE RESULTS

Report prepared for: Kyle Emerson
Stantec Consulting Corporation

Date/Time Received: 08/28/17, 4:28 pm
Date Reported: 08/31/17

Client Sample ID:	HA-2-1	Lab Sample ID:	1708207-002A
Project Name/Location:	CV-Morgan Hill D	Sample Matrix:	Soil
Project Number:	185804012		
Date/Time Sampled:	08/28/17 / 11:26		
SDG:			

Prep Method: 3050B	Prep Batch Date/Time: 8/30/17 10:45:00AM
Prep Batch ID: 9366	Prep Analyst: BJAY

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Arsenic	SW6010B	1	0.15	1.3	5.05		mg/Kg	08/30/17	20:06	PPATEL	426503
Lead	SW6010B	1	0.12	3.0	35.7		mg/Kg	08/30/17	20:06	PPATEL	426503

Prep Method: 3546_OCP	Prep Batch Date/Time: 8/30/17 2:55:00PM
Prep Batch ID: 9384	Prep Analyst: SNARASIMHAN

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
alpha-BHC	SW8081B	1	0.13	2.0	ND		ug/Kg	08/30/17	23:18	LA	426523
gamma-BHC (Lindane)	SW8081B	1	0.16	2.0	ND		ug/Kg	08/30/17	23:18	LA	426523
beta-BHC	SW8081B	1	0.32	2.0	ND		ug/Kg	08/30/17	23:18	LA	426523
delta-BHC	SW8081B	1	0.16	2.0	ND		ug/Kg	08/30/17	23:18	LA	426523
Heptachlor	SW8081B	1	0.11	2.0	ND		ug/Kg	08/30/17	23:18	LA	426523
Aldrin	SW8081B	1	0.20	2.0	ND		ug/Kg	08/30/17	23:18	LA	426523
Heptachlor Epoxide	SW8081B	1	0.078	2.0	ND		ug/Kg	08/30/17	23:18	LA	426523
gamma-Chlordane	SW8081B	1	0.16	2.0	ND		ug/Kg	08/30/17	23:18	LA	426523
alpha-Chlordane	SW8081B	1	0.17	2.0	ND		ug/Kg	08/30/17	23:18	LA	426523
4,4-DDE	SW8081B	1	0.19	2.0	11.6		ug/Kg	08/30/17	23:18	LA	426523
Endosulfan I	SW8081B	1	0.18	2.0	ND		ug/Kg	08/30/17	23:18	LA	426523
Dieldrin	SW8081B	1	0.15	2.0	ND		ug/Kg	08/30/17	23:18	LA	426523
Endrin	SW8081B	1	0.19	2.0	ND		ug/Kg	08/30/17	23:18	LA	426523
4,4-DDD	SW8081B	1	0.57	2.0	ND		ug/Kg	08/30/17	23:18	LA	426523
Endosulfan II	SW8081B	1	0.58	2.0	ND		ug/Kg	08/30/17	23:18	LA	426523
4,4-DDT	SW8081B	1	0.13	2.0	12.7		ug/Kg	08/30/17	23:18	LA	426523
Endrin Aldehyde	SW8081B	1	0.15	2.0	ND		ug/Kg	08/30/17	23:18	LA	426523
Methoxychlor	SW8081B	1	0.20	2.0	ND		ug/Kg	08/30/17	23:18	LA	426523
Endosulfan Sulfate	SW8081B	1	0.12	2.0	ND		ug/Kg	08/30/17	23:18	LA	426523
Endrin Ketone	SW8081B	1	0.094	2.0	ND		ug/Kg	08/30/17	23:18	LA	426523
Chlordane	SW8081B	1	2.1	20	ND		ug/Kg	08/30/17	23:18	LA	426523
Toxaphene	SW8081B	1	8.5	50	ND		ug/Kg	08/30/17	23:18	LA	426523
Acceptance Limits											
TCMX (S)	SW8081B		48 - 125		71.5		%	08/30/17	23:18	LA	426523
DCBP (S)	SW8081B		38 - 135		80.8		%	08/30/17	23:18	LA	426523



SAMPLE RESULTS

Report prepared for: Kyle Emerson
Stantec Consulting Corporation

Date/Time Received: 08/28/17, 4:28 pm
Date Reported: 08/31/17

Client Sample ID:	HA-3-1	Lab Sample ID:	1708207-003A
Project Name/Location:	CV-Morgan Hill D	Sample Matrix:	Soil
Project Number:	185804012		
Date/Time Sampled:	08/28/17 / 11:56		
SDG:			

Prep Method: 3050B	Prep Batch Date/Time: 8/30/17 10:45:00AM
Prep Batch ID: 9366	Prep Analyst: BJAY

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Arsenic	SW6010B	1	0.15	1.3	4.27		mg/Kg	08/30/17	20:10	PPATEL	426503
Lead	SW6010B	1	0.12	3.0	ND		mg/Kg	08/30/17	20:10	PPATEL	426503

Prep Method: 3546_OCP	Prep Batch Date/Time: 8/30/17 2:55:00PM
Prep Batch ID: 9384	Prep Analyst: SNARASIMHAN

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
alpha-BHC	SW8081B	1	0.13	2.0	ND		ug/Kg	08/30/17	23:32	LA	426523
gamma-BHC (Lindane)	SW8081B	1	0.16	2.0	ND		ug/Kg	08/30/17	23:32	LA	426523
beta-BHC	SW8081B	1	0.32	2.0	ND		ug/Kg	08/30/17	23:32	LA	426523
delta-BHC	SW8081B	1	0.16	2.0	ND		ug/Kg	08/30/17	23:32	LA	426523
Heptachlor	SW8081B	1	0.11	2.0	ND		ug/Kg	08/30/17	23:32	LA	426523
Aldrin	SW8081B	1	0.20	2.0	ND		ug/Kg	08/30/17	23:32	LA	426523
Heptachlor Epoxide	SW8081B	1	0.078	2.0	ND		ug/Kg	08/30/17	23:32	LA	426523
gamma-Chlordane	SW8081B	1	0.16	2.0	ND		ug/Kg	08/30/17	23:32	LA	426523
alpha-Chlordane	SW8081B	1	0.17	2.0	ND		ug/Kg	08/30/17	23:32	LA	426523
4,4-DDE	SW8081B	1	0.19	2.0	ND		ug/Kg	08/30/17	23:32	LA	426523
Endosulfan I	SW8081B	1	0.18	2.0	ND		ug/Kg	08/30/17	23:32	LA	426523
Dieldrin	SW8081B	1	0.15	2.0	ND		ug/Kg	08/30/17	23:32	LA	426523
Endrin	SW8081B	1	0.19	2.0	ND		ug/Kg	08/30/17	23:32	LA	426523
4,4-DDD	SW8081B	1	0.57	2.0	ND		ug/Kg	08/30/17	23:32	LA	426523
Endosulfan II	SW8081B	1	0.58	2.0	ND		ug/Kg	08/30/17	23:32	LA	426523
4,4-DDT	SW8081B	1	0.13	2.0	ND		ug/Kg	08/30/17	23:32	LA	426523
Endrin Aldehyde	SW8081B	1	0.15	2.0	ND		ug/Kg	08/30/17	23:32	LA	426523
Methoxychlor	SW8081B	1	0.20	2.0	ND		ug/Kg	08/30/17	23:32	LA	426523
Endosulfan Sulfate	SW8081B	1	0.12	2.0	ND		ug/Kg	08/30/17	23:32	LA	426523
Endrin Ketone	SW8081B	1	0.094	2.0	ND		ug/Kg	08/30/17	23:32	LA	426523
Chlordane	SW8081B	1	2.1	20	ND		ug/Kg	08/30/17	23:32	LA	426523
Toxaphene	SW8081B	1	8.5	50	ND		ug/Kg	08/30/17	23:32	LA	426523
Acceptance Limits											
TCMX (S)	SW8081B		48 - 125		72.1		%	08/30/17	23:32	LA	426523
DCBP (S)	SW8081B		38 - 135		81.5		%	08/30/17	23:32	LA	426523



SAMPLE RESULTS

Report prepared for: Kyle Emerson
Stantec Consulting Corporation

Date/Time Received: 08/28/17, 4:28 pm
Date Reported: 08/31/17

Client Sample ID:	HA-4-1	Lab Sample ID:	1708207-004A
Project Name/Location:	CV-Morgan Hill D	Sample Matrix:	Soil
Project Number:	185804012		
Date/Time Sampled:	08/28/17 / 11:51		
SDG:			

Prep Method: 3050B	Prep Batch Date/Time: 8/30/17 10:45:00AM
Prep Batch ID: 9366	Prep Analyst: BJAY

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Arsenic	SW6010B	1	0.15	1.3	5.55		mg/Kg	08/30/17	20:14	PPATEL	426503
Lead	SW6010B	1	0.12	3.0	11.8		mg/Kg	08/30/17	20:14	PPATEL	426503

Prep Method: 3546_OCP	Prep Batch Date/Time: 8/30/17 2:55:00PM
Prep Batch ID: 9384	Prep Analyst: SNARASIMHAN

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
alpha-BHC	SW8081B	1	0.13	2.0	ND		ug/Kg	08/30/17	23:47	LA	426523
gamma-BHC (Lindane)	SW8081B	1	0.16	2.0	ND		ug/Kg	08/30/17	23:47	LA	426523
beta-BHC	SW8081B	1	0.32	2.0	ND		ug/Kg	08/30/17	23:47	LA	426523
delta-BHC	SW8081B	1	0.16	2.0	ND		ug/Kg	08/30/17	23:47	LA	426523
Heptachlor	SW8081B	1	0.11	2.0	ND		ug/Kg	08/30/17	23:47	LA	426523
Aldrin	SW8081B	1	0.20	2.0	ND		ug/Kg	08/30/17	23:47	LA	426523
Heptachlor Epoxide	SW8081B	1	0.078	2.0	ND		ug/Kg	08/30/17	23:47	LA	426523
gamma-Chlordane	SW8081B	1	0.16	2.0	ND		ug/Kg	08/30/17	23:47	LA	426523
alpha-Chlordane	SW8081B	1	0.17	2.0	ND		ug/Kg	08/30/17	23:47	LA	426523
4,4-DDE	SW8081B	1	0.19	2.0	ND		ug/Kg	08/30/17	23:47	LA	426523
Endosulfan I	SW8081B	1	0.18	2.0	ND		ug/Kg	08/30/17	23:47	LA	426523
Dieldrin	SW8081B	1	0.15	2.0	ND		ug/Kg	08/30/17	23:47	LA	426523
Endrin	SW8081B	1	0.19	2.0	ND		ug/Kg	08/30/17	23:47	LA	426523
4,4-DDD	SW8081B	1	0.57	2.0	ND		ug/Kg	08/30/17	23:47	LA	426523
Endosulfan II	SW8081B	1	0.58	2.0	ND		ug/Kg	08/30/17	23:47	LA	426523
4,4-DDT	SW8081B	1	0.13	2.0	ND		ug/Kg	08/30/17	23:47	LA	426523
Endrin Aldehyde	SW8081B	1	0.15	2.0	ND		ug/Kg	08/30/17	23:47	LA	426523
Methoxychlor	SW8081B	1	0.20	2.0	ND		ug/Kg	08/30/17	23:47	LA	426523
Endosulfan Sulfate	SW8081B	1	0.12	2.0	ND		ug/Kg	08/30/17	23:47	LA	426523
Endrin Ketone	SW8081B	1	0.094	2.0	ND		ug/Kg	08/30/17	23:47	LA	426523
Chlordane	SW8081B	1	2.1	20	ND		ug/Kg	08/30/17	23:47	LA	426523
Toxaphene	SW8081B	1	8.5	50	ND		ug/Kg	08/30/17	23:47	LA	426523
Acceptance Limits											
TCMX (S)	SW8081B		48 - 125		62.7		%	08/30/17	23:47	LA	426523
DCBP (S)	SW8081B		38 - 135		68.6		%	08/30/17	23:47	LA	426523



SAMPLE RESULTS

Report prepared for: Kyle Emerson
Stantec Consulting Corporation

Date/Time Received: 08/28/17, 4:28 pm
Date Reported: 08/31/17

Client Sample ID:	HA-5-1	Lab Sample ID:	1708207-005A
Project Name/Location:	CV-Morgan Hill D	Sample Matrix:	Soil
Project Number:	185804012		
Date/Time Sampled:	08/28/17 / 12:12		
SDG:			

Prep Method: 3050B	Prep Batch Date/Time: 8/30/17 10:45:00AM
Prep Batch ID: 9366	Prep Analyst: BJAY

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Arsenic	SW6010B	1	0.15	1.3	4.09		mg/Kg	08/30/17	20:18	PPATEL	426503
Lead	SW6010B	1	0.12	3.0	3.19		mg/Kg	08/30/17	20:18	PPATEL	426503

Prep Method: 3546_OCP	Prep Batch Date/Time: 8/30/17 2:55:00PM
Prep Batch ID: 9384	Prep Analyst: SNARASIMHAN

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
alpha-BHC	SW8081B	1	0.13	2.0	ND		ug/Kg	08/31/17	0:01	LA	426523
gamma-BHC (Lindane)	SW8081B	1	0.16	2.0	ND		ug/Kg	08/31/17	0:01	LA	426523
beta-BHC	SW8081B	1	0.32	2.0	ND		ug/Kg	08/31/17	0:01	LA	426523
delta-BHC	SW8081B	1	0.16	2.0	ND		ug/Kg	08/31/17	0:01	LA	426523
Heptachlor	SW8081B	1	0.11	2.0	ND		ug/Kg	08/31/17	0:01	LA	426523
Aldrin	SW8081B	1	0.20	2.0	ND		ug/Kg	08/31/17	0:01	LA	426523
Heptachlor Epoxide	SW8081B	1	0.078	2.0	ND		ug/Kg	08/31/17	0:01	LA	426523
gamma-Chlordane	SW8081B	1	0.16	2.0	ND		ug/Kg	08/31/17	0:01	LA	426523
alpha-Chlordane	SW8081B	1	0.17	2.0	ND		ug/Kg	08/31/17	0:01	LA	426523
4,4-DDE	SW8081B	1	0.19	2.0	ND		ug/Kg	08/31/17	0:01	LA	426523
Endosulfan I	SW8081B	1	0.18	2.0	ND		ug/Kg	08/31/17	0:01	LA	426523
Dieldrin	SW8081B	1	0.15	2.0	ND		ug/Kg	08/31/17	0:01	LA	426523
Endrin	SW8081B	1	0.19	2.0	ND		ug/Kg	08/31/17	0:01	LA	426523
4,4-DDD	SW8081B	1	0.57	2.0	ND		ug/Kg	08/31/17	0:01	LA	426523
Endosulfan II	SW8081B	1	0.58	2.0	ND		ug/Kg	08/31/17	0:01	LA	426523
4,4-DDT	SW8081B	1	0.13	2.0	ND		ug/Kg	08/31/17	0:01	LA	426523
Endrin Aldehyde	SW8081B	1	0.15	2.0	ND		ug/Kg	08/31/17	0:01	LA	426523
Methoxychlor	SW8081B	1	0.20	2.0	ND		ug/Kg	08/31/17	0:01	LA	426523
Endosulfan Sulfate	SW8081B	1	0.12	2.0	ND		ug/Kg	08/31/17	0:01	LA	426523
Endrin Ketone	SW8081B	1	0.094	2.0	ND		ug/Kg	08/31/17	0:01	LA	426523
Chlordane	SW8081B	1	2.1	20	ND		ug/Kg	08/31/17	0:01	LA	426523
Toxaphene	SW8081B	1	8.5	50	ND		ug/Kg	08/31/17	0:01	LA	426523
Acceptance Limits											
TCMX (S)	SW8081B		48 - 125		66.4		%	08/31/17	0:01	LA	426523
DCBP (S)	SW8081B		38 - 135		72.5		%	08/31/17	0:01	LA	426523



SAMPLE RESULTS

Report prepared for: Kyle Emerson
Stantec Consulting Corporation

Date/Time Received: 08/28/17, 4:28 pm
Date Reported: 08/31/17

Client Sample ID:	HA-6-1	Lab Sample ID:	1708207-006A
Project Name/Location:	CV-Morgan Hill D	Sample Matrix:	Soil
Project Number:	185804012		
Date/Time Sampled:	08/28/17 / 12:20		
SDG:			

Prep Method:	3050B	Prep Batch Date/Time:	8/30/17 10:45:00AM
Prep Batch ID:	9366	Prep Analyst:	BJAY

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Arsenic	SW6010B	1	0.15	1.3	5.59		mg/Kg	08/30/17	20:21	PPATEL	426503
Lead	SW6010B	1	0.12	3.0	59.2		mg/Kg	08/30/17	20:21	PPATEL	426503



MB Summary Report

Work Order:	1708207	Prep Method:	3050B	Prep Date:	08/30/17	Prep Batch:	9366
Matrix:	Soil	Analytical Method:	SW6010B	Analyzed Date:	8/30/2017	Analytical Batch:	426503
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
------------	-----	-----	--------------------	---------------	--

Arsenic	0.15	1.30	ND		
Lead	0.10	1.30	ND		

Work Order:	1708207	Prep Method:	3546_OCP	Prep Date:	08/30/17	Prep Batch:	9384
Matrix:	Soil	Analytical Method:	SW8081B	Analyzed Date:	8/30/2017	Analytical Batch:	426506
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
------------	-----	-----	--------------------	---------------	--

alpha-BHC	0.13	2.0	ND		
gamma-BHC (Lindane)	0.16	2.0	ND		
beta-BHC	0.32	2.0	ND		
delta-BHC	0.16	2.0	ND		
Heptachlor	0.11	2.0	ND		
Aldrin	0.20	2.0	ND		
Heptachlor Epoxide	0.078	2.0	ND		
gamma-Chlordane	0.16	2.0	ND		
alpha-Chlordane	0.17	2.0	ND		
4,4-DDE	0.19	2.0	ND		
Endosulfan I	0.18	2.0	ND		
Dieldrin	0.15	2.0	ND		
Endrin	0.19	2.0	ND		
4,4-DDD	0.57	2.0	ND		
Endosulfan II	0.58	2.0	ND		
4,4-DDT	0.13	2.0	ND		
Endrin Aldehyde	0.15	2.0	ND		
Methoxychlor	0.20	2.0	ND		
Endosulfan Sulfate	0.12	2.0	ND		
Endrin Ketone	0.094	2.0	ND		
Chlordane	2.1	20	ND		
Toxaphene	8.5	50	ND		
TCMX (S)			84.0		
DCBP (S)			91.6		



LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	1708207	Prep Method:	3050B	Prep Date:	08/30/17	Prep Batch:	9366
Matrix:	Soil	Analytical Method:	SW6010B	Analyzed Date:	8/30/2017	Analytical Batch:	426503
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Arsenic	0.15	1.30	ND	50	94.1	98.3	4.57	80 - 120	30	
Lead	0.10	3.00	ND	50	95.6	100.	4.50	80 - 120	30	

Work Order:	1708207	Prep Method:	3546_OCP	Prep Date:	08/30/17	Prep Batch:	9384
Matrix:	Soil	Analytical Method:	SW8081B	Analyzed Date:	8/30/2017	Analytical Batch:	426506
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
gamma-BHC (Lindane)	0.16	2.0	ND	40	95.9	101	4.58	25 - 135	30	
Heptachlor	0.11	2.0	ND	40	89.4	94.8	5.70	40 - 130	30	
Aldrin	0.20	2.0	ND	40	93.8	99.0	5.45	25 - 140	30	
Dieldrin	0.15	2.0	ND	40	90.4	95.1	5.13	60 - 130	30	
Endrin	0.19	2.0	ND	40	102	107	5.26	55 - 135	30	
4,4-DDT	0.13	2.0	ND	40	91.3	96.3	5.33	45 - 140	30	
TCMX (S)				100	83.1	86.7		48 - 125		
DCBP (S)				100	89.4	94.4		38 - 135		



Laboratory Qualifiers and Definitions

DEFINITIONS:

Accuracy/Bias (% Recovery) - The closeness of agreement between an observed value and an accepted reference value.
Blank (Method/Preparation Blank) -MB/PB - An analyte-free matrix to which all reagents are added in the same volumes/proportions as used in sample processing. The method blank is used to document contamination resulting from the analytical process.
Duplicate - a field sample and/or laboratory QC sample prepared in duplicate following all of the same processes and procedures used on the original sample (sample duplicate, LCSD, MSD)
Laboratory Control Sample (LCS ad LCSD) - A known matrix spiked with compounds representative of the target analyte(s). This is used to document laboratory performance.
Matrix - the component or substrate that contains the analyte of interest (e.g., - groundwater, sediment, soil, waste water, etc)
Matrix Spike (MS/MSD) - Client sample spiked with identical concentrations of target analyte (s). The spiking occurs prior to the sample preparation and analysis. They are used to document the precision and bias of a method in a given sample matrix.
Method Detection Limit (MDL) - the minimum concentration of a substance that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero
Practical Quantitation Limit/Reporting Limit/Limit of Quantitation (PQL/RL/LOQ) - a laboratory determined value at 2 to 5 times above the MDL that can be reproduced in a manner that results in a 99% confidence level that the result is both accurate and precise. PQLs/RLs/LODs reflect all preparation factors and/or dilution factors that have been applied to the sample during the preparation and/or analytical processes.
Precision (%RPD) - The agreement among a set of replicate/duplicate measurements without regard to known value of the replicates
Surrogate (S) or (Surr) - An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. Surrogates are used in most organic analysis to demonstrate matrix compatibility with the chosen method of analysis
Tentatively Identified Compound (TIC) - A compound not contained within the analytical calibration standards but present in the GCMS library of defined compounds. When the library is searched for an unknown compound, it can frequently give a tentative identification to the compound based on retention time and primary and secondary ion match. TICs are reported as estimates and are candidates for further investigation.
Units: the unit of measure used to express the reported result - mg/L and mg/Kg (equivalent to PPM - parts per million in liquid and solid), ug/L and ug/Kg (equivalent to PPB - parts per billion in liquid and solid), ug/m3 , mg/m3 , ppbv and ppmv (all units of measure for reporting concentrations in air), % (equivalent to 10000 ppm or 1,000,000 ppb), ug/Wipe (concentration found on the surface of a single Wipe usually taken over a 100cm2 surface)

LABORATORY QUALIFIERS:

<p>B - Indicates when the analyte is found in the associated method or preparation blank</p> <p>D - Surrogate is not recoverable due to the necessary dilution of the sample</p> <p>E - Indicates the reportable value is outside of the calibration range of the instrument but within the linear range of the instrument (unless otherwise noted) Values reported with an E qualifier should be considered as estimated.</p> <p>H - Indicates that the recommended holding time for the analyte or compound has been exceeded</p> <p>J - Indicates a value between the method MDL and PQL and that the reported concentration should be considered as estimated rather the quantitative</p> <p>NA - Not Analyzed</p> <p>N/A - Not Applicable</p> <p>ND - Not Detected at a concentration greater than the PQL/RL or, if reported to the MDL, at greater than the MDL.</p> <p>NR - Not recoverable - a matrix spike concentration is not recoverable due to a concentration within the original sample that is greater than four times the spike concentration added</p> <p>R - The % RPD between a duplicate set of samples is outside of the absolute values established by laboratory control charts</p> <p>S - Spike recovery is outside of established method and/or laboratory control limits. Further explanation of the use of this qualifier should be included within a case narrative</p> <p>X -Used to indicate that a value based on pattern identification is within the pattern range but not typical of the pattern found in standards. Further explanation may or may not be provided within the sample footnote and/or the case narrative.</p>



Sample Receipt Checklist

Client Name: Stantec Consulting Corporation

Project Name: CV-Morgan Hill D

Work Order No.: 1708207

Date and Time Received: 8/28/2017 4:28:00PM

Received By: Navin Ghodasara

Physically Logged By: Navin Ghodasara

Checklist Completed By:

Carrier Name: First Courier

Chain of Custody (COC) Information

Chain of custody present?	<u>Yes</u>
Chain of custody signed when relinquished and received?	<u>Yes</u>
Chain of custody agrees with sample labels?	<u>Yes</u>
Custody seals intact on sample bottles?	<u>Not Present</u>

Sample Receipt Information

Custody seals intact on shipping container/cooler?	<u>Not Present</u>
Shipping Container/Cooler In Good Condition?	<u>Yes</u>
Samples in proper container/bottle?	<u>Yes</u>
Samples containers intact?	<u>Yes</u>
Sufficient sample volume for indicated test?	<u>Yes</u>

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	<u>Yes</u>	
Container/Temp Blank temperature in compliance?	<u>Yes</u>	Temperature: 4.0 °C
Water-VOA vials have zero headspace?	<u>No VOA vials submitted</u>	
Water-pH acceptable upon receipt?	<u>N/A</u>	
pH Checked by: na	pH Adjusted by: na	

Comments:



Login Summary Report

Client ID: TL5151 Stantec Consulting Corporation
Project Name: CV-Morgan Hill D
Project # : 185804012
Report Due Date: 8/31/2017

QC Level: II
TAT Requested: 3 Day Rush:3
Date Received: 8/28/2017
Time Received: 4:28 pm

Comments:

Work Order # : 1708207

<u>WO Sample ID</u>	<u>Client Sample ID</u>	<u>Collection Date/Time</u>	<u>Matrix</u>	<u>Scheduled Disposal</u>	<u>Sample On Hold</u>	<u>Test On Hold</u>	<u>Requested Tests</u>	<u>Subbed</u>
1708207-001A	HA-1-1	08/28/17 11:16	Soil	02/24/18			Met_S_AsPb	
Sample Note: RUSH 3 Day!!!! As, Pb.								
1708207-002A	HA-2-1	08/28/17 11:26	Soil	02/24/18			Met_S_AsPb Pest_S_8081OCP	
Sample Note: As, Pb, OCPs.								
1708207-003A	HA-3-1	08/28/17 11:56	Soil	02/24/18			Met_S_AsPb Pest_S_8081OCP	
1708207-004A	HA-4-1	08/28/17 11:51	Soil	02/24/18			Met_S_AsPb Pest_S_8081OCP	
1708207-005A	HA-5-1	08/28/17 12:12	Soil	02/24/18			Met_S_AsPb Pest_S_8081OCP	
1708207-006A	HA-6-1	08/28/17 12:20	Soil	02/24/18			Met_S_AsPb	



CHAIN OF CUSTODY FORM

25864-F-Business Center Dr., Redlands, CA 92374 (909)335-6116, Fax (909) 335-6120

1708207

Page 1 of 1

Client Name/Address: Stantec 25864-F Business Center Drive Redlands, CA 92374 Project Manager: Kyle Emerson Kyle.Emerson@stantec.com Sampler: Matthew Sapp Matthew.Sapp@stantec.com		Project/PO Number: 185804082 CV-Morgan Hill D Phone Number:909-335-6116 Fax Number:909-335-6120		Analysis Required													
Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date	Sampling Time	Preserv.	Organochlorine Pesticides (EPA 8081A)	Arsenic & Lead (EPA 6010B)									Special Instructions
HA-1-1	SOIL	8oz Jar	1	8/28/17	1116	ICE	X	X	-001A								
HA-2-1	↓	↓	↓	↓	1126	↓	X	X	-002A								
HA-3-1	↓	↓	↓	↓	1136	↓	X	X	-003A								
HA-4-1	↓	↓	↓	↓	1151	↓	X	X	-004A								
HA-5-1	↓	↓	↓	↓	1212	↓	X	X	-005A								
HA-6-1	↓	↓	↓	↓	1220	↓		X	-006A								
										RUSH							
										3 DAYS				Temp. °C #1			
Relinquished By: [Signature]		Date/Time: 8/28/17 14:52		Received By: [Signature]		Date/Time: 2:45		Turn Around Time:									
Relinquished By: [Signature]		Date/Time: 8/28/17 4:28 PM		Received By: [Signature]		Date/Time: 8/28/17 4:28 PM		RUSH 72 hours									
Relinquished By: [Signature]		Date/Time: 8/28/17 4:28 PM		Received in Lab By: [Signature]		Date/Time: 8/28/17 4:28 PM		Sample Integrity:(Check) intact Yes on ice Yes									

Note: By relinquishing samples, client agrees to pay for the services requested on this chain of custody form and any additional analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 30 days.

FCS

Appendix F

Exterior Noise and Façade Acoustical Analysis

November 26, 2019

City Ventures

444 Spear Street, Suite 200
San Francisco, California 94105

Attention: Jason Bernstein and Samantha Hauser

Subject: **Morgan Hill 7**
Morgan Hill, California
Exterior Noise and Façade Acoustical Analysis
VA Project No. 4616-015

Dear Jason and Samantha:

Veneklasen Associates (Veneklasen) has completed our review of the exterior noise and vibration levels at the proposed Morgan Hill 7 development in Morgan Hill, California. This report represents the results of our findings. Veneklasen has utilized historical Veneklasen measurements and results from an acoustical noise and vibration survey from another engineering firm for this analysis (Appendix II). Veneklasen utilized the information to develop a computer model to assess noise levels and mitigation requirements. This report has been updated in response to the November 18, 2019 peer review comments provided by Bollard Acoustical Consultants (BAC).

1.0 INTRODUCTION

This study was conducted to determine the impact of the exterior noise and vibration sources on the Morgan Hill 7 project in Morgan Hill, California, and to determine the method, if any, required to satisfy the noise and vibration standards of the State of California and the City of Morgan Hill.

The project consists of 3-story townhouse-style condominium buildings. The project is bounded by Monterey Road to the west and north of the project boundary, Union Pacific Railroad (UPRR) to the east, and existing residential land uses to the south.

2.0 CRITERIA

LDN (Day-Night Noise Level) is the 24-hour equivalent (average) sound pressure level in which the nighttime (10 pm – 7 am) noise is weighted by adding 10 dB to the hourly level. Since this is a 24-hour metric, short-duration noise events (truck pass-by's, buses, trains, etc.) are not as prominent in the analysis.

Leq (equivalent continuous sound level) is defined as the steady sound pressure level which, over a given period of time, has the same total energy as the actual fluctuating noise.

VdB is a measurement of ground velocity relative to 10^{-6} inches per second.

2.1 Interior Noise Levels – Residential

The State of California Building Code (Section 1207, "Sound Transmission") and the City of Morgan Hill Noise Element state that interior LDN values for residential land uses are not to exceed 45 LDN in any habitable room associated with exterior noise sources.

If the windows must be closed to meet an interior level of 45 LDN, then a mechanical ventilating system or other means of natural ventilation may be required.

2.2 Maximum Instantaneous Noise Levels – Residential

The City of Morgan Hill Noise Element (Goal 7, "Prevention of Noise from Interfering with Human Activities or Causing Health Problems") states that noise levels in new residential development exposed to an exterior

LDN 60 dBA or greater should be limited to a maximum instantaneous noise level in bedrooms of 50 dBA and 55 dBA in all other habitable rooms. VA utilized the L1 metric “instantaneous noise level” for train pass-by’s.

2.3 Exterior Noise Levels – Residential

The City of Morgan Hill Noise sets an exterior noise level LDN goal of 60 dBA in residential areas where outdoor use is a major consideration. Where the City determines that providing an LDN of 60 dBA or lower cannot be achieved after the application of reasonable and feasible mitigation, an LDN of 65 dBA may be permitted. Also, the maximum outdoor noise level for new residences near the railroad shall be 70 dBA LDN.

Per the BAC report, private exterior areas (balconies, patios) do not fall under this criterion.

2.4 Vibration Criteria – Residential

There are no regulatory requirements for vibration levels.

The “Transit Noise and Vibration Impact Assessment Manual” from the Federal Transit Administration, U.S. Department of Transportation, dated September 2018 (“FTA Report No. 0123”) is used as a guideline. The criterion presented in Table 6-3 of that report for infrequent events (defined as fewer than 30 per day) in residences is that the vibration levels not exceed 80 VdB.

3.0 EXTERIOR NOISE AND VIBRATION ENVIRONMENT

3.1 Noise and Vibration Measurements

Railroad operations from UPRR and traffic from Monterey Road are the primary sources of noise affecting the site.

Veneklasen utilized historical measurements from a project just to the south, at Monterey Road and Granada Street. The subject project site has exposure from the same environmental sources (train line and Monterey Road) at similar distances. 24-hour measurements were performed from April 7-8, 2014, using a Bruel & Kjaer type 2260 sound level meter along with recent measurements performed by other engineering firms. The microphone was mounted at approximately five feet above the ground. Ground vibration levels were measured using an accelerometer mounted to a stake driven into the dirt and similarly logged using a Bruel & Kjaer 2260 analyzer. Both noise and vibration measurements were taken at a distance of 25 feet from the railroad track. Short-term measurements were also completed along Monterey Road, approximately 10 feet from the edge of the road. Table 1 shows a summary of Veneklasen’s noise and vibration measurements.

Table 1 – Veneklasen Measured Sound Levels, April 2014

Measurement	Vibration Velocity Level, VdB	Train Pass-by Events, L1 dBA	LDN
Noise, Train	-	82-92	74
Noise, Road	-	-	67 ¹
Vibration, Train	78-82	-	-

Veneklasen’s historical measurements were supplemented with site-specific reported levels from another engineering firm (Appendix II). The measured onsite levels per the report were consistent with Veneklasen’s historical measurements. The number of trains captured during the two surveys were also mutually consistent and therefore the measurements are expected to represent a typical condition at the site. The BAC report questions why only short-term measurements were completed; this interpretation of Veneklasen’s report is inaccurate. Veneklasen conducted 24-hour measurements at a nearby site and another consultant

¹ BAC report questions how the level can be 67 LDN at a distance of 40’ from the centerline and 10’ from the edge of the road. These distances have different reference points and therefore experience approximately the same level. The difference is less than 1 dB LDN.

report conducted 24-hour measurements at the project site. LDN levels were calculated in accordance with Veneklasen's statistical data model². Refer to Appendix II for measurement locations and results. Therefore, measurements, in our professional opinion, satisfy the question raised as 2 sites were used and both had 24-hour data. Veneklasen believes this is a suitable data set for evaluation.

Veneklasen utilizes statistical methodologies² for establishing design levels for a project as statistical methods provide a more reliable understanding of site environmental noise. This has been found useful for shorter environmental data sets, which are typical of this site.

3.2 Computer Modeling

Veneklasen has utilized the Traffic Noise Model computer software program developed by the FHWA (Federal Highway Administration TNM 2.5) in order to predict vehicular noise levels at various locations. The primary purpose of the computer model was to determine how the noise environment will change due to traffic and site changes. Onsite measurement results were used to validate the TNM model.

Traffic counts for Monterey Road were obtained from the City of Morgan Hill Public Works Department. The Average Daily Traffic (ADT) volume on Monterey Road is approximately 14,000 (2015 count). The engineering report utilizes a 2.76% growth in traffic per year based on the City of Morgan Hill Traffic Impact Analysis report and traffic counts from 2009. This approximation yields a 2015 ADT of 15,000. Given the traffic counts conducted in 2015 indicated an actual ADT of 14,000 at the project site, the 2.76% growth rate appears to be higher than reality. Using this approximation is anticipated to result in levels that are higher than actual.

Using the 17,000 ADT for 2018, the calculated sound level at a distance of 40 feet from the centerline of the road is 67 LDN. This corresponds with the levels measured for Monterey Road at Granada Street in 2014. With a traffic level increase of 2.76% per year, over 10 years that results in an increase in sound level of 1 dB LDN.

The site plans include a current building setback of 60 feet, minimum, between the noise source and the buildings. Therefore, Veneklasen has utilized an LDN of 66 for Monterey Road at a distance of 60 feet.

3.3 Overall Exterior Exposure

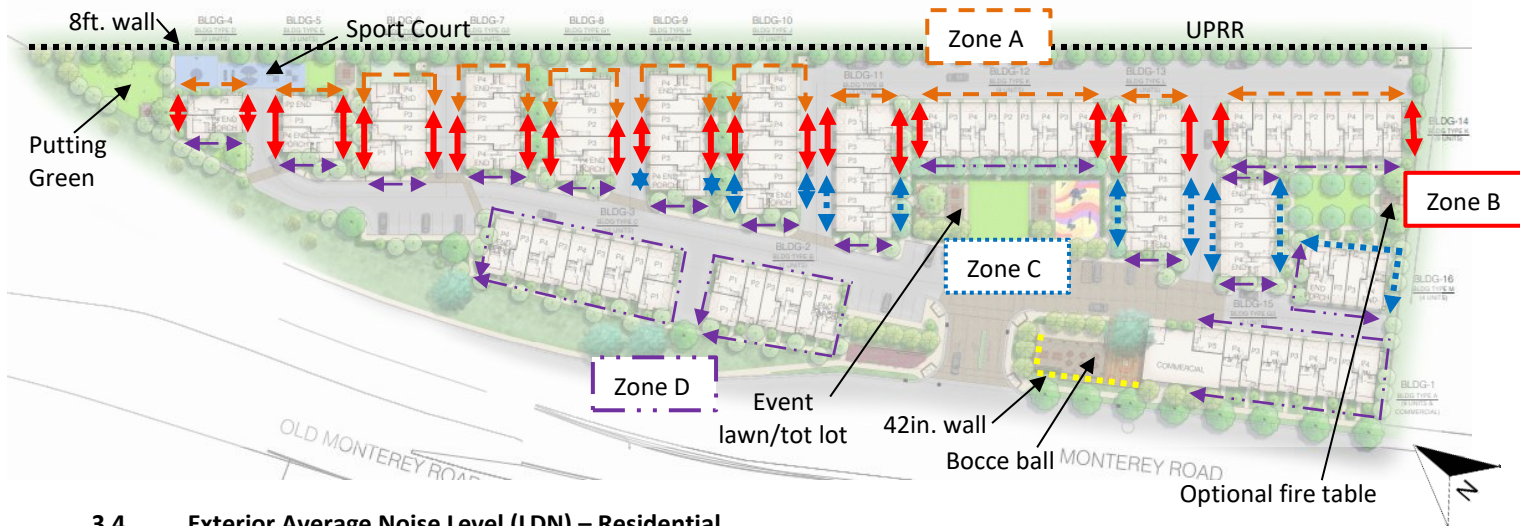
Based on the computer model and measurements, Veneklasen calculated the noise level at different locations across the project site. To simplify the presentation of the exterior noise levels, Veneklasen has separated the site into locations based on the sound exposure and required mitigation. The predicted sound levels at each zone, shown in Figure 1, are listed in Table 2 below.

Table 2 - Exterior Noise Levels

Location	Floor	Exterior Noise Level, LDN	Train Pass-by Level, L1 dBA
Zone A	All	68-71	75-80
Zone B	All	63-66	70-75
Zone C	All	58-61	65-70
Zone D	All	60-67	< 65

² LoVerde, John; Dong, Wayland; Rawlings, Samantha. "Noise Prediction of Traffic on Freeways and Arterials from Measured Data." Noise-Con 2014. Fort Lauderdale, Florida.

Figure 1 - Noise Zones



3.4 Exterior Average Noise Level (LDN) – Residential

From Table 2, it can be seen that the City General Plan requirement of 70 LDN for all residential buildings is met for all buildings except those in Zone A.

The exterior recreational areas near Monterey Road (putting green, bocce ball court) are within exterior noise zones in excess of 65 LDN due to vehicular traffic from Monterey Road. The calculated sound level at the bocce ball court is 67 LDN; the sound level at the putting green is 62 LDN. In order to achieve the project goal of community connectivity, use of barriers along Monterey Road has been minimized. The sound levels at the bocce ball court can be reduced to 62 LDN with a 42-inch high barrier. Both areas are therefore in compliance with the City standard of 65 LDN.

With the revised site plan and recommended barriers, all of the recreational areas are below the City General Plan 65 LDN threshold from vehicular sources and 70 LDN threshold from rail sources.

3.5 Project Impact on Existing Noise Environment

The BAC report requests comment on the project's anticipated impact on the future noise environment for existing occupancies near the project. Per the BAC report, the project is anticipated to generate an additional 1034 daily trips. This number of trips represents a 6% increase in traffic over the 2018 ADT for Monterey Road, resulting in a net change of 0.3 dB. This change will be imperceptible to a human ear and therefore does not represent a significant impact³.

4.0 INTERIOR NOISE

4.1 Exterior Façade Construction

Veneklasen understands the project will utilize a typical standard exterior construction which consists of 3-coat stucco over sheathing on wood studs with a single layer of gypsum board on the interior and batt insulation in the cavity.

4.2 Interior Average Noise Level (LDN) – Residential

Veneklasen calculated the interior level within the residential units given the measured noise environment and the exterior façade construction described above. Based on Veneklasen's analysis, the interior LDN criteria can be met with exterior constructions as indicated in Table 3 below. Veneklasen utilized the glazing ratings (glass, frame and seals) shown in Appendix I.

³ Significant impacts defined as an increase of 3 dBA or more when exterior level is 60 LDN or more. Policy SSI-8.5, 2035 General Plan, City of Morgan Hill.

4.3 Interior Train Pass-by Event Noise Level (dBA) – Residential

In a similar manner, Veneklasen calculated the interior noise levels as a result of the train pass-by's. As described in Section 2.2, event noise level criterion is 50 or 55 dBA for bedroom and living rooms, respectively.

As described above, Veneklasen utilizes statistical methodologies for establishing event levels. The train pass-by events were composed of two elements: the locomotive pass-by and the rolling stock. The locomotive events are significantly louder (30 dBA on average) than the rolling stock sound level. Therefore, Veneklasen assessed the two sources independently; the glazing design for train pass-by events was controlled by the locomotive pass-by.

Veneklasen's analysis indicates that the STC ratings will be required to be higher than for the LDN criteria with ratings of STC 36-42 in Zone A. These are required to comply with City General Plan requirements. Veneklasen utilized the glazing ratings (glass, frame and seals) shown in Appendix I.

4.4 Mitigation Options – Interior Sound Levels

Veneklasen investigated a number of options for mitigation of exterior and interior sound levels to comply with requirements. These options included:

- Increased building setback from train line; (not enough benefit)
- Increased building setback from Monterey Road; (not enough benefit)
- Use of sound barriers along train line and Monterey Road; (benefit and detail provided)
- Use of vegetation as an acoustical barrier; (not effective)
- Upgraded window/door assemblies; (benefit and various presented)
- Upgraded exterior wall assemblies; (benefit and various presented)
- Change in grade level for exterior recreational areas; (discussed)
- Change in orientation, type and building functionality; (benefit and detail provided)
- Relocation of buildings on the site related to exterior recreational areas.

The most recent site plan reflects Veneklasen's recommendations in order to mitigate level by orienting and locating buildings, adjusting recreational areas, and incorporating a sound wall.

In selecting a mitigation option to recommend, Veneklasen balanced the requirements for the exterior and interior mitigation, design goals for access to the project, and the efficiency of the different options. Veneklasen presents below our recommendation as a balance among all these factors.

4.5 Recommended Mitigation

The recommended mitigation strategy includes construction of an 8-foot-tall sound wall along the train line at the project property line. The barrier would extend along the entire project boundary on the railroad side. A barrier is also required for the seating area and bocce ball court near the project entry between the recreational area and Monterey Road. This barrier shall be 42 inches in height, minimum (refer to Figure 1). The BAC report questions why the barrier is not taller to provide shielding for standing players utilizing the bocce ball court. This is to balance the project's goals of community connectivity with the City's acoustical requirements. The predicted sound level at the bocce ball court is 64-65 LDN with the 42-inch barrier. This level is not expected to have an adverse effect on bocce ball players.

For units in Zone A, provide solid balcony railings that are a minimum of 46 inches tall.

With this mitigation, the sound levels at all exterior recreational areas are reduced below the 65/70 LDN (vehicular sources/rail sources) threshold required by the City. In addition, the 8-foot wall provides reduction in exterior level at the northern building facades that face the train line, such that the glazing STC ratings can be reduced on the first floor as indicated in Table 3, and balcony railings are recommended to provide acoustical shielding for balcony doors, where used, since acoustical ratings are more limited for door assemblies than window assemblies.

Table 3 below shows the glazing and exterior wall construction requirements with the inclusion of the sound walls. The sound wall may be constructed from any solid material with a minimum surface weight of 2.5 psf.

Refer to Appendix IV for sample calculations.

Table 3 - Calculated Interior Maximum Noise Levels with 8-foot Sound Wall

Location	Floor	Exterior Sound Level		Glazing Rating LR/BR*	Exterior Glass Door Rating LR/BR*	Interior Sound Level	
		LDN	Event Level, dBA			LDN	Event Level, dBA LR/BR*
Zone A	2-3	68-71	75-80	STC 40/STC 42	STC 36/STC 36	<45	55/50
	1	62-65	69-74	NA/STC 40	NA/STC 33	<45	NA/49
Zone B	2-3	63-66	70-75	STC 40/STC 40	STC 33/STC 33	<45	55/49
	1	< 60	64-69	NA/STC 33	NA/STC 30	<45	NA/48
Zone C	2-3	58-61	65-70	STC 30/STC 30	STC 30/STC 30	<45	48/49
	1	< 60	62-66	NA/STC 30	NA/STC 30	<45	NA/<45
Zone D	All	60-67	<75	STC 30/STC 30	STC 30	<45	<55/<50

* LR/BR means Living Room/Bedroom

5.0 INTERIOR VIBRATION LEVELS (VDB)

The vibration survey report cites measured levels in the ground of 61-70 VdB at a distance of 40 feet from the tracks. With the revised site plan, the closest buildings are now approximately 60 feet from the tracks. Veneklasen's measurements at a nearby site yielded higher results, at a shorter distance to the source. It is unknown if soil conditions between the two sites are similar enough to yield a comparison. The BAC report questions why Veneklasen used the other engineering firm's reported vibration levels instead of the higher levels measured by Veneklasen. Veneklasen utilized the other engineering firm's measured levels for two reasons: first, they were conducted on the site and represent site-specific conditions; secondly, the measured levels are mutually consistent. Veneklasen's measured levels are expected to be higher as they were measured at a location closer to the source.

Veneklasen evaluated the site based on the reported vibration levels at the site and has concluded that railroad-induced vibration levels would be below the 80 VdB guideline for acceptability.

It should be noted that compliance with the FTA guidelines does not indicate that vibration will not be perceptible. Events that occur at that vibration threshold would be noticeable and may cause secondary events such as rattling of objects.

There are no regulatory requirements related to vibration from the train line, therefore there are no mitigation requirements for this project.

Since the anticipated interior vibration levels are compliant with the FTA acceptability criteria, there is no significant impact from rail vibration to occupants of the site.

6.0 MECHANICAL VENTILATION - RESIDENTIAL

Because the windows and doors must be kept closed to meet the noise requirements, mechanical or other means of ventilation may be required for all units. The ventilation system shall not compromise the sound insulation capability of the exterior facade assembly.

7.0 SUMMARY

Veneklasen has assessed the exterior noise environment based on the updated plans and current project drawings. Veneklasen's conclusions are summarized below.

- All buildings comply with the residential building criteria of 70 LDN except those in Zone A.
- All recreational areas comply with the criteria of 65 LDN from traffic sources and 70 LDN from rail sources with inclusion of the recommended barriers along the railroad and Monterey Road.
- Provide an 8-foot-tall sound wall between the railroad and the project.
- Provide a 42-inch-tall sound wall at the bocce ball recreation area along Monterey Road.
- Provide solid balcony barriers, 46-inch-tall, at balconies within Zone A.
- Provide window assemblies with minimum ratings as indicated in Table 3 and Figure 1. See Appendix I for full requirements.
- Locate balcony access in Zone A where preferred per section 4.5, as feasible.
- Refer to Appendix I for the glazing acoustical ratings (glass, frame and seals). This is the specification of the windows and doors for the project and includes the required specified acoustical STC and Transmission Loss specified for all exterior windows and doors. This is required to be satisfied.
- The vibration levels inside of the residential buildings are predicted to be less than the 80 VdB threshold recommended by FTA based on the number of events. There are no regulatory requirements and therefore no mitigation is required.

If you have any questions or comments regarding this report, please do not hesitate to contact us.

Sincerely,
Veneklasen Associates, Inc.



John LoVerde, FASA
Principal

APPENDIX I – GLAZING REQUIREMENTS

In order to meet the predicted interior noise levels described in Section 3.4, the glazing shall meet the following requirements:

Table 4– Acoustical Glazing Requirements: Minimum Octave Band Transmission Loss and STC Rating

Nominal Thickness	Minimum Transmission Loss Octave Band Center Frequency (Hz)						Min. STC Rating
	125	250	500	1000	2000	4000	
1" dual	21	19	28	34	37	33	30
1" dual	23	22	30	36	37	36	33
1" dual	23	22	32	37	38	38	35
Storm (triple glazed)	24	30	36	44	49	45	40
Storm (triple glazed)	27	32	37	45	49	51	42
Balcony/Patio Door	18	16	28	34	36	37	30
Balcony/Patio Door	21	22	29	35	37	39	33
Balcony/Patio Door	24	28	35	36	37	42	36

The transmission loss values in the table above can likely be met with the following glazing assemblies:

1. STC 30: 1/8" monolithic – 3/4" airspace – 1/8" monolithic
2. STC 33: 3/16" monolithic – 11/16" airspace – 1/8" monolithic
3. STC 35: 1/4" monolithic – 1/2" airspace – 1/4" monolithic
4. STC 36: 1/4" monolithic – 1/2" airspace – 1/4" laminated
5. STC 40: 1/8" monolithic – 1/2" airspace – 1/8" monolithic – airspace – storm
6. STC 42: 3/16" monolithic – 7/16" airspace – 1/8" monolithic – airspace - storm

An assembly's frame and seals may limit the performance of the overall system. The window systems selected for the project shall not be selected on the basis of STC rating alone but must meet the system STC rating provided in Table 4 above. Additionally, the assemblies given above are provided as a basis of design, but regardless of construction, the octave band Transmission Loss (TL) of the particular system selected must meet the minimum values in Table 4 above. Therefore, systems selected must meet the minimum Transmission Loss values and STC ratings provided in Table 4.

Independent laboratory acoustical test reports should be provided for review by the design team to ensure compliance with glazing acoustical performance requirements. Lab shall be a current member of the National Voluntary Laboratory Accreditation Program (NVLAP) under the National Institute for Standards and Technology (NIST) for accreditation and shall be pre-approved by Veneklasen Associates, Inc. Tests are required to be completed in North America. Lab reports shall be in compliance with ASTM standard E90 and be no more than 10 years old (from date of submission on specific project). VA requires invitation to witness acoustical testing completed to demonstrate compliance with the requirements of this report and reserves the right to exclude test reports from laboratories that are not pre-approved by Veneklasen Associates, Inc. for the specific test standard. The tests shall be performed on the entire assembly, including frame and seals and hardware, if applicable to be used for the project. If test reports are not available for the assembly, VA would require that the assembly be tested at a third-party independent lab accredited through NVLAP for the ASTM E90.

The BAC report questioned the purpose for these requirements regarding review of the laboratory test reports. Veneklasen has adopted these standards as a result of variation between laboratory testing agencies. Adoption of this process improves consistency and minimizes risk to a project developer, design/construction team, glazing manufacturers, the City, and future project residents.

APPENDIX II – REFERENCE HISTORICAL ACOUSTICAL STUDIES, MEASUREMENT EXCERPTS**Figure 2 - Edward L. Pack Associates Report, June 2018**

- 11 -

V. Analysis of the Noise Levels**A. Existing Noise Levels**

To determine the existing noise environment at the site, continuous recordings of the sound levels were made at two locations. Location 1 was 37 from the centerline of the UPRR/CalTrain/Amtrak tracks. Location 2 was 40 from the centerline of Monterey Road, corresponding to the property line along the roadway. The noise level measurement locations are shown in Figure 2 on page 12.

The measurements were made on May 9-10, 2018 using a Larson-Davis 831 Precision Integrating Sound Level Meter location 1 and a Larson Davis LDL 812 Precision Integrating Sound Level Meter at Location 2. The meters yield, by direct readout, a series of descriptors of the sound levels versus time, as described in Appendix B. The measured descriptors included the L_1 , L_{10} , L_{50} , and L_{90} , i.e., those levels that are exceeded 1%, 10%, 50%, and 90% of the time. Also measured were the maximum and minimum levels, and the continuous equivalent-energy levels (L_{eq}), which are used to calculate the DNL. The sound level meter used for the railroad measurements also provides narrow band frequency data of the train passbys.

The measurements were made for a total period of 24 continuous hours and included recordings of the noise levels during representative hours of the daytime and nighttime periods of the DNL index. The results of the measurements are shown in data tables in Appendix C.

As shown in the tables, the L_{eq} 's at measurement Location 1, 37 ft. from the centerline of the UPRR/CalTrain tracks, ranged from 47.3 to 70.5 dBA during the daytime and from 37.9 to 73.1 dBA at night. The L_1 values ranged from 55.3 to 89.9 dBA during the daytime and from 48.0 to 64.2 dBA at night.

Figure 3 - Edward L. Pack Associates Report, June 2018

- 12 -

The L_{eq} 's at measurement Location 2, 40 ft. from the centerline of Monterey Road, ranged from 64.2 to 74.3 dBA during the daytime and from 52.4 to 70.4 dBA at night. The L_1 values ranged from 74.9 to 77.7 dBA during the daytime and 65.5 to 78.9 dBA at night.

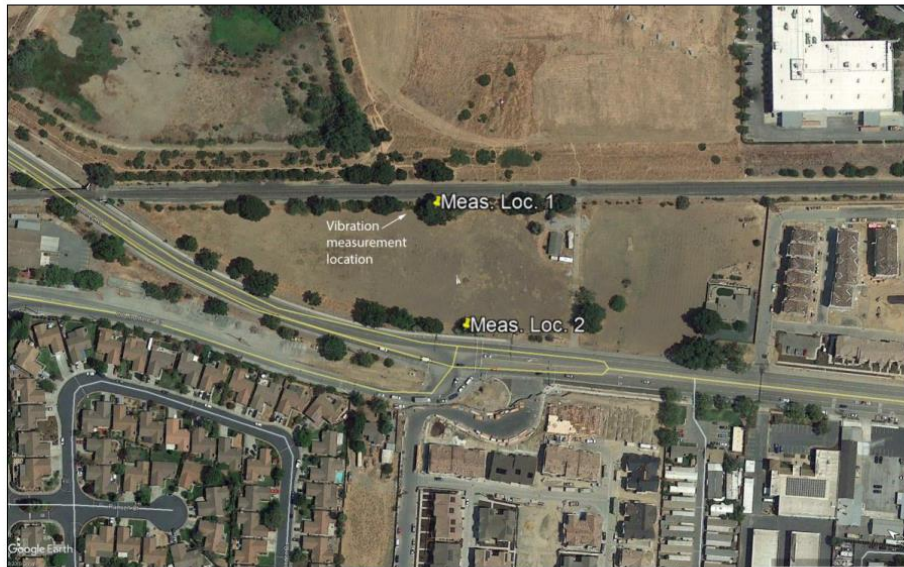
**FIGURE 2 – Noise and Vibration Measurement Locations**

Figure 4 - Edward L. Pack Associates Report, June 2018

- 13 -

Table I provides the passby times, types of trains, passby average noise levels, the hourly L_1 values and the hourly L_{eq} values during the trains passbys.

TABLE I				
Railroad Passby Times and Sound Levels, 37 ft. from UPRR Tracks				
Time	Train Type	Passby L_{eq}	Hourly L_{eq}	Hourly L_1
6:51 PM.	CalTrain	89.5	60.9	60.2
7:33 PM	CalTrain	91.1	65.9	65.0
7:48 PM	Amtrak	98.8		
8:25 PM	Freight	91.3	68.9	66.4
8:58 PM	Freight	86.5		
9:15 PM	Freight	81.5	72.5	89.9
9:53 PM	Freight	88.9		
10:54 PM	Freight	94.5	72.9	64.2
3:15 AM	Freight	90.0	64.9	56.5
6:25 AM	CalTrain	88.4	63.5	63.1
6:46 AM	CalTrain	90.3		
7:30 AM	CalTrain	87.5	58.9	58.4
10:50 AM	Amtrak	93.1	64.5	63.2
1:03 PM	Freight	90.0	67.5	85.4

Figure 5 - Edward L. Pack Associates Report, June 2018

- 14 -

Traffic and railroad noise dissipates at the rate of 3 to 6 dB for each doubling of the distance from the source to the receiver. Therefore, other locations on the site at greater distances from the roadway or railroad will have lower noise levels. Additional noise shielding will be provided by interposed buildings of the project.

B. Future Noise Levels

Future traffic volume data for Monterey Road were provided in the General Plan TIA. The future 2030 traffic volume is predicted to increase to 23,500 vehicles ADT. As the existing traffic volume is estimated to be 16,955 vehicles ADT, the predicted increase in traffic volume yields a 1 dB increase in the traffic noise levels.

Information on future rail operations is not available. Therefore, we are assuming the future operations will be similar to current levels.

C. Noise Exposures

The DNL's for the survey locations were calculated by decibel averaging of the L_{eq} 's as they apply to the daily time periods of the DNL index. The DNL is a 24-hour noise descriptor that uses the measured L_{eq} values to calculate a 24-hour time-weighted average noise exposure. The formula used to calculate the DNL is described in Appendix B. Adjustments were applied to the measured noise levels to account for the various setback distances from the measurement locations using methods established by the Highway Research Board and Wyle Laboratories. The results of the calculations are shown in the data tables in Appendix C.

The results of the calculations reveal that the noise exposures at measurement Location 1, 37 ft. from the centerline of the railroad tracks is 71 dB DNL. Under future traffic conditions, the noise exposures are expected to remain at 71 dB DNL.

Figure 6 - Edward L. Pack Associates Report, June 2018

- 15 -

The noise exposures at measurement Location 2, 40 ft. from the centerline of Monterey Road is 71 dB DNL. Under future traffic conditions, the noise exposures are expected to increase to 72 dB DNL.

D. Ground-Borne Vibration

To determine the levels of railroad induced ground vibration, vibration level measurements were made near Location 2, 40 ft. from the centerline of the railroad tracks. The measurements were made on May 10, 2018 using a PCB Piezotronics 393A03 accelerometer and a Larson Davis 2900 Dual Channel Real Time analyzer. The analyzer measured real time 1/3-octave band vibration levels, in dB re: 1×10^{-6} in./sec. over the frequency range of 0.8 to 10 kHz. The vibration levels from 8 Hz to 80 Hz were used to assess the impact of ground borne vibration on homes of the project.

The bare ground railroad vibration levels of two measured CalTrain passbys were 61 and 62 VdB between 8 Hz and 80 Hz.

The bare ground railroad vibration level of one Amtrak train passby was 63 VdB between 8 Hz and 80 Hz.

The bare ground railroad vibration level of two measured freight passbys were 64 and 70 VdB between 8 Hz and 80 Hz.

E. Interior Noise Exposures

To determine the interior noise exposures, a 15 dB reduction was applied to the exterior noise exposures at various building setback locations to represent the attenuation provided by a typical building shell under an *annual-average* condition. The annual-average condition assumes the installation of standard dual-pane, thermal insulating windows and glass doors that are kept open up to 50% of time for natural ventilation.

Expected interior noise exposures are shown in the cross section tables.

Figure 7 - Veneklasen Report Excerpt (Gipetti Hill, Morgan Hill), April 2014**3.0 EXTERIOR NOISE AND VIBRATION MEASUREMENTS**

The primary noise and vibration source impacting the site is railroad operations. Vehicular movement on Monterey Road is a secondary noise source. VA performed 24-hour noise measurements at the site from the morning of April 7, 2014 to the morning of April 8, 2014. Noise and vibration measurements were taken at a distance of 20 feet from the railroad track. A short-term noise measurement was also taken at the site on the morning of April 8, approximately 10 feet from Monterey Road.

Noise measurements were performed using a Bruel&Kjaer type 2260 sound level meter which logged the average and maximum noise levels. The microphone was mounted at approximately five feet above the ground. Ground vibration levels were measured using an accelerometer mounted to a stake driven into the dirt and similarly logged using a Bruel&Kjaer 2260 analyzer.

A total of 12 trains passed the site during the day of measurement, with 6 during nighttime hours (10 pm – 7 am). At least 6 of the pass-bys were commuter trains, either Caltrain or Amtrak, and at least 2 were freight trains. The noise and vibration levels from the freight trains were not significantly different from the commuter trains, although the pass-bys are longer in duration.

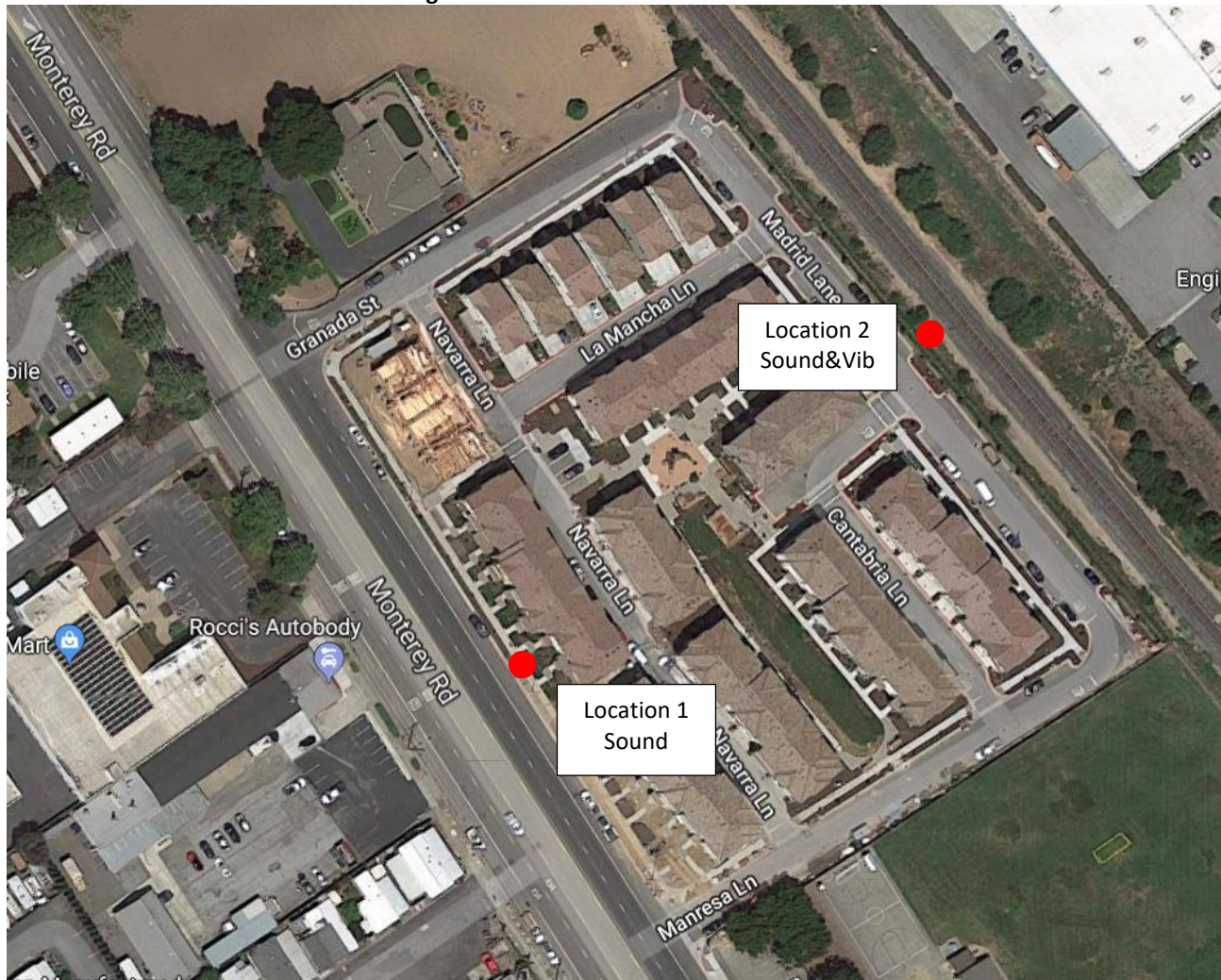
Figure 8 - 2014 Measurement Locations

Table 5 - Summary of Train Events, 20-foot Distance, April 2014

Start Time	Description	Passby Time	L1 (dBA)	VdB
4/7/14 10 AM	Commuter	10:27	55	72
4/7/14 11 AM	Commuter	-	59	-
4/7/14 12 PM	Commuter	12:15	54	72
4/7/14 1 PM	Commuter	-	58	-
4/7/14 2 PM	Commuter	-	54	-
4/7/14 3 PM	Commuter	-	54	-
4/7/14 4 PM	Commuter	-	55	-
4/7/14 5 PM	Commuter	5:07	56	81
4/7/14 6 PM	Commuter	6:47	56	67
4/7/14 7 PM	Commuter	-	55	-
4/7/14 8 PM	Commuter	8:27	60	69
4/7/14 9 PM	Commuter	-	55	-
4/7/14 10 PM	Commuter	10:22	86	70
	Freight	10:32		76
4/7/14 11 PM	Commuter	11:58	51	76
4/8/14 12 AM	Freight	12:53	70	74
4/8/14 1 AM	Commuter	-	45	-
4/8/14 2 AM	Commuter	-	46	-
4/8/14 3 AM	Commuter	-	50	-
4/8/14 4 AM	Commuter	-	51	-
4/8/14 5 AM	Commuter	-	54	-
4/8/14 6 AM	Commuter	6:24	62	NA ⁴
	Commuter	6:45		
4/8/14 7 AM	Commuter	7:22	58	
4/8/14 8 AM	Commuter	-	52	

⁴ Monitor terminated at midnight on 4/8/14; no levels captured.

APPENDIX III – SUMMARY OF CALCULATION INPUT

Table 6 - Summary of Source Levels, Frequency Content (Level per Measurement Location)

Source	Distance from Source	Sound Pressure Level Octave Band Center Frequency (Hz)						
		63	125	250	500	1000	2000	4000
Monterey Road	10 ft.	67	69	64	61	64	60	52
Train Locomotive	20 ft.	95	90	90	88	88	85	81

APPENDIX IV – SAMPLE CALCULATION

Figure 9 - Sample Exterior-to-Interior Calculation

Project Name: Morgan Hill 7

Plan: typical

Floor: 3

Room: bed

Receiving Room Absorption

		Location	Material	Code	Area
Length	10				
Width	11	Ceiling	1" Gypboard	22	110
Height	9	Floor	Vinyl Tile	6	55
		Walls	1" Gypboard	22	306
Volume	990	Furnishings	King Bed	100	55
F/C area	110	Glazing	1/8" Glass	47	72
Wall area	378		Enter Code & Area		
			Enter Code & Area		
			Enter Code & Area		
			Enter Code & Area		
Total Surface Area(ft²) =					598

Total Interior Level: 38

(excluding 63 Hz): 37

Maximum Level: 50

Reverb Time

Frequency (Hz)	Reverb Time (s)
63	0.3
125	0.4
250	0.5
500	0.6
1000	0.7
2000	0.6
4000	0.5
8000	0.4

			63	125	250	500	1000	2000	4000	8000	dBA
		Room Constant	178	139	104	90	74	80	79	79	

Exterior Noise Level

		Level	Source type	63	125	250	500	1000	2000	4000	8000	dBA
		67	Railroad LDN	69.8	65.4	64.7	63.4	62.6	59.5	55.2	46.6	67.0
		40	Monterey Road	39.8	41.8	36.8	33.8	36.8	32.8	24.8	22.8	40.0
			<N/A>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	CNEL, LDN, or average:		Total	69.8	65.4	64.7	63.4	62.6	59.5	55.2	46.6	67.0

		Level	Source type	63	125	250	500	1000	2000	4000	8000	dBA
	Maximum:	80	Locomotive pass	82.5	77.4	77.3	75.9	75.6	72.9	68.9	60.0	80.0

Exterior Assemblies

	Area	Assembly Type	63	125	250	500	1000	2000	4000	8000	dBA
wall	66	VA Typical Wall (stucco,2x4ws,5/8gyp) wyle	51.5	38.2	31.7	23.0	18.1	10.7	3.4	-5.2	29.5
glazing	24	STC 42, Milgard 7420, 3/16 7/16 1/8 storm	47.1	36.8	32.3	26.6	20.7	11.3	5.0	-6.6	29.2
door	48	STC 36 Milgard Slid glass door(7/32lam 5/8 1/4)	49.1	41.8	39.4	31.2	30.5	26.6	17.4	6.4	36.2
		<N/A>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		<N/A>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Total	54.4	44.2	40.7	33.0	31.1	26.8	17.8	6.9	37.7

Figure 10 - Sample Barrier Insertion Loss Calculation

Barrier Insertion Loss for Point Source									
(Use same units as sound speed in cell M4)									
Source to barrier distance	30		A	30					
Source height	8		B	22.142					
Observer to barrier distance	22		C	52.06					
Observer height	5.5								
Barrier height	8								
Barrier: 0, Berm: 1	0								
Zone	Shadow								
Distance from Source	52								
Octave band (Hz)	63	125	250	500	1000	2000	4000	8000	dBA
SPL at receiver (distance loss only)	82.5	77.4	77.3	75.9	75.6	72.9	68.9	60.0	80.0
Attenuation due to barrier (dB)	5	5	6	6	7	9	11	14	7.4
SPL at receiver with barrier	77	72	72	70	68	64	58	46	72.6

January 30, 2020

City Ventures

444 Spear Street, Suite 200
San Francisco, California 94105

Attention: Samantha Hauser | Senior Vice President of Development

Subject: **Morgan Hill 7**
Morgan Hill, California
Exterior Noise Analysis – Barrier Wall from Building 10 through Building 14
Veneklasen Project No. 4616-015

Dear Ms. Hauser:

Veneklasen Associates (Veneklasen) has completed our review of the exterior noise at the proposed Morgan Hill 7 development in Morgan Hill, California. This letter specifically addresses the City's request to reduce or remove the barrier that is located between Buildings 10 and 14. Further, the City indicated the requirement to retain meeting the requirements set forth in the California State Building Code as adopted by the City of Morgan Hill. Veneklasen has completed calculations and reviewed the conditions. The following summarizes our findings for the barrier location from Building 10 through Building 14:

1. Veneklasen reviewed reducing the barrier height while retaining compliance with the California State Building Code requirements as adopted by the City of Morgan Hill.
2. Removal of the barrier at this location is not possible. Removal of a solid barrier to an open system (like a wrought iron fence) would result in non-compliance with the California State Building Code as adopted by the City of Morgan Hill.
3. Calculations indicated that the minimum barrier height is 8 feet. Computer models of 7 foot barrier shows non-compliance. Therefore, the minimum barrier height for this noise exposure is 8 feet. City Ventures has indicated that they will construct this height.
4. The material for the barrier is not required to be concrete block or masonry. (Note that this applies to the entire barrier.)
5. The barrier should be continuous and have no gaps.
6. The barrier can be constructed from wood, concrete, masonry or other material. For instance, the barrier can be a gapless wood fence.
7. The barrier should have a minimum density of 2 lbs./square foot.

If the parameters that are described above are followed, then the parameters within the Veneklasen Exterior Noise and Exterior Façade Acoustical Analysis apply and show compliance with Building Code.

If you have any questions or comments regarding this information, please do not hesitate to contact us.

Sincerely,
Veneklasen Associates, Inc.



John LoVerde, FASA
Principal

Appendix G
Traffic Impact Analysis



HEXAGON TRANSPORTATION CONSULTANTS, INC.



Monterey Gateway

Traffic Impact Analysis (TIA)

Prepared for:

Raney Planning & Management, Inc.

November 27, 2019



Hexagon Office: 8070 Santa Teresa Boulevard, Suite 230
Gilroy, CA 95020
Hexagon Job Number: 19RD28
Phone: 408.846.7410
Client Name: Raney Planning & Management, Inc.

San Jose • Gilroy • Pleasanton • Phoenix

www.hextrans.com

Areawide Circulation Plans Corridor Studies Pavement Delineation Plans Traffic Handling Plans Impact Fees Interchange Analysis Parking
Transportation Planning Traffic Calming Traffic Control Plans Traffic Simulation Traffic Impact Analysis Traffic Signal Design Travel Demand Forecasting

Table of Contents

Executive Summary	i
1. Introduction	1
2. Existing Conditions	8
3. Existing Plus Project Conditions	17
4. Other Transportation Issues	27
5. Year 2025 Cumulative Conditions	32
6. Conclusions	38

Appendices

Appendix A	Traffic Counts
Appendix B	Volume Summary
Appendix C	Level of Service Calculations
Appendix D	Signal Warrant Analysis
Appendix E	Poisson Probability (Queuing) Calculations

List of Tables

Table ES 1	Intersection Level of Service Summary	v
Table ES 2	Freeway Segment Capacity	vi
Table 1	Signalized Intersection Level of Service Definitions Based on Control Delay	6
Table 2	Unsignalized Intersection Level of Service Definitions Based on Control Delay	7
Table 3	Existing Intersection Levels of Service	16
Table 4	Project Trip Generation Estimates	20
Table 5	Existing Plus Project Intersection Levels of Service	25
Table 6	Freeway Segment Capacity	26
Table 7	Site Access Queuing Analysis	30
Table 8	General Plan 2035 Trip Generation Estimates	35
Table 9	Year 2025 Cumulative Intersection Levels of Service	37

List of Figures

Figure 1	Site Location and Study Intersections	2
Figure 2	Site Plan	3
Figure 3	Existing Bicycle Facilities	10
Figure 4	Existing Transit Services	12
Figure 5	Existing Lane Configurations	14
Figure 6	Existing Traffic Volumes	15
Figure 7	Project Trip Distribution	22
Figure 8	Project Trip Assignment	23
Figure 9	Existing Plus Project Traffic Volumes	24
Figure 10	Project Trips at Site Access Driveway	28
Figure 11	Year 2025 Cumulative No Project Traffic Volumes	33
Figure 12	Year 2025 Cumulative Plus Project Traffic Volumes	36

Executive Summary

This report presents the results of the traffic impact analysis conducted for the proposed Monterey Gateway residential development in Morgan Hill, California. The 5.67-acre project site is located at 18110 Monterey Road. The site is mostly undeveloped with the exception of one home. The project as proposed will consist of 101 townhomes (which includes four live-work units) and 3,500 square feet (s.f.) of retail space. Access to the residential development is proposed via a new east approach leg at the existing Old Monterey Road and Monterey Road intersection.

Scope of Study

The potential impacts related to the proposed development were evaluated following the standards and methodologies set forth by the City of Morgan Hill and the Santa Clara Valley Transportation Authority (VTA). The VTA administers the County Congestion Management Program (CMP). The study includes an analysis of AM and PM peak-hour traffic conditions at nine signalized intersections and two unsignalized intersections. An analysis of freeway segments was not performed because the proposed project would not add traffic equal to at least one percent of capacity of any freeway segment.

Traffic conditions at all of the study intersections were analyzed for the weekday AM and PM peak hours. The weekday AM peak hour of traffic is generally between 7:00 AM and 9:00 AM and the weekday PM peak hour is typically between 4:00 PM and 6:00 PM. It is during these periods that the most congested traffic conditions occur on a typical weekday. Traffic conditions were evaluated for the scenarios described below.

- Scenario 1: **Existing Conditions.** Existing conditions represent existing peak-hour traffic volumes on the existing roadway network. Existing peak-hour traffic volumes were obtained from recently completed traffic studies and supplemented with new manual turning-movement counts at the study intersections, where counts were either unavailable or outdated (more than 2 years old).
- Scenario 2: **Existing Plus Project Conditions.** Project-generated traffic volumes were added to existing traffic volumes to estimate existing plus project conditions. Existing plus project conditions were evaluated relative to existing conditions in order to determine potential project impacts.
- Scenario 3: **Year 2025 Cumulative Conditions.** Year 2025 Cumulative conditions represents traffic growth projected to occur in the Year 2025 without the proposed project on the existing transportation network. Projected 2025 traffic growth was developed by interpolating the projected Year 2035 traffic growth.

Scenario 4: **Year 2025 Cumulative with Project Conditions.** Year 2025 with project conditions will consist of Year 2025 traffic conditions with the addition of proposed project traffic.

Project Trip Generation

Through empirical research, data have been collected that correlate to common land uses their propensity for producing traffic. Thus, for the most common land uses there are standard trip generation rates that can be applied to help predict the future traffic increases that would result from a new development. Trip estimates for the proposed project were developed based on trip generation rates obtained from ITE's Trip Generation, Tenth Edition, 2017, and reductions for the proposed mixed-use land uses and pass-by-trips for retail land uses.

Based on the ITE trip generation rates, reductions for mixed-use, pass-by-trips and credit for the existing use, it is estimated that the proposed project would generate a net additional 1,034 daily vehicle trips, with 77 trips (21 inbound and 56 outbound) occurring during the AM peak hour and 106 trips (65 inbound and 41 outbound) occurring during the PM peak hour.

Existing Plus Project Intersection Levels of Service Analysis

The intersection level of service is summarized in Table ES-1. The results show all study intersections are projected to operate at acceptable levels of service under existing plus project conditions.

Freeway Segment Capacity

Per CMP technical guidelines, freeway segment level of service analysis shall be conducted on all segments to which the project is projected to add one percent or more to the segment capacity. Since the project is not projected to add one percent to any freeway segments in the area, freeway analysis for the CMP was not required. The percentage of traffic projected to be added by the project to freeway segments in the project area is summarized in Table ES-2.

Year 2025 Intersection Levels of Service Analysis

The intersection level of service is summarized in Table ES-1. The results show that one of the study intersections would be significantly impacted by the project under Year 2025 Cumulative conditions according to the City of Morgan Hill impact criteria. The proposed improvements to mitigate the impact are described below.

Monterey Road and Central Avenue

The results show that the intersection of Monterey Road and Central Avenue would operate at unacceptable and would have traffic volumes that meet thresholds that warrant signalization under Year 2025 Cumulative without and with project conditions during the AM peak hour when measured against the City of Morgan Hill level of service standards.

Therefore, based on the City's impact criteria and signal warrant analysis, the proposed project would result in a significant impact at the Monterey Road and Central Avenue intersection.

This intersection was also shown to operate at an unacceptable LOS and identified to be signalized in the General Plan. With signalization, the intersection would operate at acceptable LOS C or better during both peak hours under Year 2025 Cumulative with project conditions.

All other study intersections are projected to operate at acceptable levels of service under Year 2025 Cumulative without and with project conditions, during each of the peak hours analyzed.

Other Transportation Issues

Site Access

A new east approach to the intersection of Monterey Road and Old Monterey Road would serve as the project driveway. A southbound left-turn lane would also be added to this intersection to facilitate full-access to the project site.

On-Site Circulation

As shown on the site plan, an internal roadway system provides a connection between every residential unit and retail space to the project driveway. The proposed 26-foot wide internal roadway would be sufficient to serve two-way traffic throughout the project site.

The project site plan shows sidewalks along the main internal drive aisle and the project frontage on Monterey Road. The proposed pedestrian sidewalks along the project site frontage would provide a connection to other existing pedestrian facilities (sidewalks, crosswalks, bus stops, etc.) along Monterey Road. However, there would still be a short segment of missing sidewalks (approximately 150 feet) along the adjacent property's frontage south of the project site on the east side of Monterey Road between the project site and Granada Street.

The project site should be designed following City of Morgan Hill design standards and provide adequate width and turn-radii at and along all drive/parking aisles to allow for two-way circulation and adequate circulation of larger vehicles (such as emergency trucks, garbage truck, and delivery trucks) throughout the project site. Adhering to City of Morgan Hill standards and requirements, and implementing the above recommendations, the proposed site access point and layout of the surface parking areas would be adequate to accommodate circulation of both passenger and emergency vehicles.

Emergency Vehicle Access and Circulation

The 26-foot wide internal roadway would provide emergency vehicles (fire trucks) sufficient space to access each of the residential units and retail space on-site. There are several dead-end drive aisles that would not provide sufficient space for emergency vehicles to turn around. However, the dead-ends will be located along short segments of roadways. Thus, vehicles can back out the roadways.

Intersection Operations Analysis

Monterey Road and Old Monterey Road

The queuing analysis indicates that the maximum vehicle queues for the southbound left-turn movement and westbound approach are projected to be 75 and 50 feet long, respectively. Therefore, the southbound left-turn pocket should be designed to accommodate a 75-foot long queue. The driveway throat between Monterey Road and the internal roadway is measured to be approximately 50

feet on the site plan, which would provide sufficient storage for two vehicles to accommodate the projected queues of 50 feet long.

Transit, Pedestrian, and Bicycle Analysis

The project site is not directly served by any bus route. The nearest bus stops for Route 68 to the project are located within walking distance approximately $\frac{1}{4}$ of a mile from the project near the intersection of Hale Avenue and Llagas Road. A typical mode split in Morgan Hill would be a three percent transit share. Assuming up to three percent transit mode share for the project equates to no more than three transit riders during either the AM or PM peak hours. The transit ridership demands of the proposed project would not justify the enhancement of the existing transit facilities.

Sidewalks are provided along on the east side of Monterey Road with a short discontinuity between Old Monterey Road and Granada Street and on the west side of street south of Old Monterey Road. The project is proposing to provide sidewalks along the project frontage on Monterey Road, but there would still be a missing sidewalk along the adjacent property south of the project site. The signalized intersection of Monterey Road and Old Monterey Road currently has a crosswalk across the south approach providing a connection between sidewalks on both sides of Monterey Road. These pedestrian facilities will provide a pedestrian connection between the project site and nearby land uses along Monterey Road.

Bike lanes are currently provided along the length of Monterey Road with a discontinuity between Main Avenue and Dunne Avenue. There also are bike lanes along Main Avenue, Cochrane Road, Butterfield Boulevard, and Hale Avenue. It is expected that bicycle trips would comprise no more than one percent of the total project-generated trips. Thus, the project could potentially generate no more than one new bicycle trip during each of the peak hours. The demand generated by the proposed project could be accommodated by the existing bicycle facilities in the vicinity of the project site.

Table ES 1
Intersection Level of Service Summary

Int. #	Intersection	Control	LOS Standard	Peak Hour	Count Date	Existing			Existing Plus Project					Year 2025 Cumulative			Year 2025 Cumulative with Project				
						Warrant Met?	Delay ¹	LOS	Warrant Met?	Delay ¹	LOS	Incr. In Crit. Delay	Incr. In Crit. V/C	Warrant Met?	Delay ¹	LOS	Warrant Met?	Delay ¹	LOS	Incr. In Crit. Delay	Incr. In Crit. V/C
1	Monterey Road and Cochrane Road	Signal	E	AM	05/08/18	--	28.1	C	--	28.1	C	0.2	0.005	--	29.1	C	--	29.2	C	0.3	0.005
				PM	05/08/18	--	24.0	C	--	24.9	C	1.1	0.013	--	25.6	C	--	26.5	C	1.1	0.013
2	Monterey Road and Old Monterey Road	Signal	D	AM	10/24/19	--	10.8	B	--	18.5	B	2.4	0.121	--	11.0	B	--	20.4	C	5.2	0.168
				PM	10/24/19	--	15.0	B	--	22.9	C	6.0	0.038	--	16.6	B	--	25.2	C	7.1	0.041
3	Monterey Road and Wright Avenue	Signal	D	AM	03/28/19	--	19.1	B	--	19.1	B	0.0	0.002	--	21.0	C	--	21.1	C	0.1	0.002
				PM	03/28/19	--	20.4	C	--	20.4	C	0.1	0.004	--	21.8	C	--	21.9	C	0.1	0.004
4	Monterey Road and Central Avenue	TWSC	D	AM	03/28/19	No	19.5	C	No	20.1	C	N/A	N/A	Yes	36.9	E	Yes	39.4	E	N/A	N/A
				PM	03/28/19	No	15.7	C	No	15.9	C	N/A	N/A	No	23.0	C	No	23.6	C	N/A	N/A
5	Monterey Road and Main Avenue	Signal	F	AM	05/08/18	--	44.2	D	--	44.4	D	0.3	0.006	--	46.4	D	--	46.6	D	0.3	0.006
				PM	05/08/18	--	45.1	D	--	45.2	D	0.1	0.003	--	47.6	D	--	47.7	D	0.1	0.003
6	Butterfield Boulevard and Cochrane Road	Signal	D	AM	05/08/18	--	12.3	B	--	12.4	B	0.0	0.007	--	12.6	B	--	12.7	B	0.1	0.007
				PM	05/08/18	--	12.0	B	--	11.9	B	0.0	0.000	--	13.5	B	--	13.4	B	0.0	0.000
7	Sutter Boulevard and Cochrane Road	Signal	D	AM	05/08/18	--	17.2	B	--	17.2	B	0.0	0.007	--	17.5	B	--	17.6	B	0.0	0.007
				PM	05/08/18	--	17.9	B	--	18.0	B	-0.1	0.005	--	17.5	B	--	17.5	B	0.1	0.013
8	Madrone Parkway/Cochrane Plaza and Cochrane Road	Signal	E	AM	05/08/18	--	19.1	B	--	19.2	B	-2.9	-0.003	--	18.9	B	--	18.9	B	0.0	0.001
				PM	05/08/18	--	31.4	C	--	31.2	C	-0.1	0.005	--	31.9	C	--	31.8	C	-0.1	0.005
9	US 101 Southbound Ramps and Cochrane Road	Signal	E	AM	05/08/18	--	12.8	B	--	12.8	B	0.2	0.011	--	13.9	B	--	14.0	B	0.2	0.011
				PM	05/08/18	--	16.5	B	--	16.7	B	0.3	0.015	--	19.5	B	--	19.8	B	0.6	0.015
10	US 101 Northbound Ramps and Cochrane Road	Signal	E	AM	05/08/18	--	8.6	A	--	8.6	A	0.0	0.000	--	7.9	A	--	7.9	A	0.0	0.000
				PM	05/08/18	--	11.3	B	--	11.3	B	0.0	0.002	--	11.5	B	--	11.5	B	0.0	0.002
11	Old Monterey Road and Llagas Road	AWSC	D	AM	10/24/19	No	8.4	A	No	8.4	A	N/A	N/A	No	8.5	A	No	8.5	A	N/A	N/A
				PM	10/24/19	No	8.4	A	No	8.4	A	N/A	N/A	No	8.9	A	No	8.9	A	N/A	N/A
¹ The reported delay and corresponding level of service for signalized and all-way stop-controlled intersections represent the average delay for all approaches at the intersection. The reported delay and corresponding level of service for two-way stop-controlled intersections are based on the stop-controlled approach with the highest delay. Bold indicates unacceptable level of service or signal warrant met. Bold and boxed indicate significant impact.																					

Table ES 2
Freeway Segment Capacity

#	Freeway Segment	Direction	Project Trips					
			Mixed-Flow Lane			HOV Lane		
			Volume (pc/hr/ln)	Capacity ¹ (pc/hr/ln)	% of Capacity	Volume (pc/hr/ln)	Capacity ¹ (pc/hr/ln)	% of Capacity
1	US 101 from Tennant Avenue to East Dunne Avenue	NB	1	2,300	0.03	--	--	--
		NB	2	2,300	0.10	--	--	--
2	US 101 from East Dunne Avenue to Cochrane Road	NB	0	2,300	0.01	--	--	--
		NB	1	2,300	0.04	--	--	--
3	US 101 from Cochrane Road to Coyote Creek Golf Drive	NB	6	2,300	0.26	7	1,650	0.42
		NB	5	2,300	0.20	4	1,650	0.24
4	US 101 from Coyote Creek Golf Drive to Cochrane Road	SB	3	2,300	0.12	1	1,650	0.06
		SB	7	2,300	0.30	8	1,650	0.48
5	US 101 from Cochrane Road to East Dunne Avenue	SB	1	2,300	0.04	--	--	--
		SB	1	2,300	0.03	--	--	--
6	US 101 from East Dunne Avenue to Tennant Avenue	SB	2	2,300	0.09	--	--	--
		SB	1	2,300	0.06	--	--	--

Notes:
¹ Capacities for freeway mixed-flow and HOV lanes were obtained from VTA Transportation Impact Analysis Guidelines (October 2014)

1.

Introduction

This report presents the results of the traffic impact analysis conducted for the proposed Monterey Gateway residential development in Morgan Hill, California. The 5.67-acre project site is located at 18110 Monterey Road. The site is mostly undeveloped with the exception of one home. The project as proposed will consist of 101 townhomes (which includes four live-work units) and 3,500 square feet (s.f.) of retail space. Access to the residential development is proposed via a new east approach leg at the existing Old Monterey Road and Monterey Road intersection. The site location and study intersections are shown in Figure 1, and the site plan is shown in Figure 2.

Scope of Study

The potential impacts related to the proposed development were evaluated following the standards and methodologies set forth by the City of Morgan Hill and the Santa Clara Valley Transportation Authority (VTA). The VTA administers the County Congestion Management Program (CMP). The study includes an analysis of AM and PM peak-hour traffic conditions at nine signalized intersections and two unsignalized intersections. An analysis of freeway segments was not performed because the proposed project would not add traffic equal to at least one percent of capacity of any freeway segment. The study intersections are identified below.

Study Intersections

1. Monterey Road and Cochrane Road
2. Monterey Road and Old Monterey Road
3. Monterey Road and Wright Avenue
4. Monterey Road and Central Avenue (unsignalized)
5. Monterey Road and Main Avenue
6. Butterfield Boulevard and Cochrane Road
7. Sutter Boulevard and Cochrane Road
8. Madrone Parkway/Cochrane Plaza and Cochrane Road
9. US 101 Southbound Ramps and Cochrane Road
10. US 101 Northbound Ramps and Cochrane Road
11. Old Monterey Road and Llagas Road (unsignalized)

Traffic conditions at all of the study intersections were analyzed for the weekday AM and PM peak hours. The weekday AM peak hour of traffic is generally between 7:00 AM and 9:00 AM and the weekday PM peak hour is typically between 4:00 PM and 6:00 PM. It is during these periods that the

Figure 1
Site Location and Study Intersections

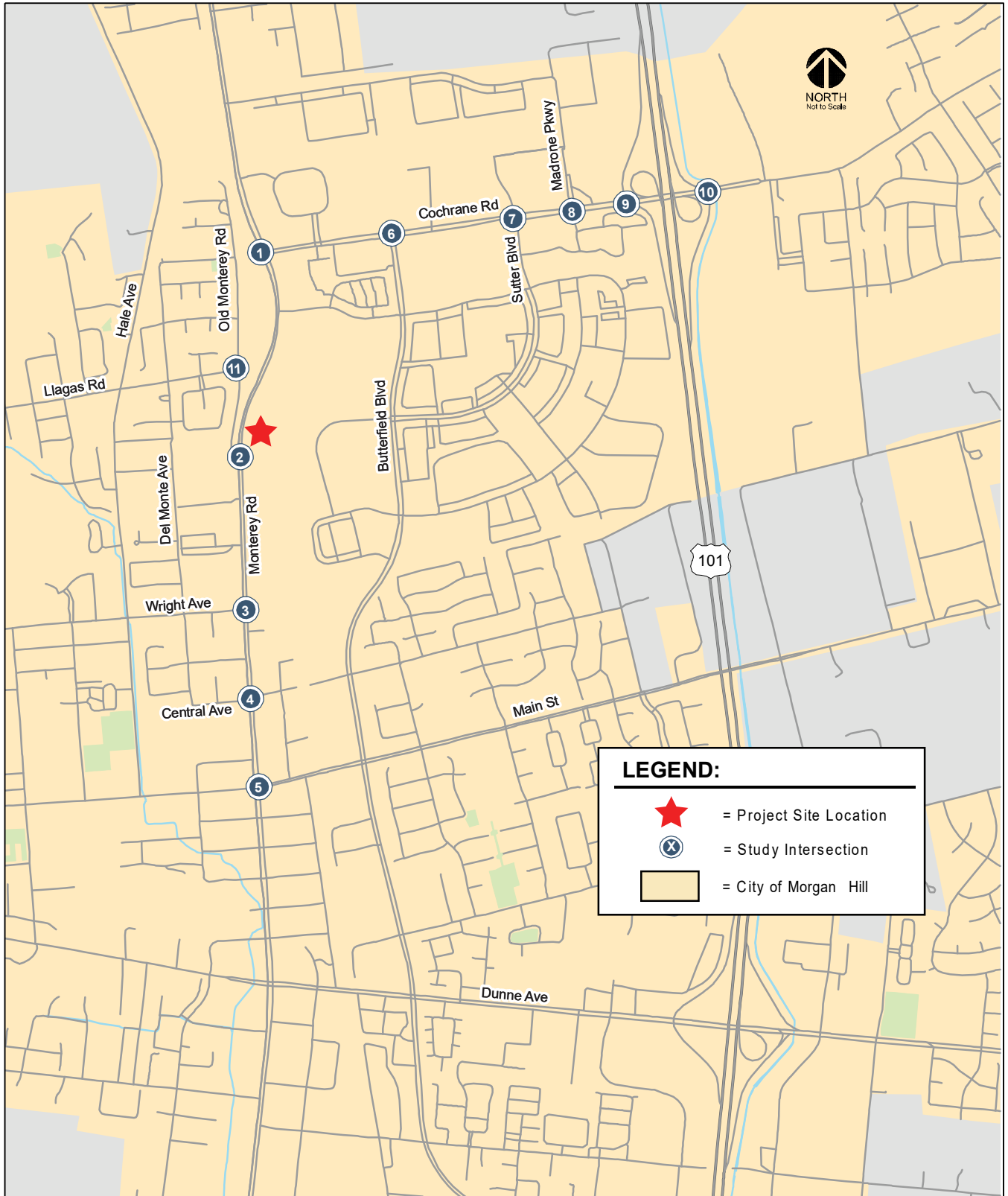
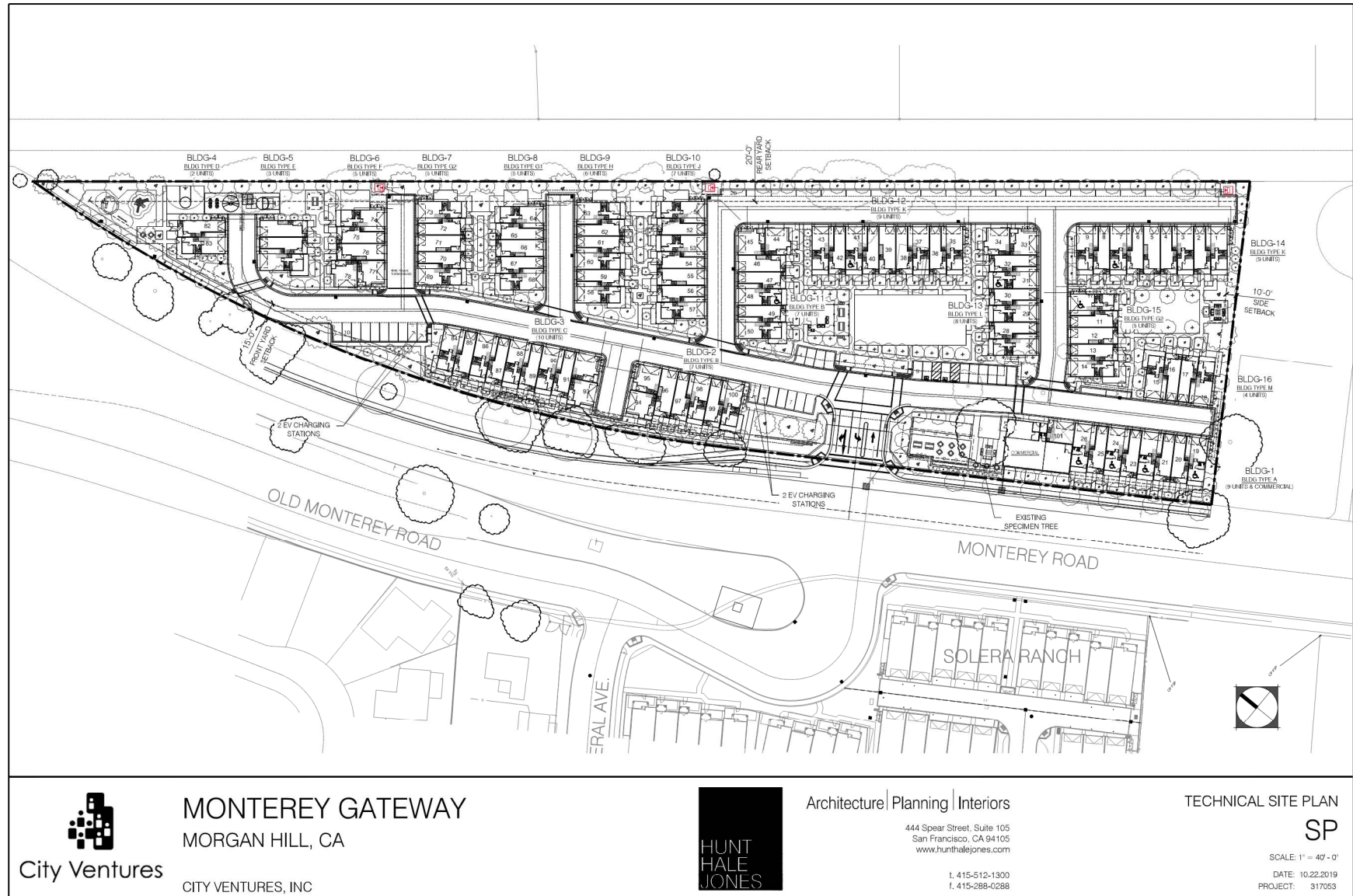


Figure 2
Site Plan



most congested traffic conditions occur on a typical weekday. Traffic conditions were evaluated for the scenarios described below.

- Scenario 1: **Existing Conditions.** Existing conditions represent existing peak-hour traffic volumes on the existing roadway network. Existing peak-hour traffic volumes were obtained from recently completed traffic studies and supplemented with new manual turning-movement counts at the study intersections, where counts were either unavailable or outdated (more than 2 years old).
- Scenario 2: **Existing Plus Project Conditions.** Project-generated traffic volumes were added to existing traffic volumes to estimate existing plus project conditions. Existing plus project conditions were evaluated relative to existing conditions in order to determine potential project impacts.
- Scenario 3: **Year 2025 Cumulative Conditions.** Year 2025 Cumulative conditions represents traffic growth projected to occur in the Year 2025 without the proposed project on the existing transportation network. Projected 2025 traffic growth was developed by interpolating the projected Year 2035 traffic growth.
- Scenario 4: **Year 2025 Cumulative with Project Conditions.** Year 2025 with project conditions will consist of Year 2025 traffic conditions with the addition of proposed project traffic.

Methodology

This section presents the methods used to determine the traffic conditions for each scenario described above. It includes descriptions of the data requirements, the analysis methodologies, and the applicable level of service standards.

Data Requirements

The data required for the analysis were obtained from new peak hour intersection turn-movement counts, previous traffic studies, the City of Morgan Hill, and field observations. The following data were collected from these sources:

- existing traffic volumes
- lane configurations
- signal timing and phasing
- model forecasts

Analysis Methodologies and Level of Service Standards

Traffic conditions at the study intersections were evaluated using level of service (LOS). *Level of Service* is a qualitative description of operating conditions ranging from LOS A, or free-flow conditions with little or no delay, to LOS F, or jammed conditions with excessive delays. The analysis methods are described below.

Signalized Intersections

Signalized study intersections are subject to the City of Morgan Hill level of service standards. The City of Morgan Hill level of service methodology is TRAFFIX, which is based on the 2000 *Highway Capacity Manual* (HCM) method for signalized intersections. TRAFFIX evaluates signalized intersections operations based on average delay time for all vehicles at the intersection. Since TRAFFIX is also the CMP-designated intersections level of service methodology, the City of Morgan Hill methodology

employs the CMP defaults values for the analysis parameters, which include adjusted saturation flow rates to reflect conditions in Santa Clara County. All intersections within the City of Morgan Hill are required to meet the City's LOS standard of LOS D, with the exception of the following:

- **LOS F** for Downtown intersections and segments including at Main/Monterey, along Monterey Road between Main and Fifth Street, and along Depot Street at First through Fifth Street;
- **LOS E** for the following intersections and freeway zones:
 - Main Avenue and Del Monte Avenue
 - Main Avenue and Depot Street
 - Dunne Avenue and Del Monte Avenue
 - Dunne Avenue and Monterey Avenue
 - Dunne Avenue and Church Street
 - Dunne Avenue and Depot Street
 - Cochrane Road and Monterey Road
 - Tennant Avenue and Monterey Road
 - Tennant Avenue and Butterfield Boulevard
 - Cochrane Road Freeway Zone: from Madrone Parkway/Cochrane Plaza to Cochrane Road/DePaul Drive
 - Dunne Avenue Freeway Zone: from Walnut Grove Drive/East Dunne Avenue to Condit Road/East Dunne Avenue
 - Tennant Avenue Freeway Zone: from Butterfield Boulevard/Tennant Avenue to Condit Road/Tennant Avenue

The correlation between average delay and level of service for signalized intersections is shown in Table 1.

Unsignalized Intersections

The methodology used to determine the level of service for unsignalized intersections is also TRAFFIX and the 2000 HCM methodology for unsignalized intersection analysis. This method is applicable for both two-way and all-way stop-controlled intersections. For the analysis of stop-controlled intersections, the 2000 HCM methodology evaluates intersection operations on the basis of average control delay time for all vehicles on the stop-controlled approaches. For the purpose of reporting level of service for one- and two-way stop-controlled intersections, the delay and corresponding level of service for the stop-controlled minor street approach with the highest delay is reported. For all-way stop-controlled intersections, the reported average delay and corresponding level of service is the average for all approaches at the intersection. The City uses a minimum acceptable level of service standard of LOS D for unsignalized intersections, in accordance with its adopted threshold of significance in its Guidelines for Preparation of Transportation Impact Reports. The correlation between average delay and level of service for unsignalized intersections is shown in Table 2.

Signal Warrants

The level of service analysis at unsignalized intersections is supplemented with an assessment of the need for signalization of the intersection. The need for signalization of unsignalized intersections is assessed based on the Peak Hour Volume Warrant (Warrant 3) described in the *California Manual on Uniform Traffic Control Devices for Streets and Highways (CA MUTCD)*, Part 4, Highway Traffic Signals, 2014. This method makes no evaluation of intersection level of service, but simply provides an indication whether vehicular peak hour traffic volumes are, or would be, sufficient to justify installation of a traffic signal. The decision to install a traffic signal should not be based purely on the warrants alone. Instead, the installation of a signal should be considered and further analysis performed when one or

Table 1
Signalized Intersection Level of Service Definitions Based on Control Delay

Level of Service	Description	Average Control Delay per Vehicle (sec.)
A	Operations with very low delay occurring with favorable progression and/or short cycle lengths.	up to 10.0
B	Operations with low delay occurring with good progression and/or short cycle lengths.	10.1 to 20.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.1 to 35.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 55.0
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	55.1 to 80.0
F	Operation with delays unacceptable to most drivers occurring due to oversaturation, poor progression, or very long cycle lengths.	Greater than 80.0

Sources: Transportation Research Board, *2000 Highway Capacity Manual. Traffic Level of Service Analysis Guidelines*, Santa Clara County Transportation Authority Congestion Management Program, June 2003.

more of the warrants are met. Additionally, engineering judgment is exercised on a case-by-case basis to evaluate the effect a traffic signal will have on certain types of accidents and traffic conditions at the subject intersection as well as at adjacent intersections. Intersections that meet the peak hour warrant are subject to further analysis before determining that a traffic signal is necessary. Other options such as traffic control devices, signage, or geometric changes may be preferable based on existing field conditions.

Table 2
Unsignalized Intersection Level of Service Definitions Based on Control Delay

Level of Service	Description	Average Control Delay per Vehicle (sec.)
A	Operations with very low delays occurring with favorable progression.	up to 10.0
B	Operations with low delays occurring with good progression.	10.1 to 15.0
C	Operations with average delays resulting from fair progression.	15.1 to 25.0
D	Operation with longer delays due to a combination of unfavorable progression of high V/C ratios.	25.1 to 35.0
E	Operation with high delay values indicating poor progression and high V/C ratios. This is considered to be the limited of acceptable delay.	35.1 to 50.0
F	Operation with delays unacceptable to most drivers occurring due to oversaturation and poor progression.	Greater than 50.0

Source: Transportation Research Board, 2000 Highway Capacity Manual, (Washington, D.C., 2000).

Report Organization

The remainder of this report is divided into five chapters. Chapter 2 describes existing conditions in terms of the existing roadway network, transit service, and existing bicycle and pedestrian facilities. Chapter 3 presents the project impact on the transportation system and describes the recommended mitigation measures under existing plus project conditions. Chapter 4 presents the analysis of other transportation related issues, including site access. Chapter 5 presents the traffic conditions in the study area under Year 2025 Cumulative conditions without and with the addition of project traffic. Chapter 6 presents the conclusions of the traffic impact analysis.

2. Existing Conditions

This chapter describes the existing conditions for all of the major transportation facilities in the vicinity of the site, including the roadway network, transit service, and bicycle and pedestrian facilities.

Existing Roadway Network

Regional access to the project site is provided via US 101. Local access to the site is provided by Monterey Road, Cochrane Road, Butterfield Boulevard, Main Avenue, Hale Avenue, and Old Monterey Road. These facilities are described below.

US 101 is a north-south freeway extending northward to San Francisco and southward through Gilroy. US 101 is an eight-lane freeway (three mixed-flow lanes and one high-occupancy vehicle (HOV) lane in each direction) north of Cochrane Road. South of Cochrane Road, it is a six-lane freeway with no HOV lanes. Existing access to and from the project area is provided via full interchanges at Cochrane Road and Dunne Avenue.

Monterey Road is a four-lane divided major arterial that runs directly through Morgan Hill. Monterey Road extends from Market Street, in downtown San Jose, to US 101 south of the City of Gilroy. Monterey Road has a posted speed limit of 35 miles-per-hour (mph) in the project vicinity. Monterey Road would provide direct access to the project site via a new east approach at its intersection with Old Monterey Road.

Cochrane Road is an east-west divided roadway that runs from Monterey Road to Malaguerra Avenue, east of US 101. Currently, Cochrane Road is a four- to five-lane road between Monterey Road and Mission View Drive. Cochrane Road has a posted speed limit of 45 mph. Access to and from the project site is provided via Monterey Road.

Butterfield Boulevard is a north-south four-lane divided arterial roadway that runs south from Cochrane Road to its intersection with Watsonville Road/Monterey Road. Butterfield Boulevard has a posted speed limit of 45 mph. Along with Monterey Road, Butterfield Boulevard serves as a primary north-south route within the City of Morgan Hill. Butterfield Boulevard provides access to and from the project site via Main Avenue, Cochrane Road, and Monterey Road.

Main Avenue is a two-lane roadway that runs eastward from its intersection with DeWitt Avenue to Coyote Road at the base of the eastern foothills. The roadway has an overcrossing of US 101, however no access to US 101 is provided. Main Avenue has a posted speed limit of 30 mph. Access to and from the project site is provided via its intersection Monterey Road.

Hale Avenue is a two-lane roadway that runs northward from its intersection with Main Avenue to south San Jose, where it transitions into Santa Teresa Boulevard. Hale Avenue has intermittent sidewalks along the residential areas and posted speed limits of 35 and 45 mph in the project vicinity. Access to and from the project site is provided via Llagas Road to Old Monterey Road.

Old Monterey Road is a two-lane residential roadway that begins at Monterey Road and runs northward into the residential area, where it transitions to Chicory Lane. Old Monterey Road only has sidewalks on the east side of the street and a posted speed limit of 30 mph. Direct access to and from the project would be provided via a new east approach at its intersection with Monterey Road.

Existing Bicycle and Pedestrian Facilities

As defined by the Valley Transportation Authority (VTA), bicycle facilities include Class I bikeways (defined as bike paths off street, which is shared with pedestrians and excludes general motor vehicle traffic), Class II bikeways (defined as striped bike lanes on street), and rated streets. The latter refers to streets frequently used by bicyclists, sharing the roadway with motor vehicles, and includes city designated Class III bike routes. Rated streets include extreme caution (heavy traffic volumes with high traffic speeds), alert (moderate traffic volumes and speeds), and moderate (low traffic volumes and moderate to low traffic speeds). Class III bikeways only have signs to help guide bicyclists on recommended routes to certain locations.

Class II bike lanes are currently provided along the following roadways:

- Cochrane Road, along its entire length;
- Main Avenue, from Live Oak High School to Peak Avenue;
- Butterfield Boulevard, along its entire length;
- Sutter Boulevard, from Cochrane Road to Butterfield Boulevard;
- Monterey Road, nearly its entire length within City of Morgan Hill limits, with the exception of the segment that runs through downtown between Dunne Avenue and Main Avenue;
- Burnett Avenue, from Monterey Road to Bauman Court;
- Central Avenue, from Butterfield Boulevard to its termination point west of US 101;
- Dunne Avenue, from Peak Avenue to east of Hill Road;
- Depot Street, between Main Avenue and Fifth Street;
- Peak Avenue, between Dunne Avenue and Wright Avenue;
- Murphy Avenue, Dunne Avenue and Kelly Park Circle;
- Hale Avenue, between Main Avenue and north of the City of Morgan Hill.

Other bicycle facilities in the project vicinity include the following:

- A bike route on Monterey Road, between Dunne Avenue and Main Avenue;
- A paved bike path on east side of Butterfield Boulevard, between San Pedro Avenue and Central Avenue;
- An unpaved bike path, the Madrone Channel Trail, along the east side of US 101, between Tennant Avenue and Cochrane Road.

The existing bicycle facilities in the study area are presented graphically on Figure 3.

Pedestrian facilities in the study areas consist primarily of sidewalks, pedestrian push buttons and signal heads at signalized intersections. All of the signalized intersections in the vicinity of the project site have marked crosswalks and pedestrian push buttons and signal heads. Sidewalks are found on the following roadway segments in the project vicinity.

Figure 3
Existing Bicycle Facilities



- Monterey Road has sidewalks on the east side of street with a short discontinuity between Old Monterey Road and Granada Street and on the west side of street south of Old Monterey Road.
- Old Monterey Road has sidewalks on the west side of the street.
- Main Avenue has sidewalks on both sides of the street.
- Butterfield Boulevard has sidewalks on both sides of the street with a discontinuity on the west side of the street between Jarvis Drive and approximately 700 feet south of Sutter Boulevard.
- Cochrane Road has sidewalks on both sides of the street with a discontinuity between Monterey Road and Adams Court.

Overall, the existing network of sidewalks and crosswalks provides good connectivity and provides pedestrians with safe routes to transit services and other points of interest in the area.

Existing Transit Service

Existing transit service to the study area is provided by the VTA and Caltrain. The transit services are described below and shown on Figure 4.

VTA Bus Services

The study area is served directly by a community bus (Route 16), a local bus (Route 68), and two express buses (Route 121 and Route 168).

Community Bus Route 16 operates on Cochrane Road in the study area. It runs from Burnett Avenue to the Civic Center (Main and Dewitt) in Morgan Hill with approximately 60-minute headways in the AM and PM commute periods. Route 16 operates between 6:30 AM and 6:00 PM. The nearest Route 16 stops to the project site are located near the intersections of Monterey Road/Main Avenue and Monterey Road/Cochrane Road.

Local Route 68 operates on Monterey Road and Hale Avenue on its route between the Gilroy Transit Center and the Diridon Transit Center in San Jose with 15-20 minute headways on weekdays in the AM and PM peak hours. Route 68 operates between 4:00 AM and 1:30 AM. The nearest Route 68 stop is located near the Hale Avenue/Llagas Road intersection.

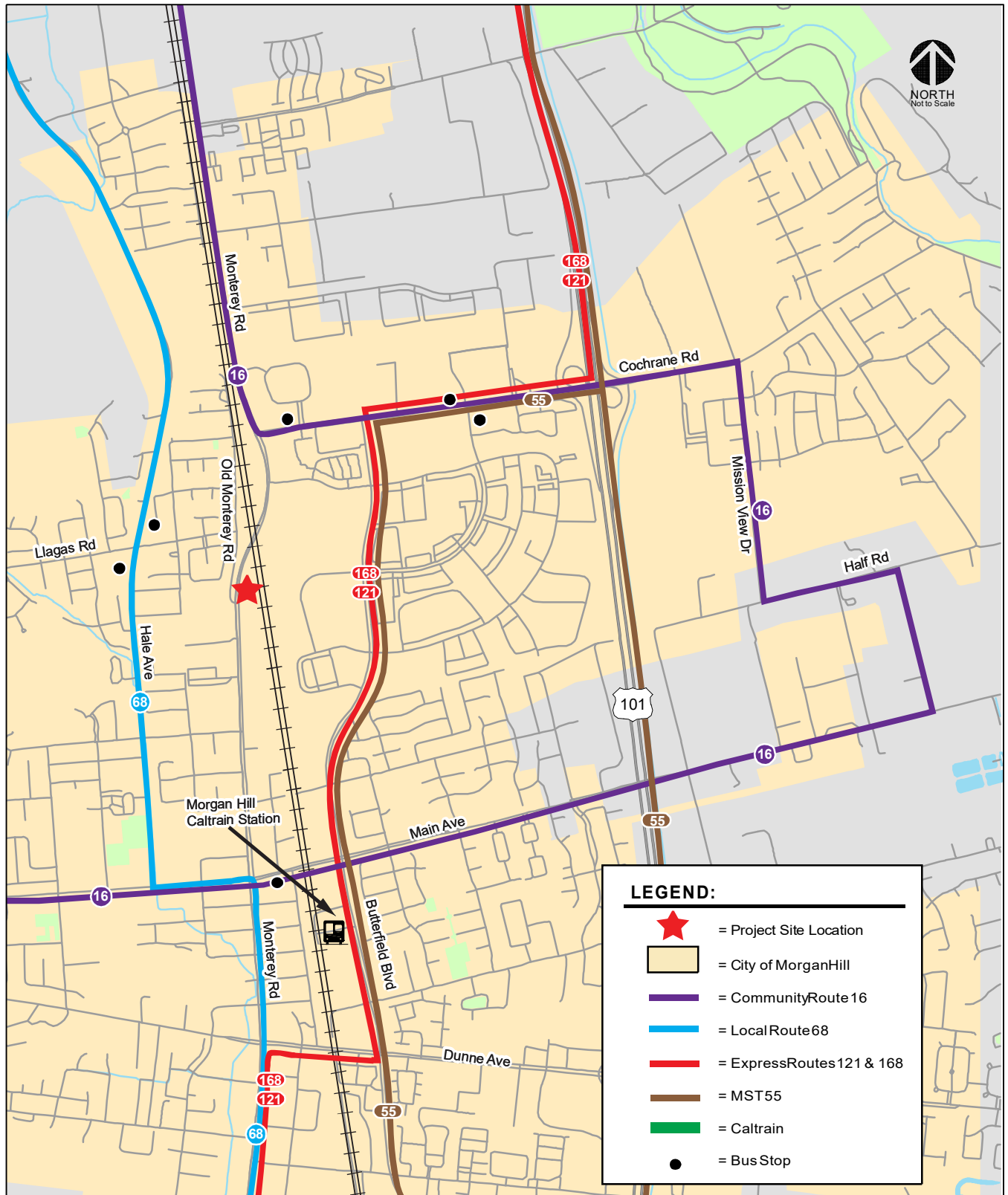
Express Route 121 operates on Butterfield Boulevard and Cochrane Road on its route between the Gilroy Transit Center and the Lockheed Martin Transit Center. It operates northbound with 15 to 30-minute headways during the AM commute period only and southbound with 15 to 30-minute headways during the PM commute period only. The nearest Route 121 stop to the project site is located at the intersection of Sutter Boulevard and Cochrane Road, approximately one mile northeast of the project site.

Express Route 168 operates on Butterfield Boulevard and Cochrane Road on its route between the Gilroy Transit Center and the San Jose Diridon Transit Center. It operates northbound with 30-minute headways during the AM commute period only and southbound with 30-minute headways during the PM commute period only. The nearest Route 168 stop to the project site is located at the intersection of Sutter Boulevard and Cochrane Road, approximately one mile northeast of the project site.

Caltrain

Commuter rail service between San Francisco and Gilroy is provided by Caltrain. The Morgan Hill Caltrain Station is located along Depot Street, with main access and parking off of Butterfield Boulevard, approximately two miles from the project site. At the Morgan Hill Station, Caltrain only provides service in the northbound direction during the AM commute period and in the southbound

Figure 4
Existing Transit Services



direction only during the PM commute period with approximately 30- to 60-minute headways during each of the commute hours.

Existing Intersection Lane Configurations

The existing lane configurations at the study intersections were determined by observations in the field and are shown on Figure 5.

Existing Traffic Volumes

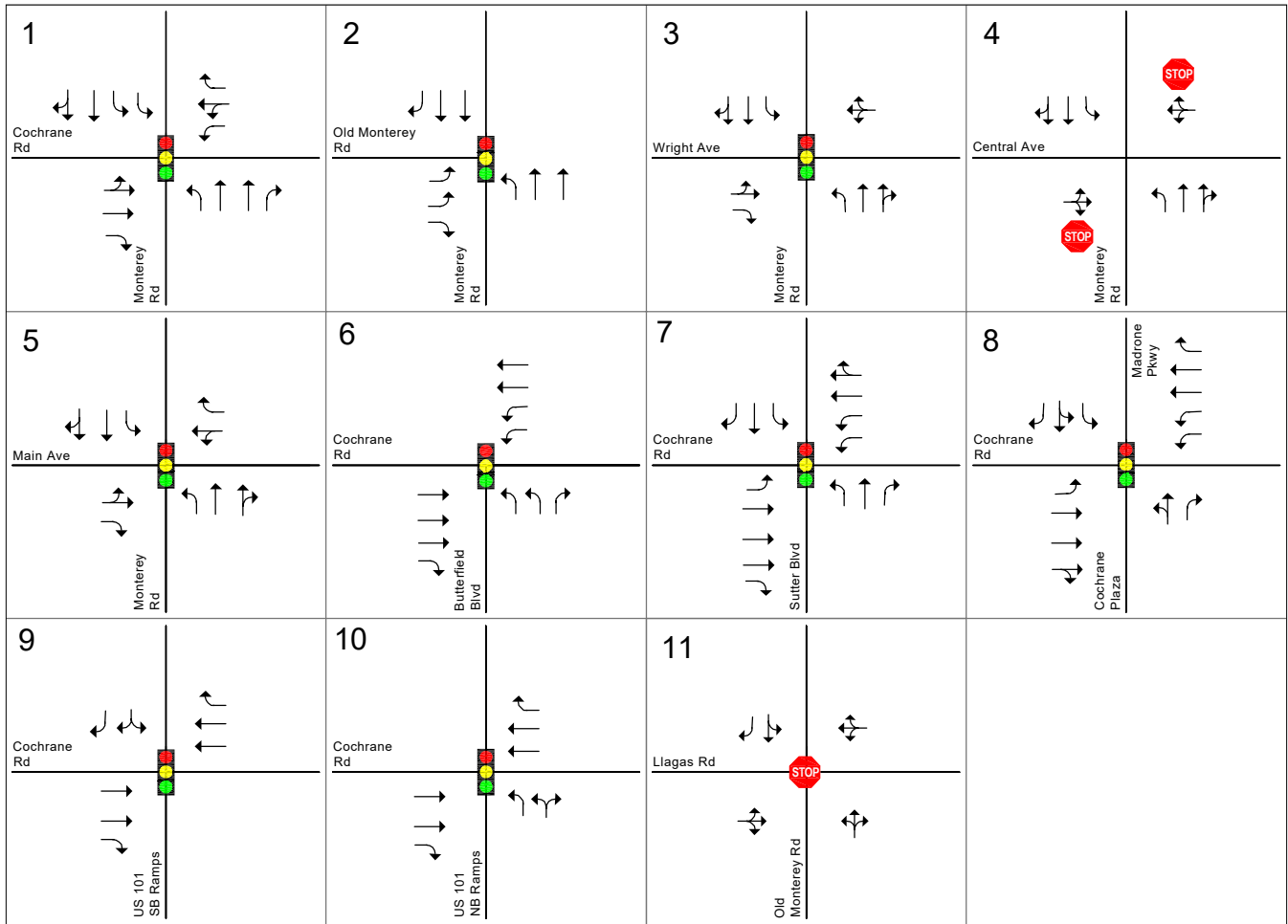
Existing peak-hour traffic volumes were obtained from recently completed traffic studies and supplemented with manual turning-movement counts at intersections, where counts were either unavailable or outdated (more than 2 years old). The existing peak-hour intersection volumes are shown on Figure 6. Intersection turning-movement counts conducted for this analysis are presented in Appendix A.

Existing Intersection Levels of Service

The results of the level of service analysis under existing conditions are summarized in Table 3. The results show that, measured against the City of Morgan Hill level of service standards, all the study intersections currently operate at an acceptable level of service, LOS D or better, under existing conditions during each of the peak hours analyzed.

All of the unsignalized study intersections currently have traffic conditions that fall below the thresholds that warrant signalization. The level of service calculation sheets are included in Appendix C. The peak-hour signal warrant sheets are contained in Appendix D.

Figure 5
Existing Lane Configurations



LEGEND:

 = Stop-Controlled Intersection


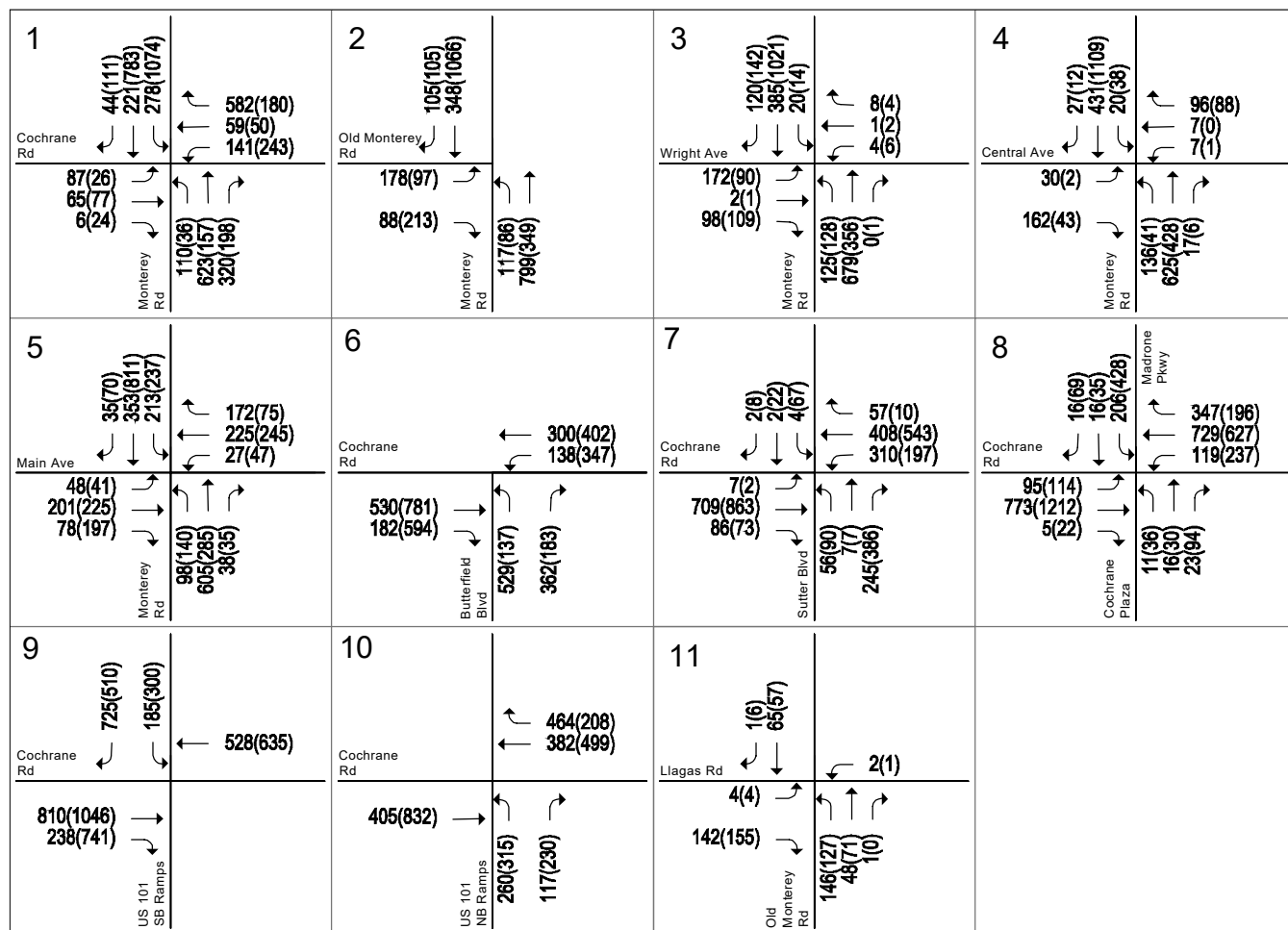
 = Signalized Intersection

Figure 6
Existing Traffic Volumes



LEGEND:

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Existing Traffic Volumes 11-22-19

Table 3
Existing Intersection Levels of Service

Int. #	Intersection	Control	LOS Standard	Peak Hour	Count Date	Warrant Met?	Delay ¹	LOS
1	Monterey Road and Cochrane Road	Signal	E	AM PM	05/08/18 05/08/18	– –	28.1 24.0	C C
2	Monterey Road and Old Monterey Road	Signal	D	AM PM	10/24/19 10/24/19	– –	10.8 15.0	B B
3	Monterey Road and Wright Avenue	Signal	D	AM PM	03/28/19 03/28/19	– –	19.1 20.4	B C
4	Monterey Road and Central Avenue	TWSC	D	AM PM	03/28/19 03/28/19	No No	19.5 15.7	C C
5	Monterey Road and Main Avenue	Signal	F	AM PM	05/08/18 05/08/18	– –	44.2 45.1	D D
6	Butterfield Boulevard and Cochrane Road	Signal	D	AM PM	05/08/18 05/08/18	– –	12.3 12.0	B B
7	Sutter Boulevard and Cochrane Road	Signal	D	AM PM	05/08/18 05/08/18	– –	17.2 17.9	B B
8	Madrone Parkway/Cochrane Plaza and Cochrane I	Signal	E	AM PM	05/08/18 05/08/18	– –	19.1 31.4	B C
9	US 101 Southbound Ramps and Cochrane Road	Signal	E	AM PM	05/08/18 05/08/18	– –	12.8 16.5	B B
10	US 101 Northbound Ramps and Cochrane Road	Signal	E	AM PM	05/08/18 05/08/18	– –	8.6 11.3	A B
11	Old Monterey Road and Llagas Road	AWSC	D	AM PM	10/24/19 10/24/19	No No	8.4 8.4	A A
<p><u>Notes:</u></p> <p>¹The reported delay and corresponding level of service for signalized and all-way stop-controlled intersections represent the average delay for all approaches at the intersection. The reported delay and corresponding level of service for two-way stop-controlled intersections are based on the stop-controlled approach with the highest delay.</p>								

3.

Existing Plus Project Conditions

This chapter describes existing plus project traffic conditions, significant project impacts, and measures that are recommended to mitigate project impacts. Included are descriptions of the significance criteria that define an impact, estimates of project-generated traffic, identification of the impacts, and descriptions of the mitigation measures. Existing plus project conditions are represented by existing traffic conditions with the addition of traffic generated by the proposed project.

Significant Impact Criteria

Significance criteria are used to establish what constitutes an impact. Significance criteria for impacts on intersections for this analysis are based on the City of Morgan Hill Level of Service standards.

Definition of Significant Signalized Intersection Impacts

All intersections within the City of Morgan Hill are required to meet the City's LOS standard of LOS D, with the exception of the following:

- **LOS F** for Downtown intersections and segments including at Main/Monterey, along Monterey Road between Main and Fifth Street, and along Depot Street at First through Fifth Street;
- **LOS E** for the following intersections and freeway zones:
 - Main Avenue and Del Monte Avenue
 - Main Avenue and Depot Street
 - Dunne Avenue and Del Monte Avenue
 - Dunne Avenue and Monterey Avenue
 - Dunne Avenue and Church Street;
 - Dunne Avenue and Depot Street
 - Cochrane Road and Monterey Road
 - Tennant Avenue and Monterey Road
 - Tennant Avenue and Butterfield Boulevard
 - Cochrane Road Freeway Zone: from Madrone Parkway/Cochrane Plaza to Cochrane Road/DePaul Drive
 - Dunne Avenue Freeway Zone: from Walnut Grove Drive/East Dunne Avenue to Condit Road/East Dunne Avenue
 - Tennant Avenue Freeway Zone: from Butterfield Boulevard/Tennant Avenue to Condit Road/Tennant Avenue

According to the City of Morgan Hill level of service guidelines, a development is said to create a significant adverse impact on traffic conditions at a signalized intersection if for either peak hour:

1. The level of service at the intersection degrades from an acceptable level (LOS D or LOS E as identified above) under existing conditions to an unacceptable level (LOS E or F) under project conditions, or
2. The level of service at the intersection is an unacceptable level (LOS E or F as identified above) under existing conditions and the addition of project trips causes the average critical delay to increase by four (4) or more seconds *and* the volume-to-capacity ratio (V/C) to increase by 0.01.

An exception to this rule applies when the addition of project traffic reduces the amount of average delay for critical movements (i.e., the change in average delay for critical movements is negative). In this case, the threshold of significance is an increase in the critical V/C value by 0.01 or more.

Definition of Significant Unsignalized Intersection Impacts

Unsignalized intersections within the City of Morgan Hill have a minimum operating level of LOS D. According to the City of Morgan Hill level of service guidelines, a development is said to have a significant adverse impact on traffic conditions at an unsignalized intersection if for either peak hour the addition of project traffic causes the worst approach delay to degrade to LOS E or F *and* the traffic volumes at the intersection are sufficiently high to satisfy the peak hour volume warrant.

Transportation Network under Existing Plus Project Conditions

It is assumed in this analysis that the roadway network and intersection configurations under existing plus project conditions would be the same as described under existing conditions with the exception of the following improvement:

Monterey Road and Old Monterey Road – As part of the project, a new east approach at the intersection of Monterey Road and Old Monterey would be constructed to serve as the main access to the project site. The site plan shows that the east approach would include a separate left-turn lane and a shared through and right-turn lane. To facilitate access to the project site, the addition of a separate southbound left-turn lane and restriping of the middle exclusive eastbound left-turn lane to a shared through and left-turn lane were also assumed in the analysis.

The addition of the east approach to serve the project will require signal modification at the intersection. A crosswalk on the north approach of the intersection is currently not provided. However, there are no sidewalks provided along the west side of Monterey Road or the east side of Old Monterey Road, and there are no destinations that would be served by a crosswalk on the north approach. Therefore, a new crosswalk on the north approach would not be required with the signal modification.

Project Trip Estimates

The magnitude of traffic produced by a new development and the locations where that traffic would appear are estimated using a three-step process: (1) trip generation, (2) trip distribution, and (3) trip assignment. In determining project trip generation, the magnitude of traffic entering and exiting the site is estimated for the AM and PM peak hours. As part of the project trip distribution step, an estimate is made of the directions to and from which the project trips would travel. In the project trip assignment step, the project trips are assigned to specific streets and intersections in the study area. These procedures are described further in the following sections.

Proposed Project Trips

Through empirical research, data have been collected that indicate the amount of traffic that can be expected to be generated by common land uses. Project trip generation was estimated by applying to the size and uses of the development the appropriate trip generation rates. The trip generation rates for Single-Family Detached Housing (Land Use 210) and Shopping Center (Land Use 820) as published in the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 10th Edition* (2017) were applied to the townhomes and retail space, respectively. Single-family detached housing trip generation rates were used to estimate the amount of trips that would be generated by the proposed townhomes because the trip-making characteristics of varying types of residential units would be similar due the limited transit services and employment opportunities within Morgan Hill. Based on ITE trip rates, single-family homes generate the greatest number of per unit trips for residential uses. Therefore, the use of single-family trip rates provides a conservative estimate of trips for the proposed townhome units.

Trip Reductions

The trip estimates for each of the proposed land use components of the project were reduced to account for internalization, or trips made between each of the proposed land uses. The reductions are based on the assumption that vehicle trips to each of the proposed land uses of the site would be reduced due to internalization of trips. As prescribed by the VTA *Transportation Impact Analysis Guidelines* (October 2014), a trip reduction of 15 percent (%) to account for the internalization between residential and retail land uses was applied to the estimated trips for the project.

In addition, trip generation for retail uses is typically adjusted to account for pass-by-trips. Pass-by-trips are trips that would already be on the adjacent roadways (and are therefore already counted in the existing traffic) but would turn into the site while passing by. Justification for applying the pass-by-trip reduction is founded on the observation that such retail traffic is not actually generated by the retail development, but is already part of the ambient traffic levels. Pass-by-trips are therefore excluded from the traffic projections (although pass-by traffic is accounted for at the site entrances). A typical pass-by trip reduction of 20% for retail development within the City of Morgan Hill was applied to the retail component of the proposed project.

Based on the ITE rates with trip adjustments and reductions, the proposed development would generate a total of 1,043 daily vehicle trips, with 78 trips (21 inbound and 57 outbound) occurring during the AM peak hour and 107 trips (66 inbound and 41 outbound) occurring during the PM peak hour.

Existing Site Trips

Trips associated with the single-family house on the project site were estimated using ITE rates and subtracted from the estimated trips to be generated by the proposed project. Based on ITE rates, the single-family house currently generates 9 daily vehicle trips, with 1 trips (0 inbound and 1 outbound) occurring during the AM peak hour and 1 trips (1 inbound and 0 outbound) occurring during the PM peak hour.

Net Project Trips

After applying the ITE trip rates, appropriate trip reductions, and existing site trip credits, the project would generate a net additional 1,034 daily vehicle trips, with 77 trips (21 inbound and 56 outbound) occurring during the AM peak hour and 106 trips (65 inbound and 41 outbound) occurring during the PM peak hour (see Table 4).

Table 4
Project Trip Generation Estimates

Land Use	Size	Daily		AM Peak Hour						PM Peak Hour					
		Rate	Trip	Rate	Split		Trip			Rate	Split		Trip		
					In	Out	In	Out	Total		In	Out	In	Out	Total
Proposed Land Uses															
Single-Family Detached Housing (ITE LU 210)	101 Dwelling Units	9.440	953	0.740	25%	75%	19	56	75	0.990	63%	37%	63	37	100
Housing and Retail Mixed-Use Reduction (15%) ¹			-20				0	0	0				-1	-1	-2
Shopping Center (ITE LU 820)	3,500 Square Feet	37.750	132	0.940	62%	38%	2	1	3	3.810	48%	52%	6	7	13
Housing and Retail Mixed-Use Reduction (15%) ¹			-20				0	0	0				-1	-1	-2
Retail Passby (20%) ²			-2				0	0	0				-1	-1	-2
Total Project Trips			1,043				21	57	78				66	41	107
Existing Land Use															
Single-Family Detached Housing	1 Dwelling Unit	9.440	9	0.740	25%	75%	0	1	1	0.990	63%	37%	1	0	1
Net Project Trips (Proposed - Existing Land Uses)			1,034				21	56	77				65	41	106
Source: ITE Trip Generation Manual, 10 th Edition 2017															
¹ As prescribed by the VTA Transportation Impact Analysis Guidelines (October 2014), the maximum trip reduction for a mixed-use development project with housing and retail components is equal to 15% off the smaller trip generator.															
² 20% pass-by reduction is typically applied for retail development within the City of Morgan Hill.															

Trip Distribution

The trip distribution patterns for project-generated traffic was estimated based on existing travel patterns on the surrounding roadway system, locations of complementary land uses, and use of the City of Morgan Hill Traffic Demand Forecasting (TDF) Model. The project trip distribution patterns are shown graphically on Figure 7.

Trip Assignment

The peak-hour trips associated with the proposed project were added to the transportation network in accordance with the distribution pattern discussed above. Figure 8 shows the assignment of project traffic on the local transportation network. A tabular summary of project traffic at each study intersection is contained in Appendix B.

Existing Plus Project Traffic Volumes

Proposed project trips, as represented in the above project trip assignment, were added to the existing traffic volumes to obtain existing plus project traffic volumes. The existing plus project traffic volumes are shown on Figures 9.

Existing Plus Project Intersection Analysis

The results of the level of service analysis under existing plus project conditions are summarized in Table 5. The results show that all of the study intersections are projected to operate at acceptable levels of service under existing plus project conditions, during each of the peak hours analyzed. The level of service calculation sheets are included in Appendix C. The peak-hour signal warrant sheets are contained in Appendix D.

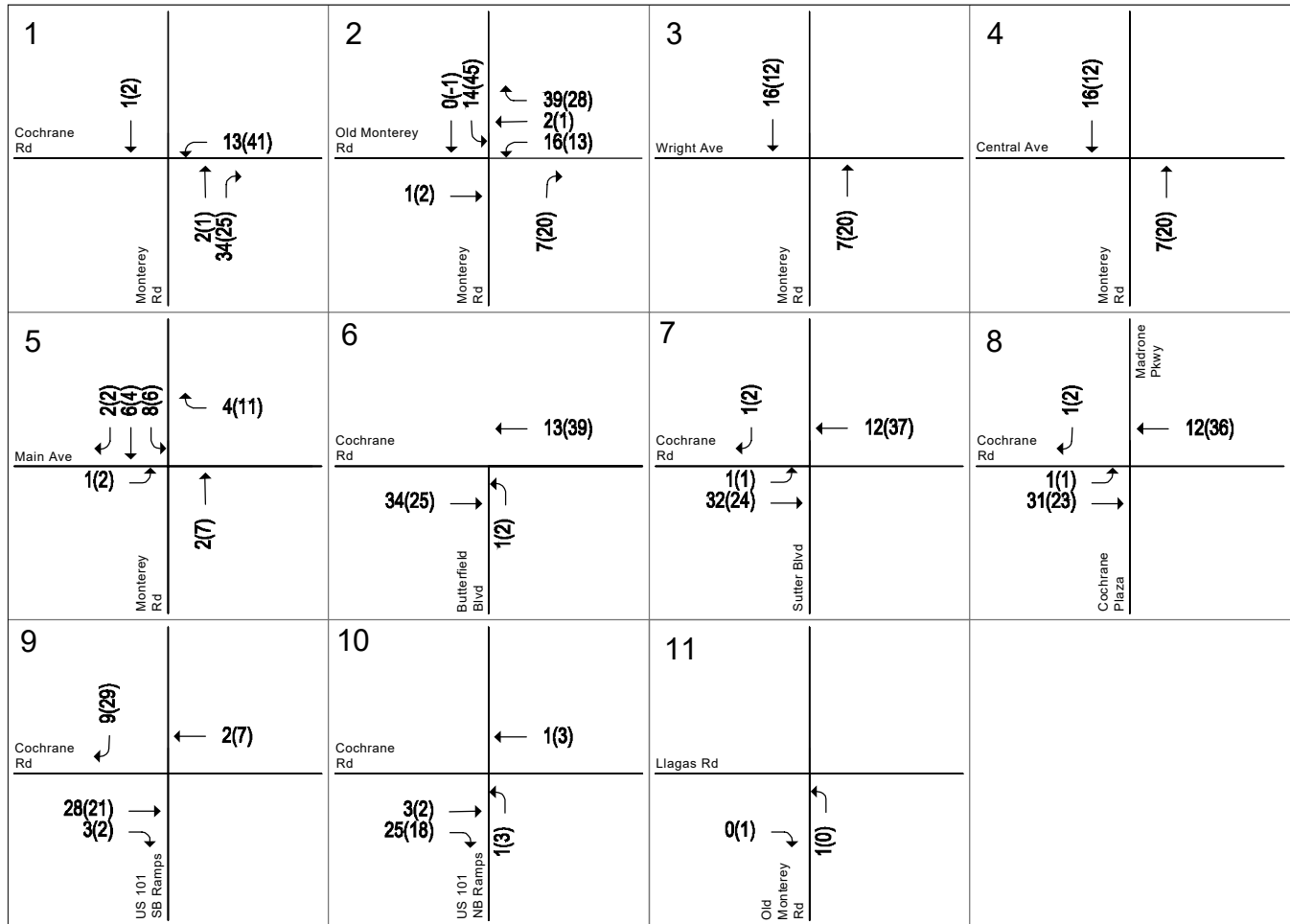
Freeway Segment Analysis

Per CMP technical guidelines, freeway segment level of service analysis shall be conducted on all segments to which the project is projected to add one percent or more to the segment capacity. Since the project is not projected to add one percent to any freeway segments in the area, freeway analysis for the CMP was not required. The percentage of traffic projected to be added by the project to freeway segments in the project area is summarized in Table 6.

Figure 7
Project Trip Distribution



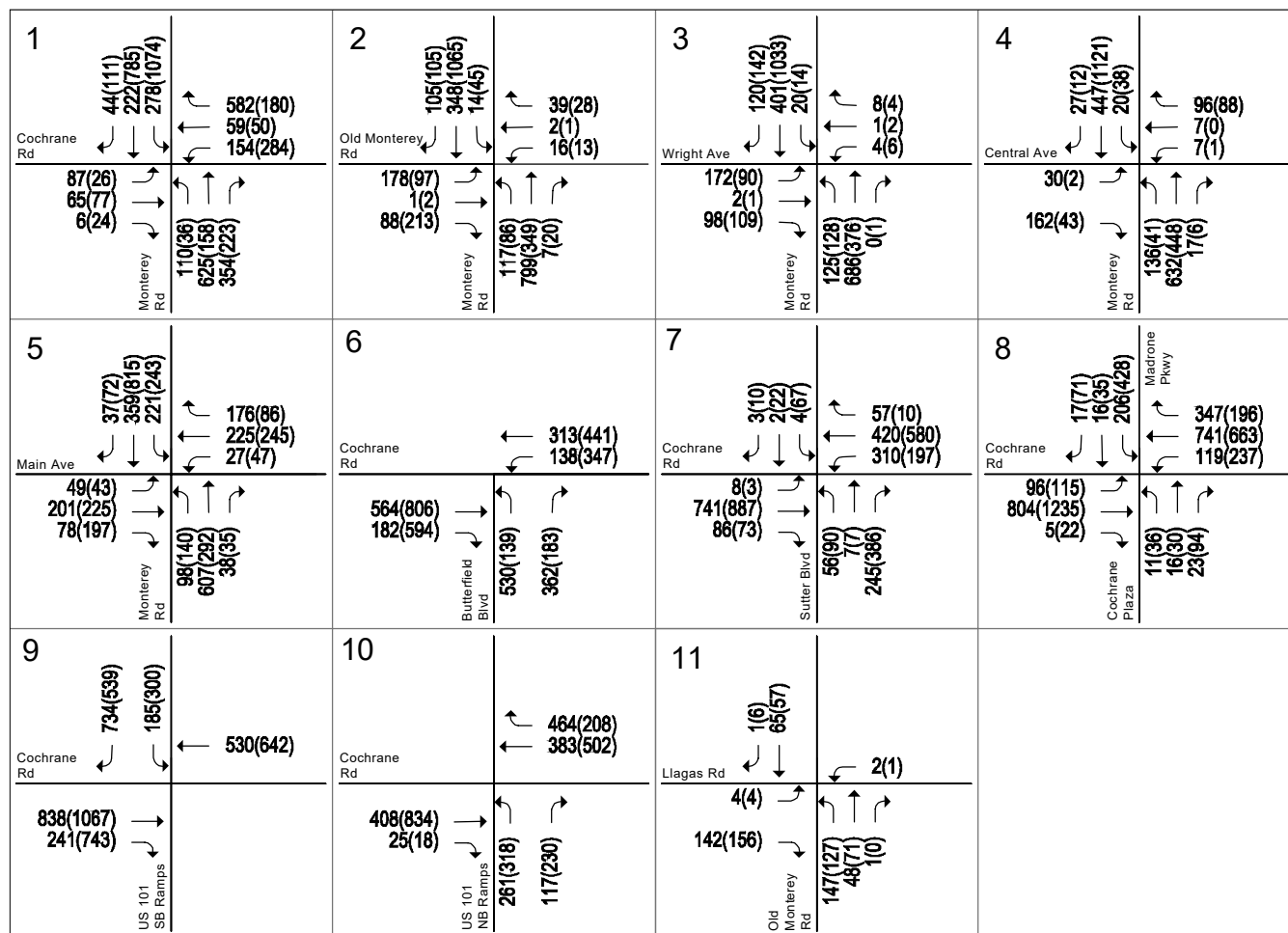
Figure 8
Project Trip Assignment



LEGEND:

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 9
Existing Plus Project Traffic Volumes



LEGEND:

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Existing Plus Project Traffic Volumes 11-22-19

Table 5
Existing Plus Project Intersection Levels of Service

Int. #	Intersection	Control	LOS Standard	Peak Hour	Existing			Existing Plus Project					
					Warrant Met?	Delay ¹	LOS	Warrant Met?	Delay ¹	LOS	Incr. In Crit. Delay	Incr. In Crit. V/C	
1	Monterey Road and Cochrane Road	Signal	E	AM	--	28.1	C	--	28.1	C	0.2	0.005	
2	Monterey Road and Old Monterey Road	Signal	D	PM	--	24.0	C	--	24.9	C	1.1	0.013	
				--	15.0	B	--	22.9	C	6.0	0.038		
3	Monterey Road and Wright Avenue	Signal	D	AM	--	19.1	B	--	19.1	B	0.0	0.002	
				PM	--	20.4	C	--	20.4	C	0.1	0.004	
4	Monterey Road and Central Avenue	TWSC	D	AM	No	19.5	C	No	20.1	C	N/A	N/A	
				PM	No	15.7	C	No	15.9	C	N/A	N/A	
5	Monterey Road and Main Avenue	Signal	F	AM	--	44.2	D	--	44.4	D	0.3	0.006	
				PM	--	45.1	D	--	45.2	D	0.1	0.003	
6	Butterfield Boulevard and Cochrane Road	Signal	D	AM	--	12.3	B	--	12.4	B	0.0	0.007	
				PM	--	12.0	B	--	11.9	B	0.0	0.000	
7	Sutter Boulevard and Cochrane Road	Signal	D	AM	--	17.2	B	--	17.2	B	0.0	0.007	
				PM	--	17.9	B	--	18.0	B	-0.1	0.005	
8	Madrone Parkway/Cochrane Plaza and Cochrane Road	Signal	E	AM	--	19.1	B	--	19.2	B	-2.9	-0.003	
				PM	--	31.4	C	--	31.2	C	-0.1	0.005	
9	US 101 Southbound Ramps and Cochrane Road	Signal	E	AM	--	12.8	B	--	12.8	B	0.2	0.011	
				PM	--	16.5	B	--	16.7	B	0.3	0.015	
10	US 101 Northbound Ramps and Cochrane Road	Signal	E	AM	--	8.6	A	--	8.6	A	0.0	0.000	
				PM	--	11.3	B	--	11.3	B	0.0	0.002	
11	Old Monterey Road and Llagas Road	AWSC	D	AM	No	8.4	A	No	8.4	A	N/A	N/A	
				PM	No	8.4	A	No	8.4	A	N/A	N/A	
<u>Notes:</u> ¹ The reported delay and corresponding level of service for signalized and all-way stop-controlled intersections represent the average delay for all approaches at the intersection. The reported delay and corresponding level of service for two-way stop-controlled intersections are based on the stop-controlled approach with the highest delay.													

Table 6
Freeway Segment Capacity

#	Freeway Segment	Direction	Project Trips					
			Mixed-Flow Lane			HOV Lane		
			Volume (pc/hr/ln)	Capacity ¹ (pc/hr/ln)	% of Capacity	Volume (pc/hr/ln)	Capacity ¹ (pc/hr/ln)	% of Capacity
1	US 101 from Tennant Avenue to East Dunne Avenue	NB	1	2,300	0.03	--	--	--
		NB	2	2,300	0.10	--	--	--
2	US 101 from East Dunne Avenue to Cochrane Road	NB	0	2,300	0.01	--	--	--
		NB	1	2,300	0.04	--	--	--
3	US 101 from Cochrane Road to Coyote Creek Golf Drive	NB	6	2,300	0.26	7	1,650	0.42
		NB	5	2,300	0.20	4	1,650	0.24
4	US 101 from Coyote Creek Golf Drive to Cochrane Road	SB	3	2,300	0.12	1	1,650	0.06
		SB	7	2,300	0.30	8	1,650	0.48
5	US 101 from Cochrane Road to East Dunne Avenue	SB	1	2,300	0.04	--	--	--
		SB	1	2,300	0.03	--	--	--
6	US 101 from East Dunne Avenue to Tennant Avenue	SB	2	2,300	0.09	--	--	--
		SB	1	2,300	0.06	--	--	--

Notes:
¹ Capacities for freeway mixed-flow and HOV lanes were obtained from VTA Transportation Impact Analysis Guidelines (October 2014)

4. Other Transportation Issues

This chapter presents an analysis of other transportation issues associated with the project site, including:

- Vehicular site access
- On-site circulation
- Intersection operations analysis – vehicle queuing and left-turn pocket storage at intersections
- Potential impacts to bike, pedestrian and transit facilities

Unlike the level of service impact methodology, which is adopted by the City Council, the analyses in this chapter are based on professional judgment in accordance with the standards and methods employed by the traffic engineering community.

Site Access and Circulation

A review of the site plan for the project was performed to determine if adequate site access is provided and to identify any access and circulation issues that should be improved. This review is based on a conceptual site plan dated October 22, 2019 and in accordance with generally accepted traffic engineering standards.

Site Access

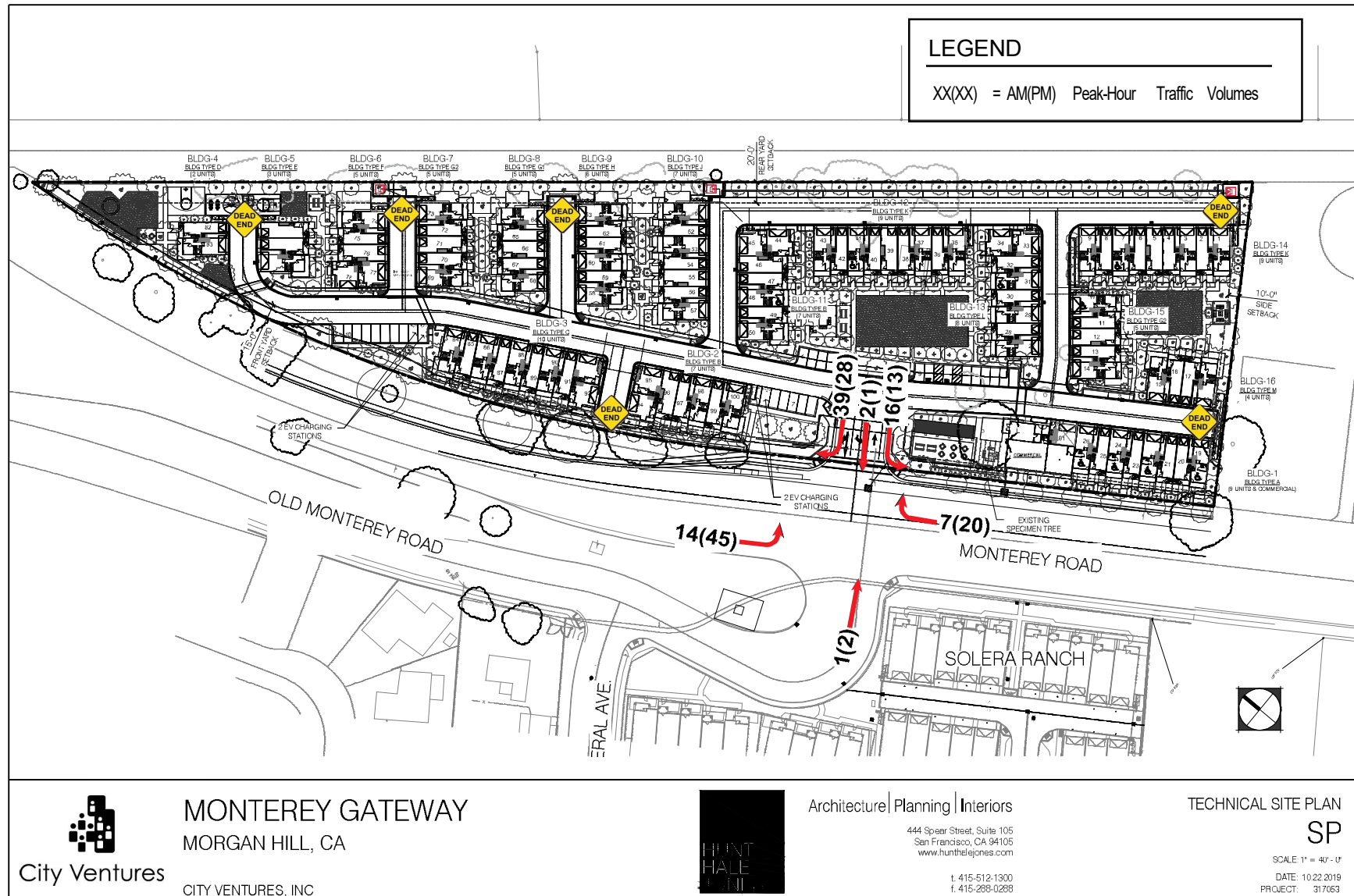
The proposed project site plan and project trips at the site access point is presented in Figure 10. A new east approach to the intersection of Monterey Road and Old Monterey Road would serve as the project driveway. A southbound left-turn lane would also be added to this intersection to facilitate full-access to the project site.

On-Site Circulation

As shown on the site plan, an internal roadway system provides a connection between every residential unit and retail space to the project driveway. The proposed 26-foot wide internal roadway would be sufficient to serve two-way traffic throughout the project site.

The project site plan shows sidewalks along the main internal drive aisle and the project frontage on Monterey Road. The proposed pedestrian sidewalks along the project site frontage would provide a connection to other existing pedestrian facilities (sidewalks, crosswalks, bus stops, etc.) along Monterey Road. However, there would still be a short segment of missing sidewalks (approximately 150

Figure 10
Project Trips at Site Access Driveway



feet) along the adjacent property's frontage south of the project site on the east side of Monterey Road between the project site and Granada Street.

The project site should be designed following City of Morgan Hill design standards and provide adequate width and turn-radii at and along all drive/parking aisles to allow for two-way circulation and adequate circulation of larger vehicles (such as emergency trucks, garbage truck, and delivery trucks) throughout the project site. Adhering to City of Morgan Hill standards and requirements, and implementing the above recommendations, the proposed site access point and layout of the surface parking areas would be adequate to accommodate circulation of both passenger and emergency vehicles.

Emergency Vehicle Access and Circulation

The 26-foot wide internal roadway would provide emergency vehicles (fire trucks) sufficient space to access each of the residential units and retail space on-site. There are several dead-end drive aisles that would not provide sufficient space for emergency vehicles to turn around. However, the dead-ends will be located along short segments of roadways. Thus, vehicles can back out the roadways.

Intersection Operations Analysis

The analysis of intersection level of service was supplemented with an analysis of intersection operations for selected intersections where the project would add a significant number of left-turning vehicles. The operations analysis is based on vehicle queuing for high demand left-turn movements at intersections. Vehicle queues were estimated using a Poisson probability distribution, which estimates the probability of "n" vehicles for a vehicle movement using the following formula:

$$P(x=n) = \frac{\lambda^n e^{-\lambda}}{n!}$$

Where:

$P(x=n)$ = probability of "n" vehicles in queue per lane

n = number of vehicles in the queue per lane

λ = Average number of vehicles in the queue per lane (vehicles per hour per lane/signal cycles per hour)

The basis of the analysis is as follows: (1) the Poisson probability distribution is used to estimate the 95th percentile maximum number of queued vehicles per cycle for a particular movement; (2) the estimated maximum number of vehicles in the queue is translated into a queue length, assuming 25 feet per vehicle; and (3) the estimated maximum queue length is compared to the existing or planned available storage capacity for the movement. This analysis thus provides a basis for estimating future left-turn storage requirements at intersections. The 95th percentile queue length value indicates that during the peak hour, a queue of this length or less would occur on 95 percent of the signal cycles. Likewise, a queue length larger than the 95th percentile queue would only occur on 5 percent of the signal cycles (about 3 cycles during the peak hour for a signal with a 60-second cycle length). Therefore, left-turn storage pocket designs based on the 95th percentile queue length would ensure that storage space would be exceeded only 5 percent of the time. The 95th percentile queue length is also known as the "design queue length".

The vehicle queue estimates and a tabulated summary of the findings are provided in Table 7. The vehicular queuing analysis (Poisson probability calculations) is included in Appendix E.

Table 7
Site Access Queuing Analysis

Measurement	Monterey Road and Old Monterey Road					
	Southbound Left		Westbound Left		Westbound Through/Right	
	AM	PM	AM	PM	AM	PM
Project Conditions						
Cycle Length (sec)	60	90	60	90	60	90
Lanes	1	1	1	1	1	1
Volume (vph)	14	45	16	13	41	29
Volume (vphpl)	14	45	16	13	41	29
95 th %. Queue (veh/ln.)	1	3	1	1	2	2
95 th %. Queue (ft./ln.) ¹	25	75	25	25	50	50

Monterey Road and Old Monterey Road

The queuing analysis indicates that the maximum vehicle queues for the southbound left-turn movement and westbound approach are projected to be 75 and 50 feet long, respectively. Therefore, the southbound left-turn pocket should be designed to accommodate a 75-foot long queue. The driveway throat between Monterey Road and the internal roadway is measured to be approximately 50 feet on the site plan, which would provide sufficient storage for two vehicles to accommodate the projected queues of 50 feet long.

Project generated traffic at other locations would be too low to have a measurable effect on queue lengths.

Transit, Pedestrian and Bicycle Analysis

The project site is not directly served by any bus route. The nearest bus stops for Route 68 to the project are located within walking distance approximately ¼ of a mile from the project near the intersection of Hale Avenue and Llagas Road. A typical mode split in Morgan Hill would be a three percent transit share. Assuming up to three percent transit mode share for the project equates to no more than three transit riders during either the AM or PM peak hours. The transit ridership demands of the proposed project would not justify the enhancement of the existing transit facilities.

Sidewalks are provided along on the east side of Monterey Road with a short discontinuity between Old Monterey Road and Granada Street and on the west side of street south of Old Monterey Road. The project is proposing to provide sidewalks along the project frontage on Monterey Road, but there would still be a missing sidewalk along the adjacent property south of the project site. The signalized intersection of Monterey Road and Old Monterey Road currently has a crosswalk across the south approach providing a connection between sidewalks on both sides of Monterey Road. These pedestrian facilities will provide a pedestrian connection between the project site and nearby land uses along Monterey Road.

Bike lanes are currently provided along the length of Monterey Road with a discontinuity between Main Avenue and Dunne Avenue. There also are bike lanes along Main Avenue, Cochrane Road, Butterfield Boulevard, and Hale Avenue. It is expected that bicycle trips would comprise no more than one percent

of the total project-generated trips. Thus, the project could potentially generate no more than one new bicycle trip during each of the peak hours. The demand generated by the proposed project could be accommodated by the existing bicycle facilities in the vicinity of the project site.

5.

Year 2025 Cumulative Conditions

This chapter describes Year 2025 Cumulative traffic conditions with and without the proposed project. Year 2025 Cumulative conditions are comprised of forecasted traffic volumes and reflect estimated traffic growth in the City of Morgan Hill for the Year 2025. This chapter describes the procedure used to determine Year 2025 Cumulative traffic volumes and the resulting traffic conditions.

Year 2025 Cumulative Land Use and Traffic Forecasts

Year 2025 Cumulative traffic volumes were developed based on traffic forecasts produced for the City of Morgan Hill 2035 General Plan using the City's Traffic Demand Forecasting (TDF) model. The Year 2035 General Plan traffic forecasts include land use growth and transportation improvements associated with buildout of the City's General Plan.

The 2035 General Plan forecasts also include trips associated with the adopted General Plan land uses for the project site. Therefore, the trips associated with the adopted General Plan land uses for the project site were removed to develop Year 2025 Cumulative no project traffic volumes. Hexagon prepared trip estimates for the project site GP land uses which were estimated to consist of 52 residential units, 3,000 s.f. of retail space and 3,000 s.f. of office space. When compared with the land uses included in the City's General Plan, the proposed project would result in an additional 34 AM peak hour trips and 48 PM peak hour trips at the project site. The estimated trip generation for the proposed land uses and adopted General Plan land uses for the site are presented in Table 8.

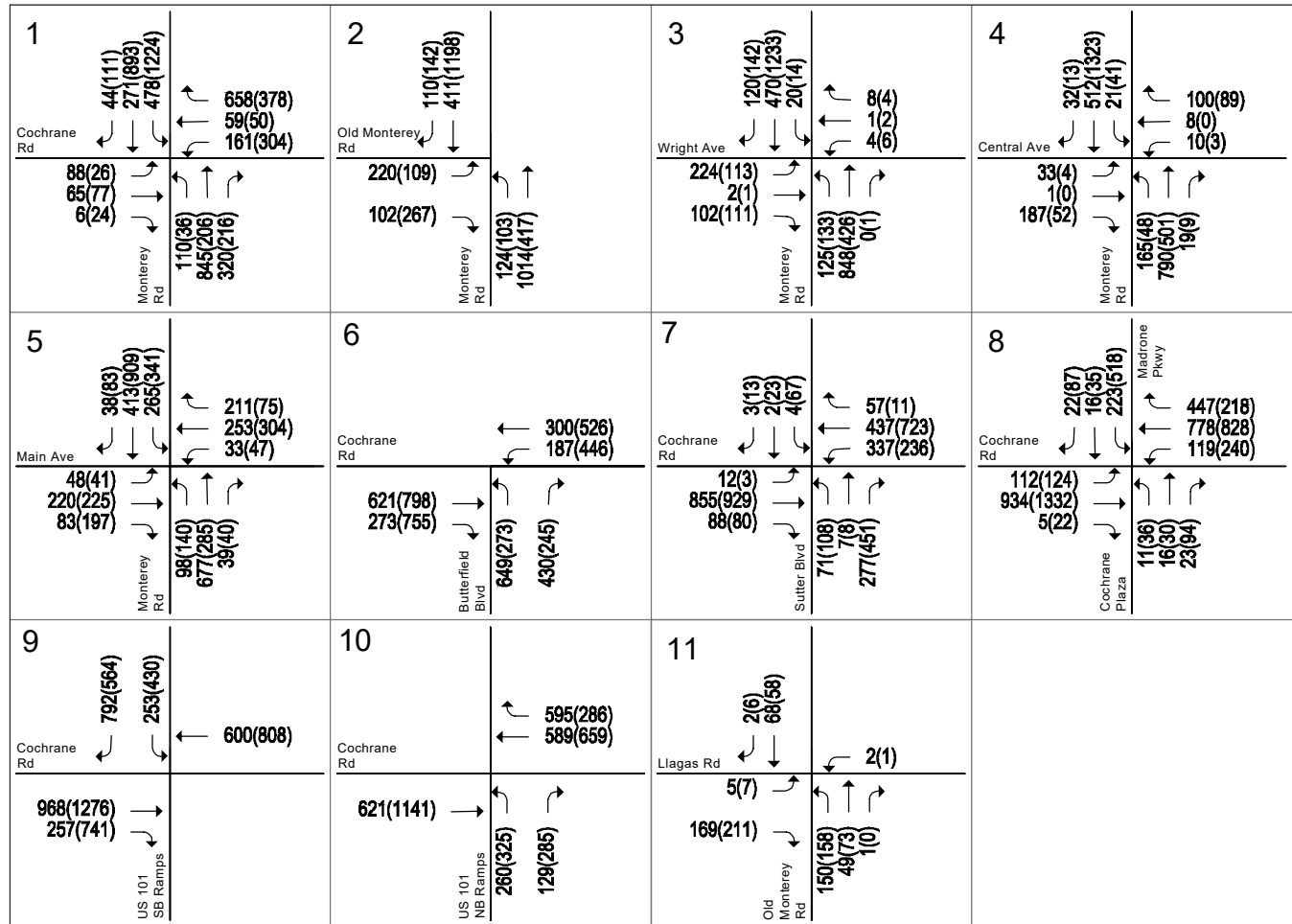
The Year 2025 Cumulative no project traffic volumes were then estimated using a growth method that involved adding a proportion (10 Years or 50%) of the 2035 projected growth, with removal of the trips associated with the adopted General Plan land uses for the project, to existing traffic counts at each of the study intersections.

Figure 11 shows the Year 2025 Cumulative No Project traffic volumes. Appendix B lists each of the components used to tabulate cumulative traffic volumes at each study intersection.

Year 2025 Cumulative Transportation Network

It is assumed in this analysis that the roadway network and intersection configurations under Year 2025 Cumulative without and with project conditions would be the same as described under existing and existing plus project conditions, respectively.

Figure 11
Year 2025 Cumulative No Project Traffic Volumes



LEGEND:

XX(X) = AM(PM) Peak-Hour Traffic Volumes

Year 2025 Project Trip Generation Estimates

The estimated project trips for the proposed development plan were added to Year 2025 Cumulative no project traffic volumes to represent Year 2025 Cumulative with project conditions. Figure 12 shows the Year 2025 Cumulative with project traffic volumes. Appendix B lists each of the components used to tabulate cumulative traffic volumes at each study intersection.

Intersection Levels of Service under Year 2025 Cumulative Conditions

The level of service results under Year 2025 Cumulative without and with project conditions are summarized in Table 9.

Monterey Road and Central Avenue

The results show that the intersection of Monterey Road and Central Avenue would operate at unacceptable and would have traffic volumes that meet thresholds that warrant signalization under Year 2025 Cumulative without and with project conditions during the AM peak hour when measured against the City of Morgan Hill level of service standards.

Therefore, based on the City's impact criteria and signal warrant analysis, the proposed project would result in a significant impact at the Monterey Road and Central Avenue intersection.

This intersection was also shown to operate at an unacceptable LOS and identified to be signalized in the General Plan. With signalization, the intersection would operate at acceptable LOS C or better during both peak hours under Year 2025 Cumulative with project conditions.

All other study intersections are projected to operate at acceptable levels of service under Year 2025 Cumulative without and with project conditions, during each of the peak hours analyzed. The level of service calculation sheets are included in Appendix C. The peak-hour signal warrant sheets are contained in Appendix D.

Table 8
General Plan 2035 Trip Generation Estimates

Land Use	Size	Daily		AM Peak Hour						PM Peak Hour					
		Rate	Trip	Split		Trip		Total	Rate	Split		Trip		Total	
				In	Out	In	Out			In	Out				
Proposed Land Uses															
Single-Family Detached Housing (ITE LU 210)	101 Dwelling Units	9.440	953	0.740	25%	75%	19	56	75	0.990	63%	37%	63	37	100
Housing and Retail Mixed-Use Reduction (15%) ¹			-20				0	0	0				-1	-1	-2
Shopping Center (ITE LU 820)	3,500 Square Feet	37.750	132	0.940	62%	38%	2	1	3	3.810	48%	52%	6	7	13
Housing and Retail Mixed-Use Reduction (15%) ¹			-20				0	0	0				-1	-1	-2
Retail Passby (20%) ⁵			-2				0	0	0				-1	-1	-2
Total Project Trips			1,043				21	57	78				66	41	107
Approved Land Uses															
Single-Family Detached Housing (ITE LU 210)	52 Dwelling Units	9.440	491	0.740	25%	75%	10	28	38	0.990	63%	37%	32	19	51
Housing and Retail Mixed-Use Reduction (15%) ¹			-17				0	0	0				-1	-1	-2
Housing and Employment Mixed-Use Reduction (3%) ²			-1				0	0	0				0	0	0
Shopping Center (ITE LU 820)	3,000 Square Feet	37.750	113	0.940	62%	38%	2	1	3	3.810	48%	52%	5	6	11
Housing and Retail Mixed-Use Reduction (15%) ¹			-17				0	0	0				-1	-1	-2
Employment and Retail Mixed-Use Reduction (3%) ³			-1				0	0	0				0	0	0
Retail Passby (20%) ⁴			-2				0	0	0				-1	-1	-2
General Office Building (ITE LU 710)	3,000 Square Feet	9.740	29	1.160	86%	14%	3	0	3	1.150	16%	84%	0	3	3
Housing and Employment Mixed-Use Reduction (3%) ²			-1				0	0	0				0	0	0
Employment and Retail Mixed-Use Reduction (3%) ³			-1				0	0	0				0	0	0
Total Project Trips			593				15	29	44				34	25	59
Difference between Proposed and Approved Uses			450				6	28	34				32	16	48

Source: ITE Trip Generation Manual, 10th Edition 2017

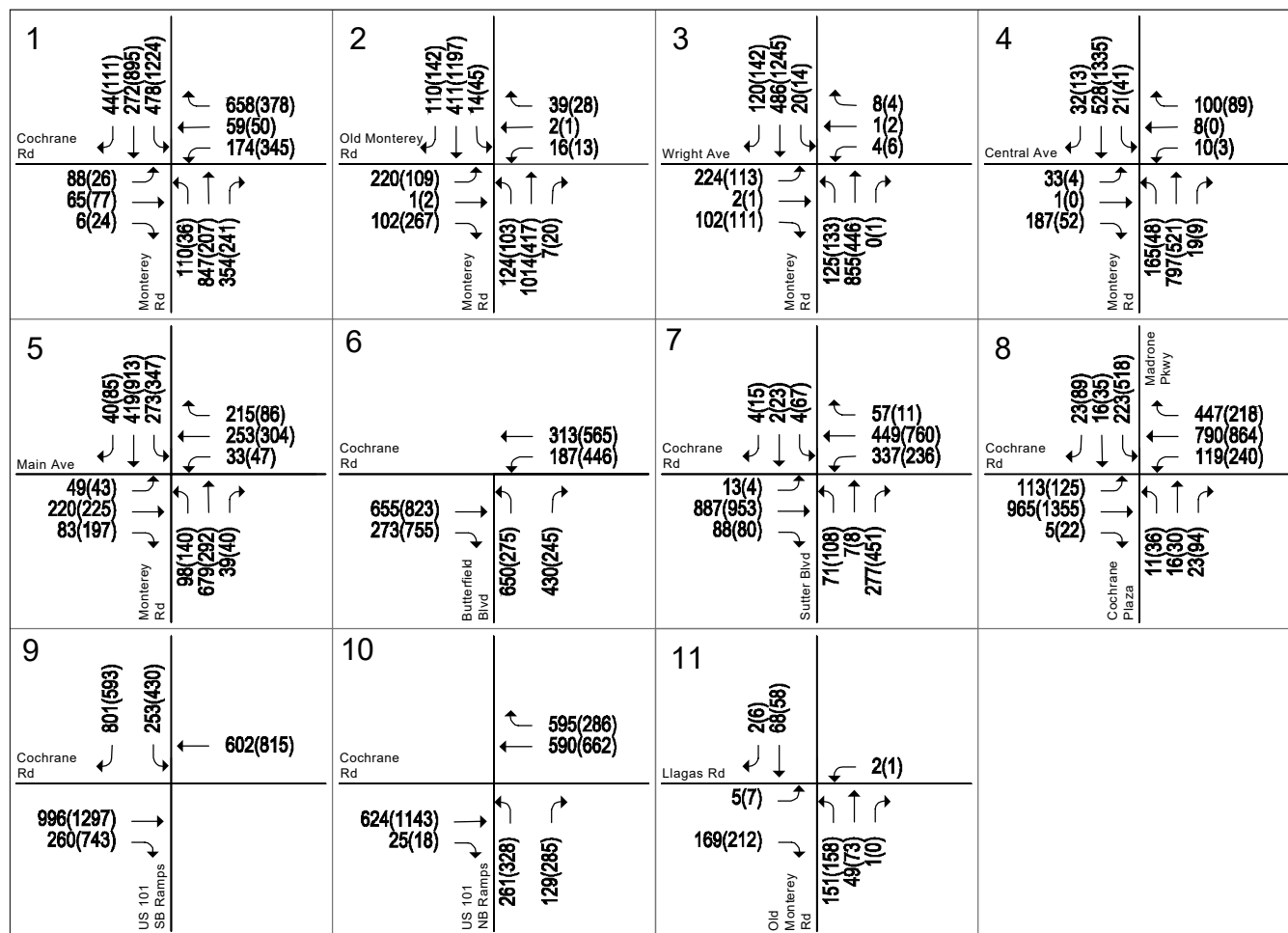
¹As prescribed by the VTA Transportation Impact Analysis Guidelines (October 2014), the maximum trip reduction for a mixed-use development project with housing and retail components is equal to 15% off the smaller trip generator.

²As prescribed by the VTA Transportation Impact Analysis Guidelines (October 2014), the maximum trip reduction for a mixed-use development project with housing and employment components is equal to 3% off the smaller trip generator.

³As prescribed by the VTA Transportation Impact Analysis Guidelines (October 2014), the maximum trip reduction for a mixed-use development project with employment and employee-serving retail components is equal to 3% off the employment component.

⁴20% pass-by reduction is typically applied for retail development within the City of Morgan Hill.

Figure 12
Year 2025 Cumulative with Project Traffic Volumes



LEGEND:

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Table 9
Year 2025 Cumulative Intersection Levels of Service

Int. #	Intersection	Control	LOS Standard	Peak Hour	Year 2025 Cumulative			Year 2025 Cumulative with Project					
					Warrant Met?	Delay ¹	LOS	Warrant Met?	Delay ¹	LOS	Incr. In Crit. Delay	Incr. In Crit. V/C	
1	Monterey Road and Cochrane Road	Signal	E	AM	--	29.1	C	--	29.2	C	0.3	0.005	
2	Monterey Road and Old Monterey Road	Signal	D	AM	--	11.0	B	--	20.4	C	5.2	0.168	
				PM	--	16.6	B	--	25.2	C	7.1	0.041	
3	Monterey Road and Wright Avenue	Signal	D	AM	--	21.0	C	--	21.1	C	0.1	0.002	
				PM	--	21.8	C	--	21.9	C	0.1	0.004	
4	Monterey Road and Central Avenue	TWSC	D	AM	Yes	36.9	E	Yes	39.4	E	N/A	N/A	
				PM	No	23.0	C	No	23.6	C	N/A	N/A	
5	Monterey Road and Main Avenue	Signal	F	AM	--	46.4	D	--	46.6	D	0.3	0.006	
				PM	--	47.6	D	--	47.7	D	0.1	0.003	
6	Butterfield Boulevard and Cochrane Road	Signal	D	AM	--	12.6	B	--	12.7	B	0.1	0.007	
				PM	--	13.5	B	--	13.4	B	0.0	0.000	
7	Sutter Boulevard and Cochrane Road	Signal	D	AM	--	17.5	B	--	17.6	B	0.0	0.007	
				PM	--	17.5	B	--	17.5	B	0.1	0.013	
8	Madrone Parkway/Cochrane Plaza and Cochrane Road	Signal	E	AM	--	18.9	B	--	18.9	B	0.0	0.001	
				PM	--	31.9	C	--	31.8	C	-0.1	0.005	
9	US 101 Southbound Ramps and Cochrane Road	Signal	E	AM	--	13.9	B	--	14.0	B	0.2	0.011	
				PM	--	19.5	B	--	19.8	B	0.6	0.015	
10	US 101 Northbound Ramps and Cochrane Road	Signal	E	AM	--	7.9	A	--	7.9	A	0.0	0.000	
				PM	--	11.5	B	--	11.5	B	0.0	0.002	
11	Old Monterey Road and Llagas Road	AWSC	D	AM	No	8.5	A	No	8.5	A	N/A	N/A	
				PM	No	8.9	A	No	8.9	A	N/A	N/A	
<u>Notes:</u> ¹ The reported delay and corresponding level of service for signalized and all-way stop-controlled intersections represent the average delay for all approaches at the intersection. The reported delay and corresponding level of service for two-way stop-controlled intersections are based on the stop-controlled approach with the highest delay. Bold indicates unacceptable level of service or signal warrant met. Bold and boxed indicate significant impact.													

6. Conclusions

The potential impacts of the project were evaluated in accordance with the standards set forth by the City of Morgan Hill and the Santa Clara Valley Transportation Authority (VTA). The study included an analysis of AM and PM peak-hour traffic conditions for nine signalized intersections and two unsignalized intersections during the weekday AM and PM peak hours. The weekday AM peak hour of traffic is generally between 7:00 AM and 9:00 AM and the weekday PM peak hour is typically between 4:00 PM and 6:00 PM. It is during these periods that the most congested traffic conditions occur on a typical weekday.

The impacts of the project on intersections were identified on the basis of the City of Morgan Hill Level of Service standards. Project impacts on other transportation facilities, such as pedestrian facilities, bicycle facilities and transit, were determined on the basis of engineering judgment.

Existing Plus Project Intersection Levels of Service Analysis

The results show all study intersections are projected to operate at acceptable levels of service under existing plus project conditions.

Freeway Segment Capacity

Per CMP technical guidelines, freeway segment level of service analysis shall be conducted on all segments to which the project is projected to add one percent or more to the segment capacity. Since the project is not projected to add one percent to any freeway segments in the area, freeway analysis for the CMP was not required.

Year 2025 Intersection Levels of Service Analysis

The results show that one of the study intersections would be significantly impacted by the project under Year 2025 Cumulative conditions according to the City of Morgan Hill impact criteria. The proposed improvements to mitigate the impact are described below.

Monterey Road and Central Avenue

The results show that the intersection of Monterey Road and Central Avenue would operate at unacceptable and would have traffic volumes that meet thresholds that warrant signalization under

Year 2025 Cumulative without and with project conditions during the AM peak hour when measured against the City of Morgan Hill level of service standards.

Therefore, based on the City's impact criteria and signal warrant analysis, the proposed project would result in a significant impact at the Monterey Road and Central Avenue intersection.

This intersection was also shown to operate at an unacceptable LOS and identified to be signalized in the General Plan. With signalization, the intersection would operate at acceptable LOS C or better during both peak hours under Year 2025 Cumulative with project conditions.

All other study intersections are projected to operate at acceptable levels of service under Year 2025 Cumulative without and with project conditions, during each of the peak hours analyzed.

Other Transportation Issues

Site Access

A new east approach to the intersection of Monterey Road and Old Monterey Road would serve as the project driveway. A southbound left-turn lane would also be added to this intersection to facilitate full-access to the project site.

On-Site Circulation

As shown on the site plan, an internal roadway system provides a connection between every residential unit and retail space to the project driveway. The proposed 26-foot wide internal roadway would be sufficient to serve two-way traffic throughout the project site.

The project site plan shows sidewalks along the main internal drive aisle and the project frontage on Monterey Road. The proposed pedestrian sidewalks along the project site frontage would provide a connection to other existing pedestrian facilities (sidewalks, crosswalks, bus stops, etc.) along Monterey Road. However, there would still be a short segment of missing sidewalks (approximately 150 feet) along the adjacent property's frontage south of the project site on the east side of Monterey Road between the project site and Granada Street.

The project site should be designed following City of Morgan Hill design standards and provide adequate width and turn-radii at and along all drive/parking aisles to allow for two-way circulation and adequate circulation of larger vehicles (such as emergency trucks, garbage truck, and delivery trucks) throughout the project site. Adhering to City of Morgan Hill standards and requirements, and implementing the above recommendations, the proposed site access point and layout of the surface parking areas would be adequate to accommodate circulation of both passenger and emergency vehicles.

Emergency Vehicle Access and Circulation

The 26-foot wide internal roadway would provide emergency vehicles (fire trucks) sufficient space to access each of the residential units and retail space on-site. There are several dead-end drive aisles that would not provide sufficient space for emergency vehicles to turn around. However, the dead-ends will be located along short segments of roadways. Thus, vehicles can back out the roadways.

Intersection Operations Analysis

Monterey Road and Old Monterey Road

The queuing analysis indicates that the maximum vehicle queues for the southbound left-turn movement and westbound approach are projected to be 75 and 50 feet long, respectively. Therefore, the southbound left-turn pocket should be designed to accommodate a 75-foot long queue. The driveway throat between Monterey Road and the internal roadway is measured to be approximately 50 feet on the site plan, which would provide sufficient storage for two vehicles to accommodate the projected queues of 50 feet long.

Transit, Pedestrian, and Bicycle Analysis

The project site is not directly served by any bus route. The nearest bus stops for Route 68 to the project are located within walking distance approximately $\frac{1}{4}$ of a mile from the project near the intersection of Hale Avenue and Llagas Road. A typical mode split in Morgan Hill would be a three percent transit share. Assuming up to three percent transit mode share for the project equates to no more than three transit riders during either the AM or PM peak hours. The transit ridership demands of the proposed project would not justify the enhancement of the existing transit facilities.

Sidewalks are provided along on the east side of Monterey Road with a short discontinuity between Old Monterey Road and Granada Street and on the west side of street south of Old Monterey Road. The project is proposing to provide sidewalks along the project frontage on Monterey Road, but there would still be a missing sidewalk along the adjacent property south of the project site. The signalized intersection of Monterey Road and Old Monterey Road currently has a crosswalk across the south approach providing a connection between sidewalks on both sides of Monterey Road. These pedestrian facilities will provide a pedestrian connection between the project site and nearby land uses along Monterey Road.

Bike lanes are currently provided along the length of Monterey Road with a discontinuity between Main Avenue and Dunne Avenue. There also are bike lanes along Main Avenue, Cochrane Road, Butterfield Boulevard, and Hale Avenue. It is expected that bicycle trips would comprise no more than one percent of the total project-generated trips. Thus, the project could potentially generate no more than one new bicycle trip during each of the peak hours. The demand generated by the proposed project could be accommodated by the existing bicycle facilities in the vicinity of the project site.