DAMIEN HIGH SCHOOL MASTER PLAN UPDATE

CASE NO. 61-17CUP

CITY OF LA VERNE

INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

February 22, 2019

Public Review

Lead Agency:

City of La Verne
3660 "D" Street,
La Verne, California 91750

Prepared by:

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(LSA Project No. LVR1801)

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Appendix F Traffic Impact Analysis
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INITIAL STUDY

1.	**Project Title:**	Damien High School Master Plan Update (see Appendix A); Case No. 61-17CUP
2.	**Lead Agency Name and Address:**	City of La Verne 3660 "D" Street La Verne, California 91750
3.	**Contact Person and Phone Number:**	Luke Seibert, Senior Planner City of La Verne (909) 596-8706 • lseibert@cityoflaverne.org
4.	**Project Location:**	Damien High School is located at 2280 Damien Avenue on the corner of Damien and Bonita Avenues in the southwestern portion of the City of La Verne. The project's Assessor's Parcel Number is 8381-036-029 (see Figures 1 and 2).
5.	**Project Sponsor's Name and Address:**	The Archdiocese of Los Angeles Department of Catholic Schools 3424 Wilshire Boulevard, 7th Floor Los Angeles, California 90010-2242
6.	**General Plan Designation:**	Community Facility | Freeway
7.	**Zoning:**	Institutional (I)
8.	**Description of Project:**	The proposed project is the update to the Damien High School Master Plan. The campus site (project site) is located approximately 1 mile south of State Route 210 (SR-210) and approximately 2 miles north of Interstate 10 (I-10). The Bracket Field Airport is located approximately 0.5 miles southeast of the project site, and Puddingstone Reservoir is located approximately 0.5 miles southwest of the project site. Figures 1 and 2 detail the regional and project location. The Damien High School campus comprises 25.8 acres with an average annual population of 940 students and approximately 75 faculty/staff. Existing building area totals approximately 132,731 square feet of academic, administrative, and athletic facilities, with 415 parking spaces on campus. Table A identifies the existing building area for each facility, Figure 3 outlines the existing facilities on the project site, and Figure 4 provides photographs of the existing environmental conditions of the project site. The Master Plan Update is divided into three phases. At full buildout, the Master Plan Update proposes demolition of the existing 5,972-square foot (sf) cafeteria facility, construction of four new buildings totaling approximately 73,100 sf of new building area, as well as several alterations to select hardscaped areas and parking lots (net increase of 67,128 sf). Upon buildout of the Master Plan Update, the campus would have a net increase of five parking spaces, totaling 420 spaces. The proposed Master Plan Update is based on the need to fulfill a current demand for additional academic space and student services, as the high school is not projecting an increase in students or faculty throughout the life of the Master Plan. The Master Plan Update is designed as a living document to allow projects identified in later phases to be brought forward to an earlier phase, as needed, and to allow discretionary use of proposed facilities in response to the demands of the school curriculum. Phases 1 through 3 are outlined in Table B, Figure 5 (Demolition Plan), and Figure 6A (Master Plan).

Table A: Existing Damien High School Buildings

Building	Square Feet
100	8,576
200	6,900
300	12,300
400	6,350
500	3,500
600	14,260
Lunch Area	5,422
Spartan Hall	4,414
Event Center	14,077
Concession	1,560
Pool Building	1,868
Gymnasium	36,150
Maintenance Bldg.	2,800
Priest's Garage	400
Priest's Residence	10,104
Lunch Pavilion	4,050
Total	**132,731**

Source: Existing Conditions, Damien High School Master Plan (December 2018)

Table B: Demolition and Construction under Each Phase

Figure #	Map ID	Building/Parking Lot	Phase 1	Phase 2	Phase 3
Demolition					
5 and 6B	A	5,972 sf cafeteria facility	X		
5, 6B, and 6C	B	6 tennis courts	X	X	
5 and 6C	C	Portion of parking lot north of Gymnasium		X	
5 and 6D	D	73-space parking lot east of the Event Center			X
Construction					
6B	1	7,500 sf Student Center	X		
6B	2	Restripe parking lot west of the 100 Building	X		
6B	3	5,000 sf Wrestling Room	X		
6C	4	18,600 sf Classrooms		X	
6C	5	27,500 sf Chapel/Classroom Building		X	
6C	6	Grand Promenade		X	
6C	7	Reconfigure parking lot west of Grand Promenade		X	
6C	8	134-space parking lot south of Gymnasium		X	
6C	9	Two sports courts		X	
6D	10	400-seat/14,500 sf Performing Arts Center			X

Source: Damien High School Master Plan (December 2018)
sf = square feet

Phase 1: Figure 6B details the Phase 1 site plan. Phase 1 includes demolition of the existing 5,972 sf cafeteria facility comprising a 5,422 sf shelter and a 550 sf

portable structure located south of Building 100 in the northwestern portion of the project site (refer to "A" in Figure 6B). The cafeteria facility proposed for demolition would be replaced by a new 7,500 sf Student Center that would include food service and also serve as a venue for formal and informal student gatherings, meetings, and receptions (refer to #1 in Figure 6B). Temporary provisions for food service to students would be made during construction of the Student Center. The existing parking lot west of Building 100 would be restriped as 90-degree parking and include accessibility requirements in accordance with Chapter 18.76 (Parking and Loading Space Requirements) of the La Verne Municipal Code (refer to #2 in Figure 6B). The restriping would result in a loss of six parking spaces, from 415 spaces to 409 spaces upon completion of Phase 1 but provide for additional landscaped areas and a more functional parking lot layout. In addition, Phase 1 includes removal of one tennis court (refer to "B" in Figure 6B) and construction of a 5,000 sf Wrestling Room adjacent to the south of the existing Event Center in the center of campus (refer to #3 in Figure 6B).

Phase 2: Figure 6C details the Phase 2 site plan. Phase 2 includes construction of two new buildings on campus: a two-story over basement 18,600 sf classroom facility anticipated to be used primarily as a Science Building (refer to #4 in Figure 6C) and a one-story 27,500 sf Chapel/Classroom Building that is anticipated to serve the athletic and music departments as well (refer to #5 in Figure 6C). Also under Phase 2, a Grand Promenade would be constructed between the gymnasium and lunch pavilion (refer to #6 in Figure 6C). The western parking lot along Damien Avenue would be reconfigured (refer to #7 in Figure 6C), and a new parking lot and two sport courts would be constructed at the southwest corner of campus off of Palomares Street (refer to #8 and #9 in Figure 6C). Demolition activities include removal of five tennis courts (refer to "B" in Figure 6C) and a portion of a parking lot along the existing gymnasium frontage (refer to "C" in Figure 6C).

Currently, pedestrian circulation through campus is interrupted by parking lots and drive aisles. The introduction of a Grande Promenade would serve as a major focal component to the Master Plan Update and establish the reimagined framework of development on campus. The Grand Promenade would link the north and south ends of the campus and separate pedestrians from vehicle circulation by removing portions of a parking lot and creating gathering areas, quads, and a plaza along the gymnasium frontage, which would set the stage for development and improvements on both sides of the pedestrian connection.

The existing parking lot on the west side of the proposed promenade would be reconfigured in accordance with Chapter 18.76 (Parking and Loading Space Requirements) of the La Verne Municipal Code. The Grand Promenade would remove the vehicle circulation through the center of campus while the reconfigured parking lot would include improvements to the main entrance along Damien Avenue to establish a welcoming and secure entrance to the campus. The proposed 27,500 sf Chapel/Classroom Building would be constructed on the east side of the promenade and be equipped with a 220-seat dedicated Chapel, college counseling offices, academic classrooms, a band room, snack bar, and student store. Farther to the northeast, the proposed two-story over basement 18,600 sf classroom facility would include eight new classrooms with offices and

ancillary rooms on the upper two levels, with team meeting areas potentially dedicated for the basement level to serve the athletic department.

Phase 2 would also include construction of a new 134-space parking lot and two sport courts located south of the Gymnasium near the intersection of Damien Avenue and Palomares Avenue. Due to topographic constraints, the new parking lot would have vehicle access along Palomares Avenue and connect to the campus via pedestrian walkways.

As stated previously, Phase 2 includes demolition of five on-site tennis courts and a portion of a parking lot along the existing gymnasium frontage to accommodate the proposed Grand Promenade. Due to the small number of students participating in tennis, Damien High School representatives determined the land currently dedicated to the tennis courts would be better utilized to serve the school's academic and spiritual needs. Meanwhile, off-site tennis courts would be utilized to accommodate and continue Damien's long-standing tennis program. Upon completion of Phase 2, campus parking would increase from 409 spaces to 493 spaces.

Phase 3: Figure 6D details the Phase 3 site plan. Phase 3 includes demolition of a 73-space parking lot east of the existing Event Center, located near the center of the campus, which would be replaced with a 400-seat, 14,500 sf Performing Arts Center (refer to "D" and #10 in Figure 6D). Upon execution of all three phases of the proposed Master Plan Update, Damien High School would include a total of approximately 199,859 sf of academic, administrative, and athletic facilities.[1] Campus parking would be reduced from Phase 2 conditions due to demolition of the existing 73-space parking lot under Phase 3, but the campus would experience an overall increase of 5 parking spaces from existing conditions (i.e., from 415 spaces under existing conditions to 420 spaces under buildout of Phase 3).

9. Surrounding Land Uses and Setting:

The 25.8-acre site is located in the southwestern portion of the City. The site is fully developed with the Damien High School including buildings, tennis courts, pool, gymnasium, football stadium, baseball fields, and associated parking lots and landscaping.

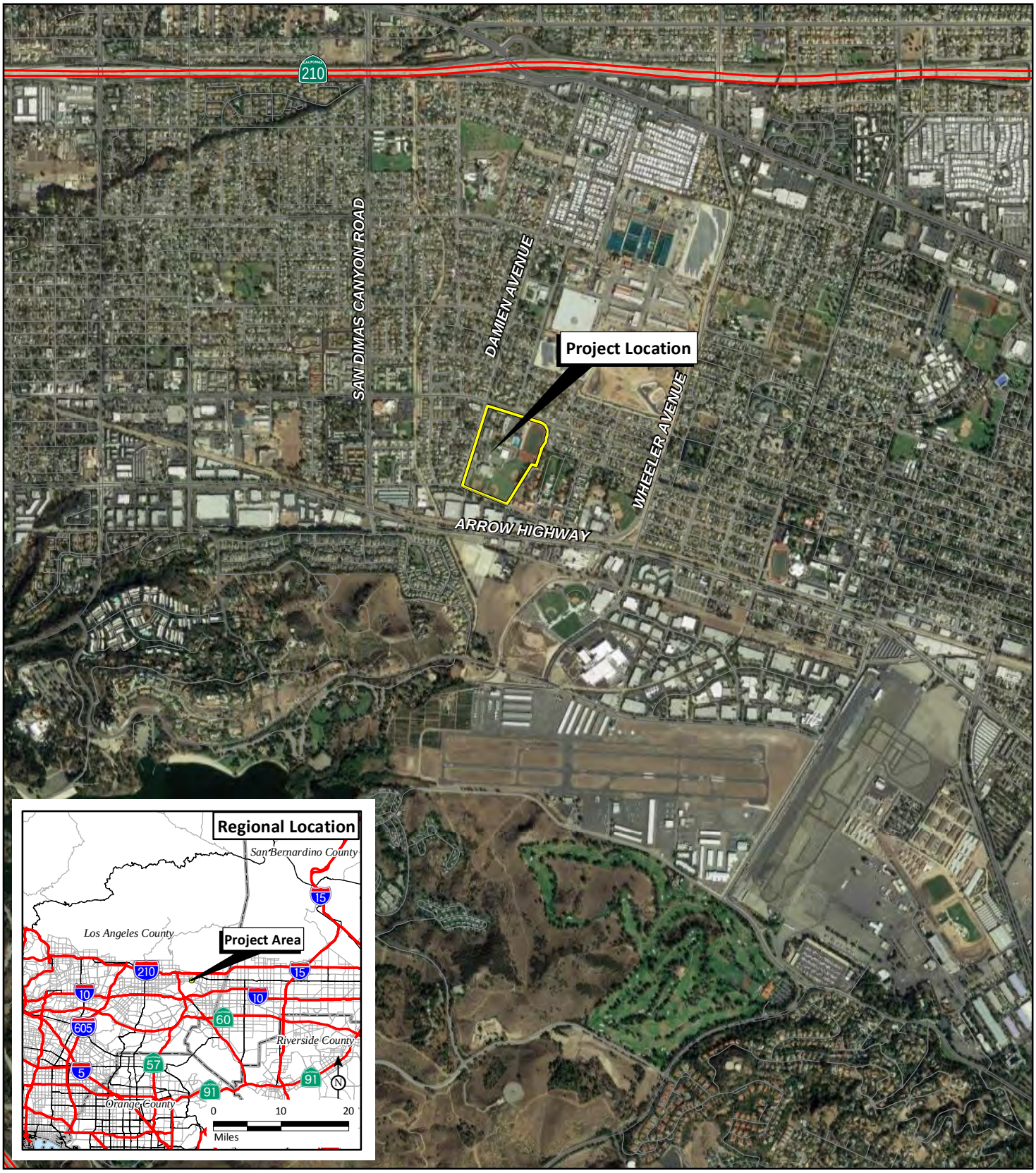
The project site is surrounded by residential uses to the north and west across Bonita Avenue and Damien Avenue, respectively. The project site is bordered to the east by the campus of the Joan Macy School/David and Margaret Youth and Family Services Organization, residential uses, and commercial uses. South of the project site are light industrial uses across Palomares Avenue (see Figure 2 for surrounding land uses and Figure 4 for site photographs).

10. Public Agencies Whose Approval is Required:

The project requires approval by the City of La Verne. The entitlements required from the City include:

- *Conditional Use Permit | Master Plan Update*
- *Precise Plan Review | New Construction and Landscaping within Phased Master Plan Update*

[1] 132,731 sf of existing facilities minus 5,972 sf of demolition plus 73,100 sf of new construction = total of 199,859 sf



LSA

FIGURE 1

Damien High School Master Plan Update

Regional and Project Location

SOURCE: Google Earth, 2016; ESRI Streetmap, 2013.

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LSA

LEGEND

Project Boundary

FIGURE 2

N

0 250 500

FEET

SOURCE: Google Earth, 2016; ESRI Streetmap, 2013.

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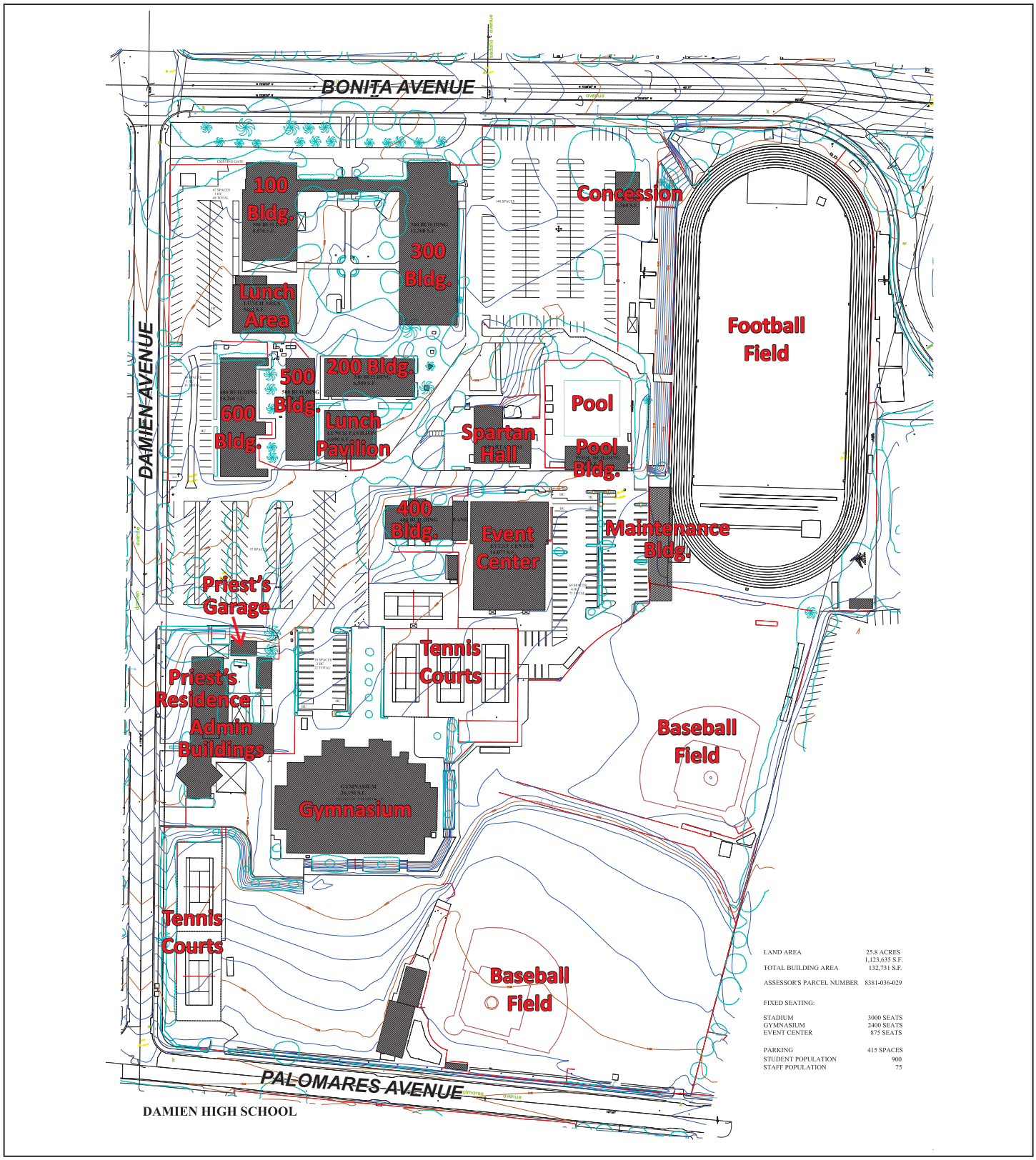
Damien High School Master Plan Update

Project and Surrounding Land Uses



LSA

FIGURE 3

N

0 100 200
FEET

SOURCE: Kalban Architects, 2017

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Damien High School Master Plan Update

Existing Damien High School Campus

Figure 4: Site Photographs

A. Lunch Area to be demolished and replaced with a 7,500 sf Student Center under Phase 1 | facing northeast.

B. Site of future 18,600 sf classroom facility under Phase 2 | facing south.

Figure 4: Site Photographs (cont'd)

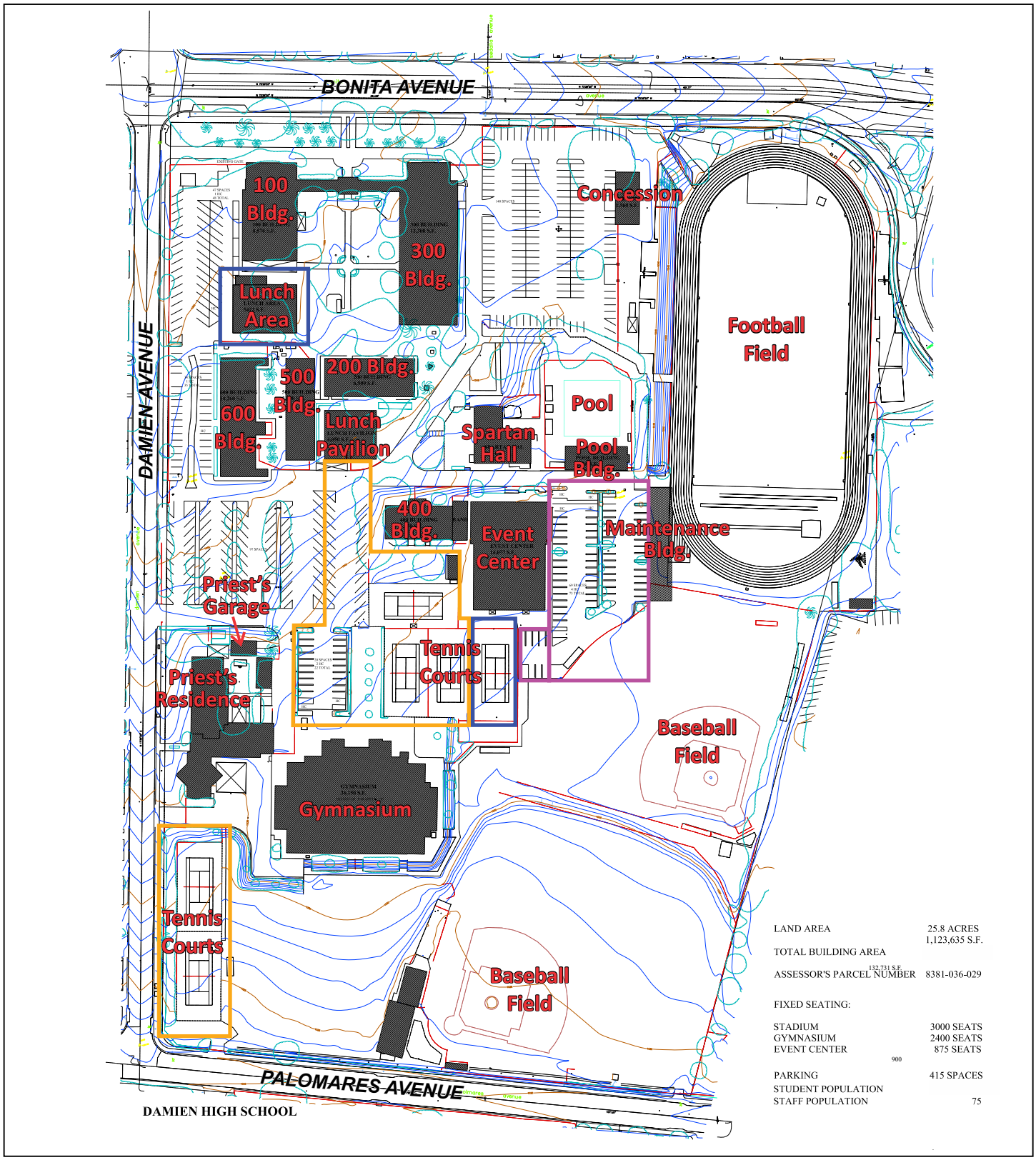
C. Site of future 5,000 sf Wrestling Room under Phase 1 and one-story 27,500 sf Chapel/Classroom Building under Phase 2 | facing east.

D. Site of future Grande Promenade under Phase 2 | facing north.

Figure 4: Site Photographs (cont'd)

E. Future site of a new 134-space parking lot and two sport courts under Phase 2 | facing northwest.

F. 73-space parking lot to be demolished and replaced with a 400-seat, 14,500 sf Performing Arts Center under Phase 3 | facing southeast.



LSA

LEGEND

- Phase 1
- Phase 2
- Phase 3

FIGURE 5

N

0 100 200

FEET

Damien High School Master Plan Update

Demolition Plan

SOURCE: Kalban Architects, 2017

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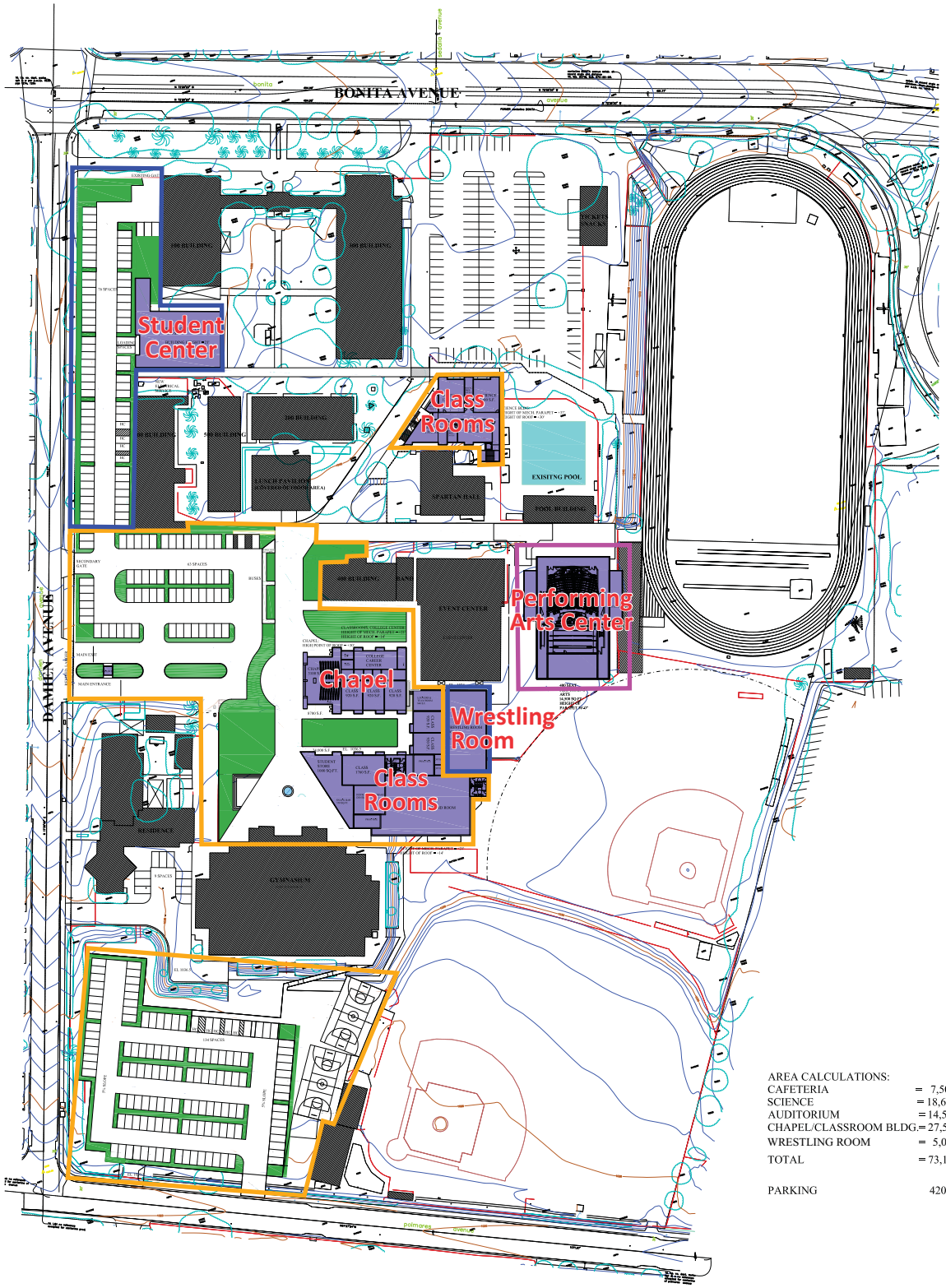

LSA

FIGURE 6A

LEGEND

- Phase 1
- Phase 2
- Phase 3
- Existing Buildings
- Proposed Buildings

N

0 100 200

Damien High School Master Plan Update

Master Plan Full Build Out

SOURCE: Kalban Architects, 2018

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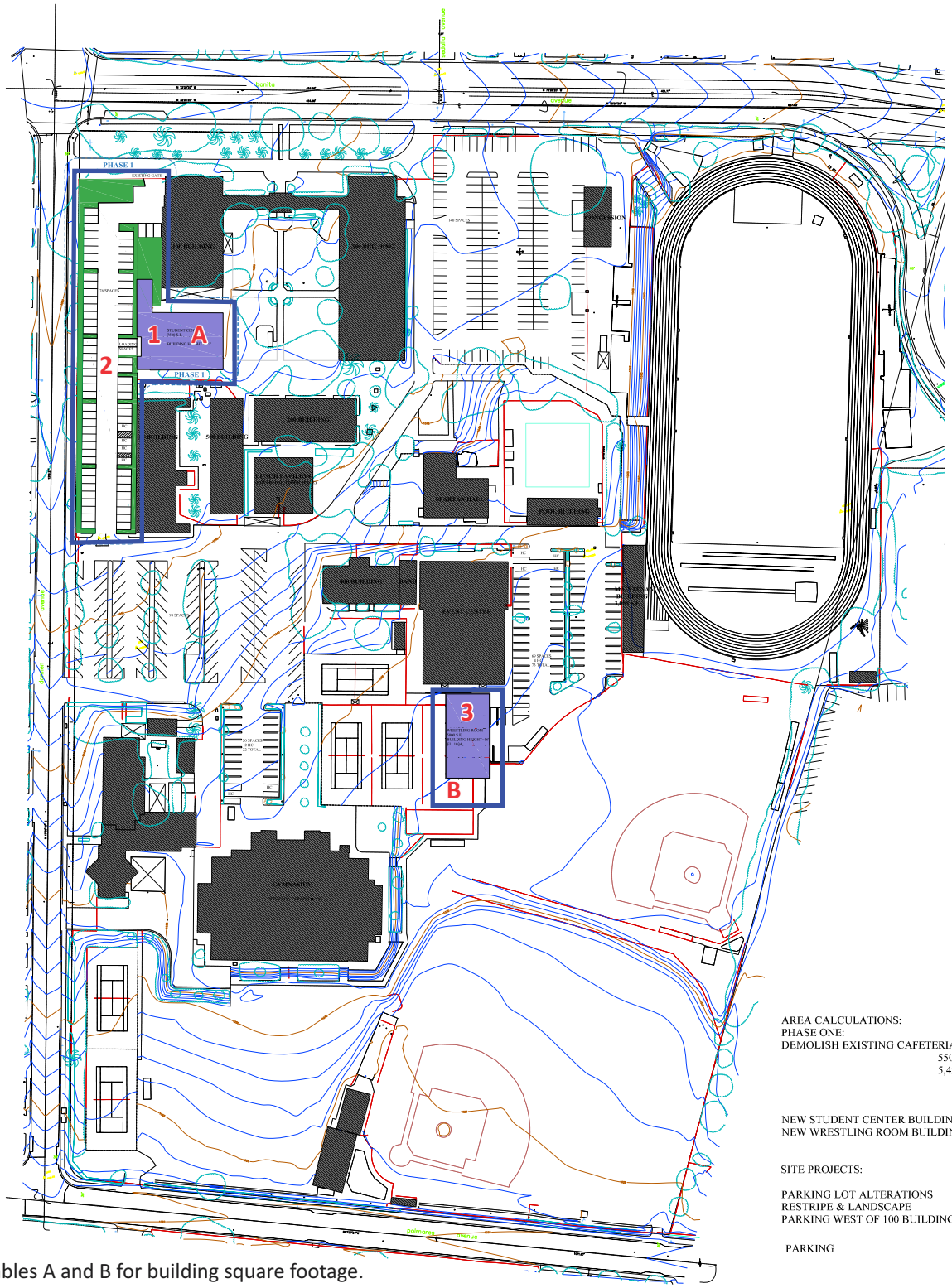

Note: See Tables A and B for building square footage.
For demolition location, please see Figure 5 "Demolition Plan"

LSA

FIGURE 6B

LEGEND

Phase 1

Demolition

- A Lunch Area
- B Tennis Court

Construction

- 1 Student Center
- 2 Re-stripe Parking
- 3 Wrestling Room

N

0 100 200

SOURCE: Kalban Architects, 2018

Damien High School Master Plan Update

Master Plan Phase 1

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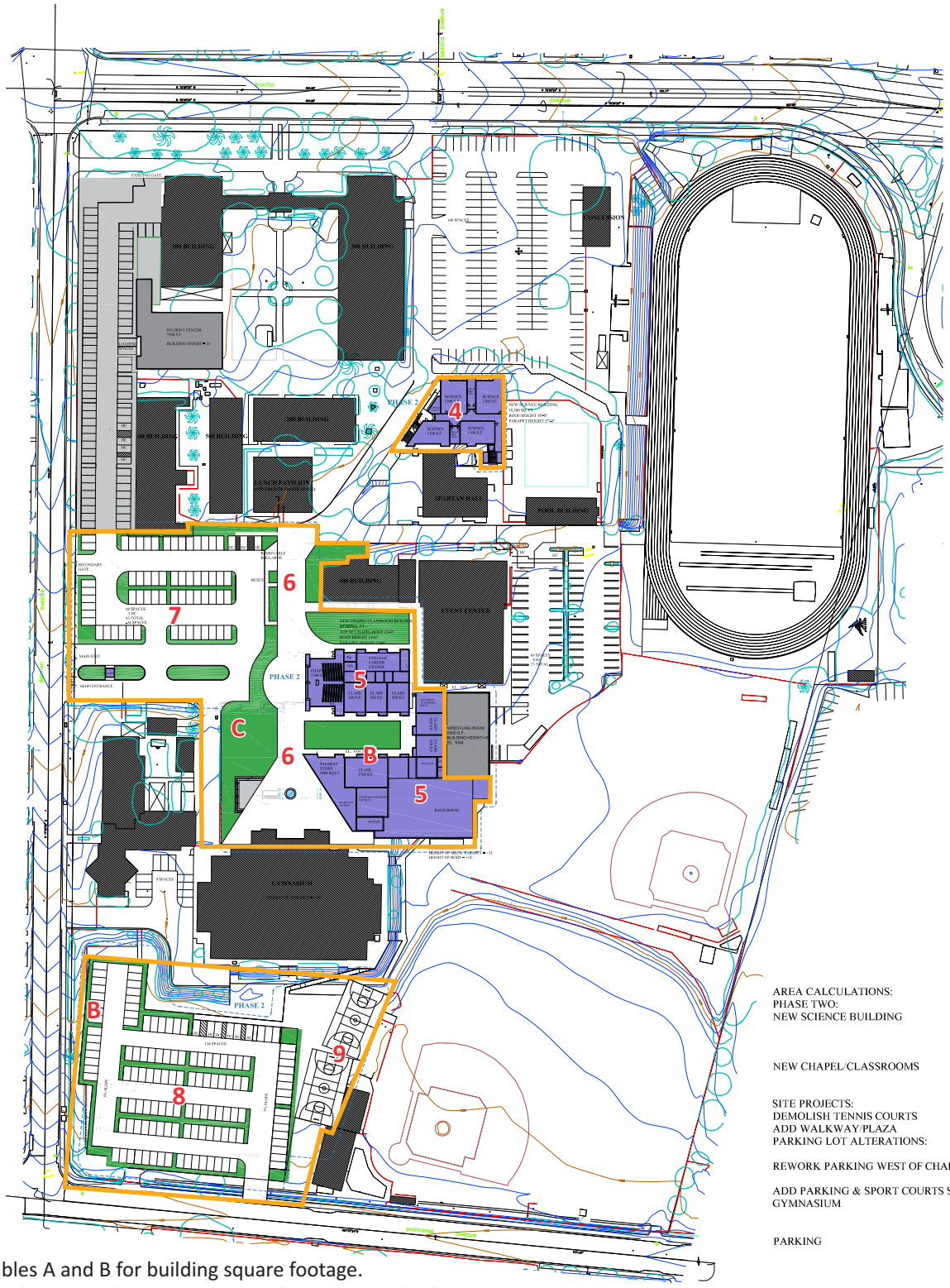

Note: See Tables A and B for building square footage.
For demolition location, please see Figure 5 "Demolition Plan"

LSA

FIGURE 6C

LEGEND

Phase 2

Demolition

- B Tennis Courts
- C Parking Lot

Construction

- 4 Classrooms
- 5 Chapel/Classrooms
- 6 Grand Promenade
- 7 Reconfigure Existing Parking Lot
- 8 New Parking Lot
- 9 Sport Courts

N

0 100 200

SOURCE: Kalban Architects, 2018

Damien High School Master Plan Update

Master Plan Phase 2

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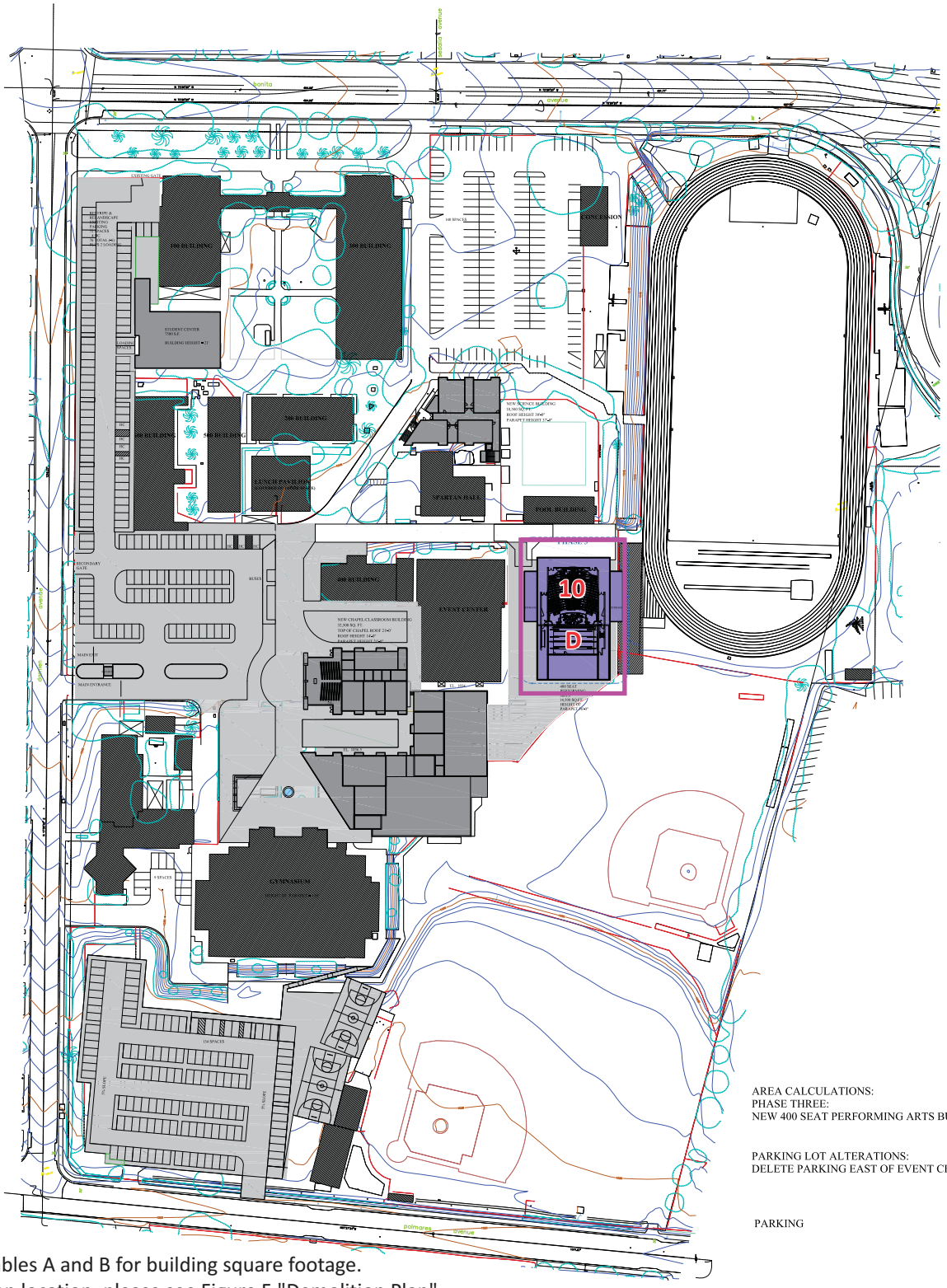

Note: See Tables A and B for building square footage.
For demolition location, please see Figure 5 "Demolition Plan"

LSA

FIGURE 6D

LEGEND

Phase 3

Demolition

D Parking Lot

Construction

10 Performing Arts Center

N

0 100 200

Damien High School Master Plan Update

Master Plan Phase 3

SOURCE: Kalban Architects, 2018

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Environmental Factors Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is "Potentially Significant" or "Potentially Significant Unless Mitigation Incorporated" as indicated by the checklist on the following pages.

☒ Aesthetics	☐ Agriculture and Forest Resources	☐ Air Quality
☒ Biological Resources	☒ Cultural Resources	☐ Geology/Soils
☐ Greenhouse Gas Emissions	☒ Hazards & Hazardous Materials	☐ Hydrology/Water Quality
☐ Land Use/Planning	☐ Mineral Resources	☒ Noise
☐ Population/Housing	☐ Public Services	☐ Recreation
☐ Transportation/Traffic	☒ Tribal Cultural Resources	☐ Utilities/Service Systems
☒ Mandatory Findings of Significance		

Determination

On the basis of this initial evaluation:

☐ 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 project proponent. 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" impact 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 potential significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature February 21, 2019
Date

Lucas Seibert
Printed Name

ENVIRONMENTAL CHECKLIST

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
I. Aesthetics				
Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☒	☐	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☒	☐	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Discussion

a) Potentially Significant Unless Mitigation Incorporated. According to the City's General Plan Resource Management Element, scenic views within La Verne consist of the San Gabriel Mountains, foothills, and canyons located in the northern portion of City (i.e., north of the project site). Views of these features from campus and along Palomares Avenue south of the campus are already obstructed by existing on-site structures and landscaping. The best views of the mountains are from large areas of open space, such as the athletic fields in the eastern part of campus.

All future development proposed under the Master Plan Update, including the proposed Performing Arts Center, would be subject to compliance with Chapter 18.60 (Institutional Zone) of the City Municipal Code, which includes requirements for setbacks, building height, lot coverage, and landscaping. Furthermore, a precise plan preview would be required and subject to approval by the Development Review Committee pursuant to Chapter 18.16 (Development Review). The process would ensure compliance with all applicable regulations pertaining to building orientation, form, massing, setbacks, height, color palette, building materials, and drought-tolerant landscaping. Additionally, the committee would review, discuss, and render a decision regarding the siting and design of all facilities proposed through the implementation of the Master Plan Update.

In accordance with Section 18.60.110, greater structural heights, more lot coverage, smaller setbacks, and similar adjustments to the standards of Chapter 18.60 (Institutional Zone) may be permitted in the Master Plan Update upon review and approval by the City Council after

recommendation by the City Planning Commission. Such adjustments are permitted provided they are necessary in response to the unique qualities of the institution and its site to support efficient and attractive development; impacts are minimized to the surrounding properties and to cultural, historic, and environmental resources; the proposed improvements otherwise meet the requirements and intent of the City Municipal Code, the City General Plan, and CEQA; and the benefits of the proposed development standard change(s) outweigh any potential adverse effects. Implementation of **Mitigation Measures CUL-1** and **CUL-2** would require an additional layer or review for each development project facilitated under the Damien High School Master Plan Update; subject to site- and design-level analyses to address any potential impacts to historical resources in accordance with Public Resources Code 21084.1. Any potential impacts that could result in a substantial adverse change to the significance of historical resources from implementation of the Master Plan Update could then be mitigated, as deemed feasible and appropriate, at the project-level in accordance with *CEQA Guidelines* Section 15064.5 and Section 15126.4(b)(1) to facilitate consideration of site- and design-level adjustments pursuant to Section 18.60.110 of the City Municipal Code.

The Master Plan Update includes construction of four new buildings to heights commensurate with the existing on-site buildings. Additionally all four proposed buildings would be constructed within the existing development footprint of the campus, generally within the internal portions of the campus. Therefore, scenic views from surrounding neighborhoods would remain unchanged. The proposed Performing Arts Center would be constructed immediately north of the baseball fields, adjacent to the east of the existing Event Center. Current views of the mountains from the campus athletic fields are partially obstructed by an existing maintenance building, pool building, and large ornamental trees.

The General Plan does not identify any specific landforms or scenic vistas within the project site or vicinity.[2] The nearest scenic view corridor is an easterly viewpoint of Bonita Avenue approximately 0.3 mile east of the project site at the intersection of Bonita Avenue and Wheeler Avenue. The proposed facilities under the Master Plan Update would not obstruct this viewpoint or any other scenic view corridor. The project site and vicinity are not considered to be part of or within the view shed of a scenic vista identified by the City, and through implementation of **Mitigation Measures CUL-1** and **CUL-2** and compliance with Chapter 18.60 (Institutional Zone) of the City Municipal Code, impacts to scenic vistas would remain **less than significant with mitigation incorporated.**

b) No Impact. The nearest State-designated scenic highway is State Route 2, located approximately 15.5 miles north of the project site. Locally, Bonita Avenue east of Wheeler Avenue is designated a scenic corridor in the City's General Plan Resource Management Element. The project site would not be visible from State Route 2. Additionally, the project site is approximately 0.3 mile west of the Bonita Avenue scenic view corridor, and none of the proposed facilities under the Master Plan Update would obstruct the historic structures or trees along this viewpoint or any other scenic view corridor.

The project site contains one coast live oak tree (*Quercus agrifolia* var. *agrifolia)* with a trunk diameter of seven inches measured four feet from the ground surface and is identified in the Master Plan as a protected tree. Therefore, the oak tree is considered a "Significant Tree" pursuant to Section 18.78.020(M) of the City Municipal Code. The Master Plan Update does not

[2] *Resource Management Element*. Map RM-5, Scenic View Corridors Map. City of La Verne General Plan. Adopted December 7, 1998.

include the removal or relocation of this tree, and it is not located within a state scenic highway or locally designated scenic roadway. Therefore, the project would not substantially damage scenic resources including, trees, rock outcroppings, and historic buildings within a state scenic highway or locally designated scenic roadway. **No Impact** would occur and no mitigation is required.

c). Potentially Significant Unless Mitigation Incorporated. Implementation of the proposed Master Plan Update would improve the aesthetic qualities of Damien High School and surrounding community. The proposed project would comply with Chapter 18.60 (Institutional Zone) of the City Municipal Code, which includes requirements for setbacks, building height, lot coverage, landscaping, and neighborhood compatibility. Furthermore, final development plans would be provided to the City for approval by the Development Review Committee pursuant to Chapter 18.16 (Development Review) to ensure compliance with all applicable regulations pertaining to building and site organization, form, massing, setback, building height, color, proposed building materials, and drought-tolerant landscaping to ensure appropriate placement and design of all facilities proposed through implementation of the Master Plan Update.

In accordance with Section 18.60.110, greater structural heights, more lot coverage, smaller setbacks, and similar adjustments to the standards of Chapter 18.60 (Institutional Zone) may be permitted in the Master Plan Update upon review and approval by the City Council after recommendation by the City Planning Commission. Such adjustments are permitted provided they are necessary in response to the unique qualities of the institution and its site to support efficient and attractive development; impacts are minimized to the surrounding properties and to cultural, historic, and environmental resources; the proposed improvements otherwise meet the requirements and intent of the City Municipal Code, the City General Plan, and CEQA; and the benefits of the proposed development standard change(s) outweigh any potential adverse effects. Implementation of **Mitigation Measures CUL-1** and **CUL-2** would require an additional layer or review for each development project facilitated under the Damien High School Master Plan Update; subject to site- and design-level analyses to address any potential impacts to historical resources in accordance with Public Resources Code 21084.1. Any potential impacts that could result in a substantial adverse change to the significance of historical resources from implementation of the Master Plan Update could then be mitigated, as deemed feasible and appropriate, at the project-level in accordance with *CEQA Guidelines* Section 15064.5 and Section 15126.4(b)(1) to facilitate consideration of site- and design-level adjustments pursuant to Section 18.60.110 of the City Municipal Code.

Through compliance with the City's Municipal Code, implementation of the Master Plan Update would improve upon the existing visual character of the project site while maintaining consistency with the existing visual character of the surrounding community. Damien High School is a major contributor to the existing visual character and historic fabric of Bonita Avenue as one of the earliest developments along the roadway. The campus boasts several facilities dating to the early 20th century that exemplify the tradition of the academic quadrangle, placing buildings in a square or rectangle formation surrounding a central, open space. Additionally, the primary façade of the academic quadrangle along Bonita Avenue exhibits the original archway corridor as a defining characteristic of the campus architecture. Accordingly, the proposed Master Plan Update includes several architectural elements designed to maintain the aesthetic and historical nature of the academic quadrangle while facilitating the anticipated future development of the Damien High School campus.

Demolition proposed under Phase 1 would remove the non-conforming late-1960s-era lunch shelter and portable structure located at the southwestern quadrant of the academic quadrangle, and replace them with a new Student Center maintaining the layout of the quadrangle with architectural features such as arches along its façade consistent with the original archway corridor along Bonita Avenue and architectural elements of the existing structures comprising the academic quadrangle. Construction and operation of the proposed wrestling room adjacent to the south of the existing Event Center would be commensurate with the existing athletic facilities in that area of the Campus and would not be visible from any portion of the academic quadrangle.

Under Phase 2, the proposed Grand Promenade (refer to #6 in Figure 6C) would serve as a major element in the Master Plan Update and establish the reimagined framework of development on campus. Current pedestrian circulation through campus is interrupted by parking lots and drive aisles. The Grand Promenade would link the north and south ends of the campus and separate pedestrians from vehicle circulation by removing portions of a parking lot and creating gathering areas, quads, and a plaza along the gymnasium frontage, which would set the stage for development and improvements on both sides of the pedestrian connection.

The existing parking lot on the west side of the proposed promenade (refer to #7 in Figure 6C) would be reconfigured in accordance with Chapter 18.76 (Parking and Loading Space Requirements) of the City Municipal Code. The Grand Promenade would cut off vehicle circulation through the center of campus while the reconfigured parking lot would include improvements to the main entrance along Damien Avenue to establish a welcoming and secure entrance to the campus and feature the proposed Chapel as the primary focal point for the main entrance.

The new parking lot at the southwest corner of campus (refer to #8 in Figure 6C) under Phase 2 would have vehicle access along Palomares Avenue and connect to the campus via pedestrian pathways. Construction of this parking lot and demolition of the 73-space parking lot east of the existing Event Center under Phase 3 (refer to "D" in Figure 6D) would separate pedestrian and vehicular circulation by placing vehicles along the perimeter of campus while facilitating pedestrian circulation through the center of campus where the academic, administrative, and athletic facilities are primarily located. Furthermore, all parking lot improvements would include additional landscaping elements both internally as well as long the perimeter of the campus in accordance with Section 18.60.080 and Chapter 18.118 (Water Efficient Landscapes) of the City Municipal Code.

All facilities proposed through implementation of the Master Plan Update would be constructed to heights commensurate with the existing on-site buildings and be located within the existing development footprint of the campus, generally within the internal portions of the campus. Section 18.60.090 of the City Municipal Code requires implementation of master plans in institutional zones to avoid adverse impacts to adjacent properties, including impacts on aesthetics, noise, light, health, privacy, and safety. Implementation of **Mitigation Measures CUL-1** and **CUL-2** and compliance with Chapter 18.60 (institutional Zone) would ensure implementation of the Master Plan Update would not include any features that would substantially degrade the appearance of the site or surrounding neighborhoods. Furthermore, compliance with Chapter 18.16 (Development Review), which would require all final development plans to be reviewed and approved by the City Development Review Committee pertaining to building orientation, form, massing, setbacks, height, color palette, building materials, and drought-tolerant landscaping, would ensure appropriate placement and design of

all facilities proposed through implementation of the Master Plan Update. Through implementation of **Mitigation Measures CUL-1** and **CUL-2** and compliance with Chapter 18.60 (Institutional Zone) and Chapter 18.16 (Development Review) of the City Municipal Code, impacts to the existing visual character or quality of the site and its surroundings would remain **less than significant with mitigation incorporated**.

d) Less than Significant Impact. Existing sources of light and glare within the project area include existing campus buildings and athletic facilities, which emit light and glare during daytime and nighttime hours, streetlights, exterior lighting from the nearby residential, light industrial, commercial, and institutional uses, and vehicle headlights from motorists driving by the project site on adjacent roadways. Development of the project site would reconfigure existing sources of light from parking lot demolition and construction and introduce new sources of light from security and safety lighting on proposed buildings. No changes are proposed to the athletic facility lighting.

Sources of glare from the project would include reflective building materials, and vehicles parked on campus. The amount of glare would depend on the location of the reflective surfaces and the direction of the sun. Any glare produced by reflective surfaces would be temporary, as the location of the sun would change throughout the day. Exterior surfaces of proposed facilities (e.g., grand promenade, and buildings) would be finished with a combination of architectural coatings and other materials (e.g., brick, wood, or stone). Materials utilized for the proposed facilities would not contain large expanses of reflective metal or other material that would generate substantial light or glare. All parking lot improvements would include additional landscaping elements both internally as well as along the perimeter of the campus in accordance with Section 18.60.080 (Institutional Zone – Landscaping) and Chapter 18.118 (Water Efficient Landscapes) of the City Municipal Code that would minimize glare impacts resulting from any reflective surfaces from buildings and vehicles. Therefore, the proposed project would not significantly increase the amount of daytime light or glare in the project area.

At night, the project's interior and exterior building lights and parking lot and landscape lighting would be visible from the nearby residential dwellings and surrounding public streets. However, these light sources would not have a significant impact on the night sky, as they would not exceed existing background light levels already present as a result of the existing campus facilities, including athletic facility lighting, and surrounding urban development.

All development in the City, which includes light generated from institutional uses and parking lots, is required to adhere to lighting requirements contained in the City's Municipal Code. Specifically, Section 18.76.090 requires all parking lot illumination to be designed so that light is shielded and directed away from adjoining properties and the public right-of-way. The measure applies to all development in the City. Furthermore, Section 18.60.090 would ensure implementation of the Master Plan Update would not adversely impact the surrounding community from the introduction of any new sources of light. A precise plan review will be required to address building design aspects as generally identified under the proposed Mater Plan Update. Precise plan review would be reviewed and approved by the City's Development Review Committee pertaining to lighting and glare to ensure appropriate placement and design of all proposed facilities pursuant to Chapter 18.16 (Development Review). As such, adherence to these measures would be mandatory and enforceable through the review and action on the project plans.

Since all development in the City is required to comply with the lighting requirements contained in the City's Municipal Code, impacts associated with light or glare would be **less than significant**, and no mitigation would be required.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
II. Agriculture and Forest Resources				
Would the project:				
a) Convert Prime Farmland, Unique Farmland, 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?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
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))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Discussion

a) No Impact. The project site is developed with institutional uses, and the surrounding areas are developed with residential, commercial, light industrial, and institutional uses. Review of the Farmland Mapping and Monitoring Program (FMMP) maps prepared by the California Department of Conservation confirmed neither the project site nor adjacent land has been mapped as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance pursuant

to the FMMP.[3] **No impacts** related to the conversion of Prime Farmland, Unique Farmland, and/or Farmland of Statewide Importance would occur with development of the project. No mitigation is required.

b–c) No Impact. The project site is zoned Institutional (I) and is not enrolled in a Williamson Act contract or zoned for agricultural and/or timber production. The proposed project would not conflict with any zoning designations designed to promote agriculture or timber production. **No impacts** related to agricultural zoning or Williamson Act contracts would occur. No mitigation is required.

d) No Impact. Neither the project site nor surrounding areas comprise forest land. The project is proposed on an existing high school campus and therefore would not result in the loss of forest land or convert forest land to non-forest use. **No impact** would occur and no mitigation is required.

e) No Impact. A portion of project site was used for agricultural purposes as an orchard during the first half of the 20th century.[4] However, since at least 1964, the project site has been used as a school campus and no agricultural activities have occurred since that time. Therefore, development of the project would have **no impact** related to the conversion of farmland to non-agricultural use. No mitigation is required.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
III. Air Quality				
Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐

[3] California Important Farmland Finder, Department of Conservation, 2017. http://www.conservation.ca.gov/dlrp/fmmp/Pages/LosAngeles.aspx (Accessed January 29, 2018).

[4] *Historic Aerials*. Nationwide Environmental Title Research, LLC. 2018. https://www.historicaerials.com/viewer (Accessed June 14, 2018).

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
III. Air Quality				
Would the project:				
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

Discussion

a) Less than Significant Impact. The project site is located in the South Coast Air Basin (Basin), which is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The Basin includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. The SCAQMD and the Southern California Association of Governments (SCAG) are responsible for formulating and implementing the Air Quality Management Plan (AQMP), which has a 20-year horizon for the Basin. The SCAQMD and SCAG must update the AQMP every three years.

The current regional air quality plan is the Final 2016 AQMP adopted by the SCAQMD on March 10, 2017.[5] The Final 2016 AQMP proposes policies and measures currently contemplated by responsible agencies to achieve federal standards for healthful air quality in the Basin and those portions of the Salton Sea Air Basin that are under SCAQMD jurisdiction. The 2016 AQMP also addresses several federal planning requirements and incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools. The 2016 AQMP builds upon the approaches taken in the 2012 AQMP for the Basin for the attainment of the federal ozone air quality standard.[6] The Basin is currently a federal and State nonattainment area for particulate matter less than 10 microns in size (PM_{10}), particulate matter less than 2.5 microns in size ($PM_{2.5}$), and ozone (O_3).

The 2016 AQMP proposes attainment demonstration of the federal $PM_{2.5}$ standards through a more focused control of sulfur oxides (SOx), directly-emitted $PM_{2.5}$, nitrogen oxides (NOx), and volatile organic compounds (VOC). Consistency with the AQMP for the Basin means that a project would be consistent with the goals, objectives, and assumptions in the respective plan to achieve the federal and State air quality standards. For a project to be consistent with the AQMP, criteria pollutants emitted from the project must not exceed the SCAQMD daily threshold or cause a significant impact on air quality, or the project must already have been included in the AQMP projections. However, a project determined to generate criteria pollutant emissions in excess of SCAQMD thresholds may still be deemed consistent with the AQMP if feasible mitigation measures are implemented and shown to reduce the impact level from significant to less than significant.

[5] *Final 2016 Air Quality Management Plan*. South Coast Air Quality Management District, March 2016.
[6] *Final 2012 Air Quality Management Plan,* South Coast Air Quality Management District, February 2013.

Pursuant to the methodology provided in Chapter 12 of the 1993 SCAQMD *CEQA Air Quality Handbook*, consistency for project development proposals with the Basin's 2016 AQMP is affirmed when a project (1) does not increase the frequency or severity of an air quality standards violation or cause a new violation; and (2) is consistent with the growth assumptions in the AQMP. Consistency review is presented below:

1. The project would result in short-term construction and long-term pollutant emissions that are less than the CEQA significance emissions thresholds established by the SCAQMD, as demonstrated in response to Checklist Question IIIb; therefore, the project would not result in an increase in the frequency or severity of any air quality standards violation and would not cause a new air quality standard violation.
2. The *CEQA Air Quality Handbook* indicates that consistency with AQMP growth assumptions must be analyzed for new or amended General Plan elements, Specific Plans, and significant projects. Significant projects include airports, electrical generating facilities, petroleum and gas refineries, designation of oil drilling districts, water ports, solid waste disposal sites, and offshore drilling facilities; therefore, the proposed project is not defined as significant.

   The AQMP uses the assumptions and projections of local planning agencies to determine control strategies for regional compliance status. Since the AQMP is based on the local General Plan, projects that are deemed consistent with the General Plan are found to be consistent with the AQMP. The project site is an active high school campus with a Community Facility land use designation in the City's General Plan. All future development projects prepared pursuant to the Damien High School Master Plan Update are proposed within the existing 25.8-acre Damien High School Campus, which is developed with school uses, and the project does not propose a change in the land use designation of the General Plan. The school's average annual population is 940 students and 75 faculty/staff. At full buildout, the Master Plan Update proposes demolition of the existing 5,972-square foot (sf) cafeteria facility and construction of four new buildings totaling approximately 73,100 sf of new building space (net increase of 67,128 sf). It should be noted, however, that although the project would result in an increase in land use density on the project site through new building construction, the project would provide facility enhancements to accommodate the existing student and faculty population. Damien High School is not projecting an increase in student enrollment or faculty/staff throughout the life of the Master Plan. Therefore, no increase in land use or development intensity is expected to occur, and the project site's Community Facility land use designation in the City's General Plan is incorporated in the AQMP air pollutant emission estimates.

As detailed in response to Checklist Question III(b), the proposed project would not exceed any SCAQMD daily threshold or cause a significant impact on air quality. Additionally, implementation of the proposed Master Plan Update would not require the rezoning of the project site or an amendment to the City's General Plan. Since the proposed project would not exceed any SCAQMD daily threshold or cause a significant impact on air quality, and it is consistent with the existing General Plan land use designation, the proposed project is consistent with the 2016 AQMP. Impacts would be **less than significant**, and no mitigation is required.

b) Less than Significant Impact. The SCAQMD's *CEQA Air Quality Handbook* establishes suggested significance thresholds based on the volume of pollution emitted. According to the Handbook,

any project in the Basin with daily emissions that exceed any of the following thresholds generally are considered as having individually and cumulatively significant air quality impacts:

- 55 lbs. per day of VOC (volatile organic compounds) (75 lbs./day during construction);
- 55 lbs. per day of NOx (oxides of nitrogen) (100 lbs./day during construction);
- 550 lbs. per day of CO (carbon monoxide) (550 lbs./day during construction);
- 150 lbs. per day of PM_{10} (particulate matter with a diameter of 10 microns or smaller) (150 lbs./day during construction)
- 55 lbs. per day of $PM_{2.5}$ (particulate matter with a diameter of 2.5 microns or smaller) (55 lbs./day during construction); and
- 150 lbs. per day of SOx (oxides of sulfur) (150 lbs./day during construction).

The following analysis is based on the Air Quality and Greenhouse Gas Analysis prepared for the project (Appendix B).

Construction Emissions. In accordance with the proposed phasing of the project, a project-level analysis of projected construction activities was prepared. Impacts to air quality would occur during demolition, site preparation, and construction. Major sources of emissions include exhaust emissions from construction vehicles and equipment and fugitive dust generated by demolition activities, construction vehicles and equipment traveling over earthen surfaces, and soil disturbances from grading and filling. Demolition, grading, and construction activities would cause combustion emissions from utility engines, heavy-duty construction vehicles, haul trucks, and vehicles transporting the construction crew. Fugitive dust emissions are generally associated with demolition, land clearing, exposure of soils, and cut and fill operations.

Emissions during demolition, grading, and construction activities would vary as construction activity levels change. For the purposes of analyzing construction emissions, the project will be constructed in three phases. The duration of construction activity and associated construction equipment was based on the California Emissions Estimator Model (CalEEMod) version 2016.3.2 defaults for phasing. Phase 1 is expected to commence in 2019 and require approximately 9 months to complete. Phase 2 is anticipated to kickoff shortly after the completion of Phase 1 construction, be completed in several sub phases over a minimum of five years (by approximately spring/summer 2025), and would be dependent on funding sources. Phase 3 is not anticipated to commence until all of the sub phases identified in Phase 2 are complete. Due to the uncertainty of Phase 3 commencement, the buildout horizon of the Master Plan Update is anticipated to occur by 2029. However, as a worst-case scenario, the air quality analysis anticipates construction of Phase 3 will occur between spring/summer of 2025 and spring/summer of 2026, which assumes a more intensive construction activity schedule (i.e., more equipment operating at the same time or a continuous level of construction activity with no lapse in construction between phases) than would occur if Phase 3 were to be constructed by 2029. Table C identifies the maximum daily emissions associated with construction activities and indicates no criteria pollutant emission thresholds would be exceeded from construction of the proposed project.

Table C: Short-Term Regional Construction Emissions

Construction Phase		Total Regional Pollutant Emissions, lbs/day							
		VOC	NO_X	CO	SO_X	Fugitive PM_{10}	Exhaust PM_{10}	Fugitive $PM_{2.5}$	Exhaust $PM_{2.5}$
Phase 1	Demolition	4	36	23	<1	<1	2	<1	2
	Building Construction	6	46	48	<1	7	1	2	1
	Architectural Coating	10	2	6	<1	1	<1	<1	<1
Phase 2	Demolition	3	34	23	<1	<1	2	<1	2
	Building Construction	5	42	45	<1	7	1	2	1
	Architectural Coating	3	1	5	<1	1	<1	<1	<1
	Paving	2	9	15	<1	<1	<1	<1	<1
Phase 3	Demolition	2	20	20	<1	<1	<1	<1	<1
	Building Construction	4	27	35	<1	7	<1	2	<1
	Architectural Coating	2	20	20	<1	<1	<1	<1	<1
Peak Daily		**16**	**48**	**55**	**<1**	**10**		**4**	
SCAQMD Thresholds		**75**	**100**	**550**	**150**	**150**		**55**	
Emissions Exceed Threshold?		**No**	**No**	**No**	**No**	**No**		**No**	

Source: Table K. *Air Quality and Greenhouse Gas Analysis - Damien High School Master Plan Update.* LSA. January 2019. (Appendix B).
Note: These estimates reflect control of fugitive dust required by SCAQMD Rule 403. The values shown are the maximum summer or winter daily emissions results from CalEEMod. The peak daily emissions assume that architectural coatings would be applied during building construction.

CO = carbon monoxide
lbs/day = pounds per day
NOx = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
SCAQMD = South Coast Air Quality Management District
SOx = sulfur oxides
VOC = volatile organic compounds

The construction calculations prepared for the project assume that dust control measures (e.g., watering a minimum of twice daily) would be employed to reduce emissions of fugitive dust during site grading. Furthermore, all construction would need to comply with SCAQMD Rule 403 regarding the emission of fugitive dust. Among the requirements under this rule, fugitive dust must be controlled so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. Adherence to Rule 403, including the implementation of Best Available Control Measures (BACMs), is a standard requirement for any construction activity occurring within the SCAQMD. These measures may include, but are not limited to:

- Water active sites at least three times daily (locations where grading is to occur will be thoroughly watered prior to earthmoving).
- Cover all trucks hauling dirt, sand, soil, or other loose materials, or maintain at least 2 feet (0.6 meter) of freeboard (vertical space between the top of the load and the top of the trailer) in accordance with the requirements of California Vehicle Code Section 23114.
- Reduce traffic speeds on all unpaved roads to 15 miles per hour or less.

In addition, the project would be subject to California Department of Resources Recycling and Recovery (CalRecycle) Sustainable (Green) Building Program regulations whereby at least 60 percent of all demolition and construction materials (including, but not limited to, soil, mulch, vegetation, concrete, lumber, metal, and cardboard) shall be recycled/reused. Through implementation of applicable provisions of SCAQMD Rule 403 to control fugitive dust and the

CalRecycle program for the recycling/reuse of construction materials, construction-related activity would not produce regional air emissions in excess of established SCAQMD thresholds.

Localized Significance Thresholds (LSTs) are developed based upon the size or total area of the emissions source from the construction equipment activities, the ambient air quality levels in each source receptor area (SRA) in which the emission source is located, and the distance to the sensitive receptor. LSTs represent the maximum emissions from a project that would not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard, and are developed based on the ambient concentrations of that pollutant for each SRA. For the proposed project, the appropriate SRA for the LST is SRA 10 (Pomona Walnut Valley).

The SCAQMD LST methodology presents mass emission rates for each SRA, project sizes of 1, 2, and 5 acres, and nearest receptor distances of 25, 50, 100, 200, and 500 meters. For project sizes between the values given, or with receptors at distances between the given receptors, the methodology uses linear interpolation to construct new data points within the range of the values given or distances measured in order to determine the thresholds. If receptors are within 25 meters (82 feet) of the site, SCAQMD LST methodology dictates that the threshold for the 25-meter distance should be used.

Localized significance is determined by comparing the on-site-only portion of the construction emissions with emissions thresholds derived by the SCAQMD to ensure pollutant concentrations at nearby sensitive receptors would be below ambient air quality standards established by the SCAQMD. Although the project site is 25.8 acres, there would not be any large-scale grading or other mass ground-disturbing activities, as the project site is an active high school campus and construction is proposed in phases. The construction of the new parking lot south of the Gymnasium under Phase 2 would result in the largest single-day ground disturbance. This area of proposed disturbance would be no more than 2 acres on any one day; thus, the 2-acre LSTs have been used for construction emissions. Furthermore, sensitive receptors include residences, schools, hospitals, and similar uses that are sensitive to adverse air quality. The nearest sensitive receptors are the school itself and residences adjacent to the project site boundary. However, as stated above, SCAQMD LST methodology dictates that the threshold for the 25-meter distance should be used in cases where sensitive receptors are within 25 meters (82 feet) of construction limits.

Table D lists the emissions thresholds for SRA 10 that would apply during project construction and indicates that none of the construction emission rates would exceed the LSTs for the existing sensitive receptors both on-site and adjacent to the project site.

Table D: Construction Localized Impacts Analysis

Emissions Sources	NOx (lbs/day)	CO (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)
Maximum On-site Emissions	36	22	2	2
LST Thresholds – 2-acre site	149	885	6	4
Significant Emissions?	**No**	**No**	**No**	**No**

Source: Table L. *Air Quality and Greenhouse Gas Analysis - Damien High School Master Plan Update.* LSA. January 2019. (Appendix B).

Note: Source Receptor Area – Pomona Walnut Valley, 2 acres, receptors at 25 meters.

CO = carbon monoxide
LST = local significance threshold
NOx = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
lbs/day = pounds per day

As detailed in Tables C and D, through compliance with SCAQMD Rule 403 for the control of fugitive dust and the CalRecycle program for the recycling/reuse of construction materials,

emissions generated through construction of the proposed project would not exceed SCAQMD thresholds for regional construction emissions or LSTs for the existing sensitive receptors both on-site and adjacent to the project site.

Operational Emissions. Long-term (operational) air pollutant emissions are those associated with area sources, stationary sources, and mobile sources involving any project-related changes. Area sources include architectural coatings, consumer products, hearths, and landscaping. Energy sources include natural gas consumption for heating and cooking. Mobile-source emissions usually result from vehicle trips associated with a project. The proposed project would address campus development needs without increasing the student or faculty/staff population from the current approximate student population of 940 and faculty/staff population of 75. Long-term emissions were calculated for VOC, NOx, CO, SOx, PM_{10}, and $PM_{2.5}$ expected to be generated through operation of the proposed project upon implementation of Phase 3 (i.e., full buildout of the Master Plan Update).

The CalEEMod model was used to characterize the existing 2018 school operational emissions to document the baseline condition. CalEEMod was then used to characterize the Damien High School operational emissions with the total Master Plan Update implemented in 2026,[7] including Phases 1, 2, and 3. Based on default CalEEMod operational parameters for a high school, Damien High School under full buildout (i.e., through completion of Phase 3) of the Master Plan Update would generate the emissions shown in Table E.

Table E: Opening Year Regional Operational Emissions

Source	Pollutant Emissions, lbs/day					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Operational Emissions from the Existing Damien High School						
Area	3	<1	<1	<1	<1	<1
Energy	<1	<1	<1	<1	<1	<1
Mobile	5	22	68	<1	15	4
Total Existing Emissions	**8**	**22**	**69**	**<1**	**15**	**4**
Operational Emissions from Damien High School with Master Plan Update						
Area	5	<1	<1	<1	<1	<1
Energy	<1	<1	<1	<1	<1	<1
Mobile	3	17	52	<1	15	4
Total Project Emissions	**8**	**18**	**53**	**<1**	**15**	**4**
Net New Operational Emissions	**0**	**-4**	**-16**	**<1**	**0**	**0**
SCAQMD Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Emissions Exceed Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: Table M. *Air Quality and Greenhouse Gas Analysis - Damien High School Master Plan Update.* LSA. January 2019. (Appendix B).

CO = carbon monoxide
lbs/day = pounds per day
NOx = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SCAQMD = South Coast Air Quality Management District
SOx = sulfur oxides
VOC = volatile organic compounds

[7] Due to the uncertainty of Phase 3 commencement, the buildout horizon of the Master Plan Update is anticipated to occur by 2029. However, the air quality analysis assumes operation of Phase 3 will begin approximately spring/summer of 2026. This assumption is a worst-case scenario since reductions in criteria pollutant emissions shown are primarily due to the vehicle improvements between the 2018 and 2026 operational years, which do not include further improvements to vehicle efficiency and pollution reductions reasonably expected to occur between 2026 and 2029.

Although the project would result in an increase in land use density on the project site through new building construction, Damien High School is not projecting an increase in student enrollment or faculty/staff throughout the life of the Master Plan. Therefore, no increase in land use or development intensity is expected to occur. Accordingly, the operational emissions generated through buildout of the Master Plan Update would essentially stay the same as existing. The reductions shown in Table E are primarily due to vehicle efficiency improvements between the 2018 and 2026 operational years. Furthermore, the project would be subject to (CalRecycle) Sustainable (Green) Building Program regulations whereby "green building materials" (e.g., those materials that are rapidly renewable or resource-efficient, and recycled and manufactured in an environmentally friendly way) shall be used for at least 10-percent of the project. As detailed in Table E, calculated project-related emissions would not exceed the established SCAQMD daily emission thresholds for any criteria pollutants. No significant long-term regional air quality impact would occur.

By design, the localized impacts analysis only includes on-site sources; however, the CalEEMod outputs do not separate on-site and off-site emissions for mobile sources. For a worst-case scenario assessment, the emissions detailed in Table F assume all area source emissions would occur on site, all of the energy source emissions would occur-off site at the utility power stations, and a portion of the mobile sources would occur on-site. The average trip lengths assumed by CalEEMod are 16.6 miles from home to work, 8.4 miles from home to a typical shopping center, and 6.9 miles for other types of trips. Although the average on-site distance driven is estimated to be no more than 1,000 feet, which is approximately 2-percent of the total miles traveled, a 5-percent assumption was used for the LST analysis to yield a conservative, worst-case scenario, estimate of emissions. Table F details the calculated emissions for the proposed operational activities compared with the appropriate LSTs.

Table F: Long-Term Operational Localized Impacts Analysis

Emissions Sources	Pollutant Emissions (lbs/day)			
	NOx	**CO**	**PM_{10}**	**$PM_{2.5}$**
On-Site Emissions	<1	3	<1	<1
LSTs	**149**	**885**	**2**	**1**
Emissions Exceed Threshold?	**No**	**No**	**No**	**No**

Source: Table N. *Air Quality and Greenhouse Gas Analysis - Damien High School Master Plan Update.* LSA. January 2019. (Appendix B).

Note: Source Receptor Area: Pomona/Walnut Valley, 2 acres, 25 meter distance, on-site traffic 5 percent of total.

CO = carbon monoxide
lbs/day = pounds per day
LST = localized significance threshold
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size

Table F indicates the project's operational emission rates would not exceed the LSTs for receptors at 25 meters (82 feet). Therefore, the proposed operational activity would not result in a locally significant air quality impact.

Areas with high vehicle density (e.g., congested intersections and parking garages) have the potential to create high concentrations of CO known as CO "hotspots." A project's localized air quality impact is considered significant if CO emissions create a hotspot where either the California 1-hour standard of 20 ppm or the federal and State 8-hour standard of 9.0 ppm is exceeded. This typically occurs at severely congested intersections (level of service [LOS] E or worse). Ambient CO levels monitored at the Pomona Monitoring Station showed a highest recorded 1-hour concentration of 2.0 ppm (the State standard is 20 ppm) and a highest 8-hour concentration of

1.6 ppm (the State standard is 9 ppm) during the past 3 years.[8] The highest CO concentrations would normally occur during peak traffic hours; hence, CO impacts calculated under peak traffic conditions represent a worst-case analysis. Based on the project-specific Traffic Impact Analysis (refer to Section XVI), none of the study area intersections currently operates at LOS E or worse, and the project would not significantly change the LOS at any study area intersection. Therefore, implementation of the Master Plan Update is not anticipated to create a CO hotspot. Potential impacts from CO emissions are considered less than significant.

The proposed project is required to comply with SCAQMD Rules 402 and 403 and applicable California Code of Regulations, which include implementation of standard control measures for fugitive dust and construction equipment emissions. Pursuant to Title 13, Section 2449(d)(D) of the California Code of Regulations, operators of off-road vehicles (i.e., self-propelled diesel-fueled vehicles 25 horsepower and up that were not designed to be driven on road) are required to limit vehicle idling to five minutes or less. Furthermore, the project would be subject to California Department of Resources Recycling and Recovery (CalRecycle) Sustainable (Green) Building Program regulations whereby at least 60-percent of all demolition and construction materials (including, but not limited to, soil, mulch, vegetation, concrete, lumber, metal, and cardboard) shall be recycled/reused, and "green building materials" (e.g., those materials that are rapidly renewable or resource-efficient, and recycled and manufactured in an environmentally friendly way) shall be used for at least 10-percent of the project. Tables C through F demonstrate that, with compliance with applicable regulatory policy designed to reduce emissions, the proposed project would not exceed any SCAQMD threshold during construction or operation. Therefore, the project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation. Impacts would be **less than significant**, and no mitigation is required.

c) Less than Significant Impact. The cumulative impacts analysis is based on projections in the regional AQMP. As detailed in response to Checklist Question IIIa, the proposed project is consistent with the overall growth projections of the General Plan and would not conflict with or obstruct implementation of the regional AQMP.

No single project is sufficient in size, by itself, to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions would contribute to existing cumulatively significant impacts to air quality. The SCAQMD developed the operational thresholds of significance based on the level above which a project's individual emissions would result in a cumulatively considerable contribution to the Basin's existing air quality conditions. Therefore, a project that exceeds the SCAQMD operational thresholds would also have a cumulatively considerable contribution to a significant cumulative impact.

Due to the nonattainment status of the Basin, the primary air pollutants of concern would be NOx and VOCs, which are ozone precursors, and PM_{10} and $PM_{2.5}$. As detailed in response to Checklist Question III(b), long-term emissions were calculated for NOx, VOC, CO, SOx, PM_{10}, and $PM_{2.5}$ expected to be generated through operation of the proposed project. Tables E and F indicate project-related emissions would not exceed the established SCAQMD daily emission thresholds for any criteria pollutants.

[8] *Air Quality and Greenhouse Gas Analysis - Damien High School Master Plan Update.* Table F. LSA. January 2019 (Appendix B).

Without any exceedance in air quality emissions thresholds, the proposed project would not result in a cumulatively considerable contribution to significant air quality impacts. Long-term cumulative air quality impacts would be **less than significant.** No mitigation is required.

d) Less than Significant Impact. The SCAQMD recommends the evaluation of localized CO, NOx, PM_{10}, and $PM_{2.5}$ construction- and operation-related impacts to sensitive receptors[9] in the immediate vicinity of the project site. The project site is developed as an occupied private high school campus and is surrounded by residential, school, and light industrial uses. The nearest sensitive receptors are the school itself and residences adjacent to the project site boundary. As stated above, SCAQMD LST methodology dictates that the threshold for the 25-meter distance should be used in cases where sensitive receptors are within 25 meters (82 feet) of construction limits.

Tables D and F presented in response to Checklist Question III(b) identify the on-site construction and operational emissions of CO, NOx, PM_{10}, and $PM_{2.5}$, respectively, and demonstrate that all concentrations of pollutants would be below the SCAQMD thresholds of significance for construction and operation of the project. Therefore, both short-term (i.e., construction) and long-term (i.e., operational) LST air quality impacts would be **less than significant**, and no mitigation is required.

e) Less than Significant Impact. Project construction will generate limited odors over the short term, mainly from fumes emanating from gasoline and diesel powered construction equipment and temporary asphalt laying and paving activities. These odors would be temporary and are expected to be isolated to the immediate vicinity of the construction site.

SCAQMD Rule 402 regarding nuisances states: "A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property." Pursuant to SCAQMD Rule 403, fugitive dust must be controlled so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. Additionally, Title 13, Section 2449(d)(D) of the California Code of Regulations requires operators of off-road vehicles (i.e., self-propelled diesel-fueled vehicles 25 horsepower and up that were not designed to be driven on road) to limit vehicle idling to five minutes or less.

SCAQMD Rules 402 and 403, and Title 13, Section 2449(d)(D) of the California Code of Regulations require the project applicant to implement standard control measures to limit fugitive dust and construction equipment emissions. Therefore, operation of fueled equipment would not expose a substantial number of people to objectionable odors on a permanent basis.

The painting of buildings or the installation of asphalt surfaces may also create odors. SCAQMD Rule 1113 outlines standards for paint applications, while Rule 1108 identifies standards regarding the application of asphalt. Adherence to the standards identified in these SCAQMD rules would reduce temporary odor impacts to a **less than significant** level. No mitigation is required.

[9] According to the SCAQMD's *Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning* (May 6, 2005), sensitive receptors (individuals) are those segments of a population such as children, athletes, elderly, and sick that are more susceptible to the effects of air pollution than the population at large. Land uses where sensitive receptors are most likely to spend time include schools and schoolyards, parks and playgrounds, day care centers, nursing homes, hospitals, and residential communities (Pp. G-6).

Land uses generally associated with long-term objectionable odors include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting operations, refineries, landfills, dairies, and fiberglass molding facilities. The proposed project does not include uses that would generate long-term objectionable odors. Because the project would not involve such substantial short-term or long-term sources of odors, impacts are considered **less than significant**. No mitigation is required.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
IV. Biological Resources				
Would the project:				
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 the U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
IV. Biological Resources				
Would the project:				
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Discussion

a) Potentially Significant Unless Mitigation Implemented. The project site is fully developed with the Damien High School including buildings, tennis courts, pool, gymnasium, football stadium, baseball fields and associated parking lots and landscaping. The project site is surrounded by residential uses to the north and west across Bonita Avenue and Damien Avenue, respectively. The project site is bordered to the east by the campus of the Joan Macy School/David and Margaret Youth and Family Services Organization, multifamily and single-family residential uses, and commercial uses. South of the project site are light industrial uses across Palomares Avenue (see Figure 2 for surrounding land uses and Figure 4 for site photographs).

According to the California Natural Diversity Data Base (CNDDB) maintained by the California Department of Fish and Wildlife (CDFW) and the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants, there are several records of species of plants and animals or sensitive plant associations that are found within the five United States Geological Survey (USGS) 7.5-minute quadrangles (i.e., *San Dimas, Glendora, Ontario, Yorba Linda,* and *Baldwin Park*) that include or are adjacent to the project site (see Appendix C). According to the United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) system, no critical habitats occur on the project site. However, there is potential for two endangered species to occur on the project site: Coastal California gnatcatcher (*Polioptila californica californica*) and least Bell's vireo (*Vireo bellii pusillus*) (Appendix C).

Due to the project site being fully developed with a high school with no natural open space or suitable habitat on site or in the immediate surrounding area to support the California gnatcatcher or the least Bell's vireo, only raptors and species of small songbirds have any potential to occur on the project site or be present in the surrounding area. There is no potential for any sensitive plants to be present on site. However even with the urbanization of the region and the project site itself, there could be a number of the bird species listed in the CNDDB and the IPaC system for this area that are protected under the Migratory Bird Treaty Act (MBTA), and mitigation is required to ensure there would be no significant impacts to these species. Mitigation for raptors and other migratory nesting birds is provided through implementation of **Mitigation Measure BIO-1**:

Mitigation Measure

MM BIO-1 Vegetation removal shall be conducted outside of the nesting season (February 1, or January 1 for raptors, through September 15). If avoidance of the nesting season is not feasible, then a qualified biologist hired by the project applicant and approved by the City of La Verne's Community Development Director or designee shall conduct a nesting bird survey within three days prior to any disturbance of the site, including demolition activities, tree removal, and/or grading.

If a special-status species is located during the survey, consultation with the local California Department of Fish and Wildlife (CDFW) representative shall occur to determine what avoidance actions are required. The qualified biologist shall instruct construction personnel on the sensitivity of the area. If an active avian nest is identified, the biologist shall be present to delineate the boundaries of the buffer area and monitor the active nest to ensure that nesting behavior is not adversely affected by construction activities. Construction activities must occur outside of a 100-foot buffer around the active nest. For listed and raptor species, this buffer may be expanded to up to 500 feet from the active nest at the discretion of the qualified biologist in consultation with the City Community Development Director or designee and CDFW.

The biologist shall have the authority to temporarily halt construction if it occurs within an established avian buffer or if new nesting activity occurs and a new buffer is required. Encroachment into buffers around active nests shall be conducted only at the discretion of the biologist. Once the young have fledged and left the nest, or the nest otherwise becomes inactive under natural conditions, construction activities within the buffer area may occur or resume. Upon completion of construction monitoring, the biologist shall prepare a report of findings documenting the results of the recommended protective measures described above to document compliance with applicable State and federal laws pertaining to the protection of nesting birds. This measure shall be implemented to the satisfaction of the City Community Development Director or designee.

Implementation of **Mitigation Measure BIO-1** would reduce impacts to candidate, sensitive, or special-status species with the potential to occur on-site to **less than significant with mitigation incorporated**.

b) No Impact. The project site is developed with an existing high school campus and dominated by habitats that have been altered by site development and ornamental landscaping. The project site does not contain any riparian habitat, sensitive natural community, or land under the jurisdiction of State or federal resource agencies (i.e., USFWS, U.S. Army Corps of Engineers [USACE], or the CDFW). Therefore, there would be **no impact** to riparian or other sensitive habitat. No mitigation is required.

c) No Impact. All wetland areas, wetland buffer areas, and non-wetland waters of the U.S. are considered sensitive. Jurisdictional waters of the U.S. and State of California, including wetlands, are regulated by the USACE and Regional Water Quality Control Board (RWQCB) pursuant to Sections 404 and 401 of the Federal Clean Water Act, respectively. Jurisdictional waters that also qualify as streams, lakes, or riparian habitat are regulated by the CDFW pursuant to Section

1602 of the California Fish and Game Code. Isolated waters, including wetlands that do not have a "significant nexus" to a traditional navigable water are typically not subject to USACE jurisdiction; however, they are still regulated by the RWQCB (under the Porter-Cologne Water Quality Control Act) and also regulated by the CDFW for those features that qualify as streams, lakes or riparian habitat.

The project site does not contain any natural drainages, riparian resources, or wetlands that would be subject to the jurisdiction of these Federal or State agencies. Therefore, there would be **no impact** to any wetland or related areas. No mitigation is required.

d) Potentially Significant Unless Mitigation Incorporated. As stated previously, the project site is developed with an existing high school campus and dominated by habitats that have been altered by site development and ornamental landscaping. Implementation of the Master Plan Update would result in the removal and replacement of several ornamental trees. These trees provide little habitat value but could support nesting activities and provide periodic roosting or perching opportunities for birds including raptors. Protection for raptors and other migratory nesting birds is provided through implementation of **Mitigation Measure BIO-1.**

The project site is not located within a known migration corridor or native wildlife nursery per the City's General Plan. Due to the developed nature of the project site and its surroundings, connectivity of natural habitats does not occur on site or in the immediate vicinity. Little or no local wildlife movement is expected to occur through the project site except for nesting or foraging birds and small reptile and small mammal (rodent) species. Through implementation of **Mitigation Measure BIO-1,** impacts to movement of any native resident or migratory fish or wildlife species or established native resident or migratory wildlife corridors or nursery sites would be reduced to **less than significant with mitigation incorporated**.

e) Less than Significant Impact. As described above, the project site does not contain wildlife corridors, riparian habitat, or sensitive natural communities and therefore would not conflict with policies and/or implementation measures identified in the City's General Plan Resource Management Element for the purposes of protecting biological resources including wildlife corridors and native plant communities and habitats. However, the project site contains one coast live oak tree considered a "Significant Tree" pursuant to Section 18.78.020(M) of the City Municipal Code.

The City has adopted Ordinance No. 999 Preservation, Protection, and Removal of Trees (Municipal Code Chapter 18.78), which establishes regulations regarding tree preservation, protection and the removal of trees. The purpose of this ordinance is to "protect certain trees in order to preserve cultural heritage, maintain and enhance the scenic beauty of the city, improve air quality, abate soil and slope erosion, preserve and enhance property values, and thereby promote public health, safety and welfare." The tree ordinance only applies to "Heritage" and "Significant" trees. Pursuant to Section 18.78.020(G) of the City's Municipal Code, "Heritage Tree" designation for any tree within the City requires City Council resolution, which has not occurred for any tree on the project site, so no "Heritage Trees" occur on site. "Significant Tree" is further defined in Section 18.78.020(M) of the City's Municipal Code as any tree located on a parcel of private or public property with a caliper of eight inches or more and is of the following species: deodar cedar (*Cedrus deodara*), camphor tree (*Cinnamomum camphor*), all oak species (*Quercus* species), sycamore trees (*Plantanus racemosa*), and southern California black walnut (*Juglans californica* var. *californica*).

An Addendum Tree Report was prepared by Kalban Architects as part of the proposed Master Plan Update in December 2018. A total of 23 trees have the potential to be impacted through implementation of the proposed Master Plan Update. The full text of the Addendum Tree Report is included in Appendix A. The results of the Addendum Tree Report indicate one coast live oak tree with a trunk diameter of seven inches measured four feet from the ground surface is located on the project site and is identified in the Master Plan as a protected tree. Therefore, the coast live oak tree is considered a "Significant Tree" pursuant to Section 18.78.020(M) of the City Municipal Code. Specifically, the coast live oak tree is located approximately 60 feet west of Building 600 within the parking lot proposed for restriping under Phase 1 of the Master Plan Update. The Master Plan Update does not include the removal or relocation of this tree, and it will be retained in place throughout implementation of the Master Plan Update.

Prior to the issuance of grading permits, the project proponent would be required to prepare and submit detailed grading plans as each specific development is proposed. These plans would be prepared in conformance with applicable standards of the City. Because the proposed Master Plan Update would be implemented in phases over a period of several years, construction plans would be subject to review by the City to ensure protection of Significant Trees on-site pursuant to Section 18.60.030 of the City Municipal Code. If the Community Development Director or designee determines a project proposed under the Master Plan Update has the potential to impact protected trees on site, the project proponent may be required to submit a tree report prepared by a licensed architect or a certified arborist approved by the City which would include, as a minimum, data regarding genus and/or species, age, size (including canopy, caliper, trunk and height), relative health, and any preservation proposals for all protected trees on the site pursuant to Section 18.78.130 of the City Municipal Code. However, even if the project is not conditioned to include a tree report, the on-site coast live oak would still be subject to protective measures detailed in Section 18.78.160 of the City Municipal Code pursuant to its definition as a "Significant Tree" under Section 18.78.020(M) (**Standard Condition BIO-1**).

Standard Condition: No mitigation is required; however, the following Standard Condition is a regulatory requirement implemented as a routine action conditioned by the City that would ensure impacts related to protected trees remain less than significant.

Standard Condition BIO-1 Unless otherwise superseded by specific preservation and protective measures outlined in a tree report prepared pursuant to Section 18.78.130 of the City Municipal Code, as determined by the city landscape architectural consultant, parks director, or Community Development Director or designee, the following actions shall be implemented in order to ensure the retention and protection of the on-site coast live oak tree prior to 1) demolition of the Student Lunch Area, 2) commencement of any improvements to the northwest parking lot in the vicinity of the 600 Building, and 3) construction of the proposed Student Center:

- No grading, construction, or construction-related activities shall occur within the safety zone (i.e., the area within the dripline of a tree and extending therefrom either to a point of at least five feet outside the dripline or to a point 15 feet from the trunk, whichever distance is greater) of a heritage tree or a significant

tree as defined by Chapter 18.78 (Preservation, Protection, and Removal of Trees) of the City Municipal Code, including, but not limited to, storage of materials, grade changes, or attachment of wires to or around tree trunks, stems or limbs.

- No structure shall be located within the safety zone or within a six-foot radius of the trunk perimeter, whichever is greater, of any heritage tree or significant tree. A tree with a caliper of 30 inches or more shall require additional space as determined by the city landscape architectural consultant or parks director.
- Heritage trees and significant trees shall be shielded from damage during construction by chain link and steel stake fence enclosing the entire safety zone area. All exposed roots shall be inside the fence or barrier, which shall have a minimum height of four feet measured from grade. In all cases where a fence or barrier is to be used around a protected tree, the fence or barrier shall be installed prior to commencement of any development on the site and shall remain in place throughout the construction period.
- Branches that could be injured by vehicles or that interfere with construction shall be pruned to the satisfaction of the city landscape architectural consultant or designee.

This condition shall be implemented to the satisfaction of the City Community Development Director or designee.

Adherence to applicable provisions of Chapter 18.78 of the City Municipal Code in effect at the time of development application submittal would ensure the proposed project would not conflict with any local policies or ordinances protecting biological resources. A **less than significant impact** would occur, and no mitigation is required.

f) No Impact. The proposed project site is not within any adopted habitat conservation plans, natural community conservation plans, or any other regional planning areas identified by the USFWS, CDFW, or the City.[10,11,12] Therefore, implementation of the proposed Master Plan Update would not conflict with the provisions of any adopted local or regional conservation plans. **No impact** to adopted habitat conservation plans would occur. No mitigation is required.

[10] *Information for Planning and Consultation.* United States Fish and Wildlife Service. March 31, 2018.
[11] *Biographic Information and Observation System (BIOS).* California Department of Fish and Wildlife. https://map.dfg.ca.gov/bios/ (Accessed July 17, 2018).
[12] *Resource Management Element.* City of La Verne General Plan. Adopted December 7, 1998.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
V. Cultural Resources				
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource as defined in §15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

Discussion

a) Potentially Significant Unless Mitigation Incorporated. The following discussion is based on the Cultural Resources Assessment for the Damien High School Master Plan Update prepared by LSA in January 2019 (Appendix D).

The campus was established in 1904 as Bonita Union High School, with the first building completed in 1905 as a three-story Mission Revival style building. In 1911, another building was added and in the early 1920s, the school underwent a major expansion designed by architect John C. Austin. Austin's design established the quadrangle with the primary buildings flanking a central, rectangular open space. In the 1930s, the school received public funding for new construction and seismic strengthening. This effort was undertaken by architect Frederick Kennedy, Jr. and, as part of the Federal Arts Project, the school also received a mural designed by Grace Clements. In 1959, the school was sold to the Catholic Archdiocese of Los Angeles, which established a boy's high school known as Pomona Catholic High School and later renamed Damien High School in 1967. The campus has continued to grow with various buildings being added, removed, or retrofitted; however, the academic quadrangle located at the northwest portion of campus remains intact. The buildings comprising the academic quadrangle are representative of the Spanish Colonial Revival architectural style and collectively have characteristics which are important to the campus.

The Damien High School campus was surveyed in 1998 by architectural historians Janet Tearnen and Lauren Weiss Bricker, during which the Bonita Union High School Historic District was identified within the campus and evaluated as locally significant as a good example of a special element of the City's educational and social history (Works Progress Administration-era school project in La Verne), a focal point of Bonita Avenue that contributes to the visual quality and

character of the area, and for the work of noted southern California architects.[13] The Bonita Union High School Historic District has a period of significance of 1934–1938 and comprises six buildings/structures, five of which are contributors to the district,[14] collectively which compose the academic quadrangle.[15] In addition, the Grace Clements mural was evaluated as individually significant.[16] Therefore, the Bonita Union High School Historic District and the Grace Clements mural are "historical resources" pursuant to *CEQA Guidelines* Section 15064.5(a)(2) and Public Resources Code (PRC) § 5024.1(g).

Because the Bonita Union High School Historic District and the Grace Clements mural are "historical resources" for purposes of CEQA, an impacts assessment using the Secretary of the Interior's Standards for the Treatment of Historic Properties (Rehabilitation) was completed to determine whether the proposed Master Plan Update would result in any substantial adverse changes to the significance of the district and/or mural (refer to Appendix D). Since the Master Plan Update includes only conceptual plans for implementation of the proposed phases, the impacts analysis is fairly general, and precise plans prepared under each phase must be analyzed to address building design aspects as generally identified under the Mater Plan Update. Implementation of the Master Plan Update must be mindful of the Bonita Union High School Historic District and the Grace Clements mural as they contribute to the overall campus layout and design style. Therefore, the following mitigation measures are required.

Mitigation Measures

MM CUL-1 Prior to issuance of demolition, grading, and/or building permits for all development applications prepared pursuant to the Damien High School Master Plan Update, design-level plans shall be reviewed by an architectural historian who meets the Secretary of the Interior's Professional Qualification Standards to ensure compliance with the Secretary of the Interior's Standards for the Treatment of Historic Properties (Rehabilitation) numbers 2 and 9 in accordance with *CEQA Guidelines* Section 15126.4(b)(1). The implementation of this mitigation measure shall be to the satisfaction of the City of La Verne's Community Development Director or designee.

MM CUL-2 Prior to issuance of demolition, grading, and/or building permits for all development applications prepared pursuant to the Damien High School Master Plan Update, the City of La Verne shall verify the following notes are included on all construction plans, pages, and sheets to ensure compliance with the Secretary of the Interior's Standards for the Treatment of Historic Properties (Rehabilitation) numbers 5, 6, and 7 in accordance with CEQA Guidelines Section 15126.4(b)(1):

- Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize the Grace Clements mural and the Bonita Union High School Historic District and its contributing features will be preserved.

[13] *Historic Resources Survey for Damien High School, 2280 Damien Avenue, La Verne, CA.* Page 13. Prepared by Janet Tearnen and Lauren Weiss Bricker. December 28, 1998.

[14] Bonita Union High School Historic District contributing buildings and structures include the 100 Building, 200 Building, 400 Building, Old Girls' Gym (Spartan Hall), and Arcade.

[15] *Historic Resources Survey for Damien High School, 2280 Damien Avenue, La Verne, CA.* Figure 3: Bonita Union High School Historic District. Prepared by Janet Tearnen and Lauren Weiss Bricker. December 28, 1998.

[16] *Ibid.* Page 13.

- Any deteriorated historic features shall be repaired rather than replaced. If the severity of deterioration requires replacement of a distinctive feature, the new feature will match as close as possible the original in design, color, texture, and where possible, materials. Replacement of missing features shall be substantiated by documentary and physical evidence prepared by an architectural historian/historian qualifying under the Secretary of the Interior's Standards for the Treatment of Historic Properties to be provided to the City of La Verne Community Development Director or designee.
- Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.

This measure shall be implemented to the satisfaction of the City Community Development Director or designee.

Implementation of **Mitigation Measures CUL-1** and **CUL-2** would require an additional layer or review for each development project facilitated under the Damien High School Master Plan Update; subject to site- and design-level analyses to address any potential impacts to historical resources in accordance with Public Resources Code 21084.1. Any potential impacts that could result in a substantial adverse change to the significance of historical resources could then be mitigated, as deemed feasible and appropriate, at the project-level in accordance with *CEQA Guidelines* Section 15064.5 and Section 15126.4(b)(1). Therefore, **Mitigation Measures CUL-1** and **CUL-2** would reduce impacts to historical resources from implementation of the Master Plan Update to **less than significant** levels.

b) Potentially Significant Impact Unless Mitigation Incorporated. Analysis of potential impacts to archaeological resources included a records search at the South Central Coastal Information Center (SCCIC), intensive pedestrian survey, and report of findings (Appendix D). The records search was prepared by staff at the SCCIC on June 7, 2018, and the intensive pedestrian survey was performed by LSA staff on June 19, 2018.

The records search indicates three prehistoric habitation sites (19-00075, 19-001098, and 19-0002787), one historic-period ethnic minority site (19-002562 with archaeological features and standing structures), and more than 20 historic period built environment resources, including University of La Verne (19-187724 through 19-187730) and the La Verne Citrus Packing District (19-189206), have been documented within one-mile of the project site. Additionally, the nearest historically known Native American village in proximity to the project site was the Gabrieleño community of *Tooypinga* (also described to Alfred Kroeber as *Toibi*), located approximately 2.5 miles to the south in the general area of Pomona.

The nearest archaeological resource was documented to occur within approximately 700 feet of the project site and is recorded as a large prehistoric habitation site known as "Cienega Mud Springs" (19-00075) at which bedrock milling, hearth features, a ceramic scatter, and habitation debris were documented. Archaeological sites 19-002787 and 19-001089 were documented to occur 1,800 feet and 2,100 feet, respectively, from the project site.

Although the archaeological field survey did not identify any archaeological artifacts or sites within the project site, the records search indicates archaeological resources have been identified in close proximity to the project site. Additionally, the project site has been subject to

historic-era development dating to as early as 1905, a time prior to the advent of indoor plumbing and institutional waste collection, which increases the potential for buried privy (outhouse) pits and substantial intact pre–World War I to post-World War II refuse deposits to be encountered during grading activities. Furthermore, grading for building construction did not reach contemporary over-excavation depths until the 1960s, so there is a greater possibility of encountering intact archaeological residues on properties constructed prior to this time. Therefore, the archaeological sensitivity of the project site is high, and implementation of the Master Plan Update has the potential to affect undocumented prehistoric and historic period archaeological resources. Accordingly, the following mitigation measures are required.

Mitigation Measures

MM CUL-3 All ground-disturbing activities shall be monitored by an archaeological field technician under the supervision of a project archaeologist who meets the Secretary of the Interior's Professional Qualifications Standards. In the event of prolonged negative results (monitoring has not identified any buried cultural resources), the project archaeologist, in consultation with the grading contractor(s), may scale back monitoring to a schedule approved by the City of La Verne's Community Development Director or designee.

In the event archaeological materials are encountered during construction, all ground disturbing activities in the immediate area of the discovery (60-foot radius) shall be halted, an exclusionary buffer shall be established, and the archaeological field technician in coordination with the project archaeologist shall evaluate the resource in accordance with *CEQA Guidelines* Section 15064.5(f)) and **Mitigation Measure CUL-4**. This measure shall be implemented to the satisfaction of the City Community Development Director or designee.

MM CUL-4 If the archaeological field technician in coordination with the project archaeologist determines cultural resources are 50 years of age or older, or resources less than 50 years old but which qualify for exceptional significance pursuant to California Code of Regulations Section 4852, the construction supervisor is obligated to halt work within a 60-foot radius [exclusionary buffer] around the find, and the archaeologist shall evaluate the resource for significance pursuant to *CEQA Guidelines* Section 15064.5. Additionally, the resource(s) shall be recorded on California Department of Parks and Recreation 523 Forms as appropriate.

The archaeological field technician shall be empowered to temporarily halt or divert grading equipment to allow recording, evaluation, and removal of unearthed resources. If the find is determined to be an historical or unique archaeological resource, contingency funding and a time allotment sufficient to allow for implementation of avoidance measures or appropriate mitigation must be provided. Ground disturbing work may continue on other parts of the project site while historical [or unique archaeological] resource mitigation takes place.

The project archaeologist, the project applicant, the City of La Verne's Community Development Director or designee, and interested Native American tribal representatives (i.e., those who have expressed an interest in the project through the Assembly Bill 52 process pursuant to California Public Resources Code

§21080.3.2) shall confer regarding the appropriate disposition of the discovered resource(s). Disposition may include curation with a certified scientific or educational repository in accordance with current professional repository standards. However, if an agreement on the disposition of cultural resources cannot be reached, the resource(s) shall be reburied on the project site in an area not subject to further ground disturbance, with appropriate recordation on the California Department of Parks and Recreation 523 Forms. Work shall not resume within the exclusionary buffer without City authorization, and all subsequent ground-disturbing activities shall be monitored at the discretion of the archaeologist.

All cultural resources, including the locations from which they are recovered and to which they may be reburied, shall remain confidential pursuant to the California Code of Regulations Section 15120(d). A final report containing the significance and treatment of findings shall be prepared by the project archaeologist and submitted to the City of La Verne's Community Development Director or designee and the appropriate Native American Tribe(s). This measure shall be implemented to the satisfaction of the City of La Verne's Community Development Director or designee.

With implementation of **Mitigation Measures CUL-3** and **CUL-4** impacts to potential archaeological resources would be reduced to **less than significant with mitigation incorporated**.

c) Potentially Significant Impact Unless Mitigation Incorporated. As with significant archaeological resources, vertebrate or unique paleontological resources are generally considered to be historical resources, as defined in *CEQA Guidelines* Section 15064.5(a)(3)(D). Subsequent development projects facilitated by the proposed Master Plan Update could result in substantial earthwork and other ground-disturbing activities. The project site is underlain by Pleistocene-age (11,700 to 2,600,000 years ago) older alluvial sediments (Qoa).[17] These deposits are generally sandy or gravelly alluvial fan deposits covering extensive areas and are known to yield paleontological resources. The nearest Pleistocene vertebrate locality (LACM 1728) in older quaternary deposits (Qoa) is recorded between 10 and 15 feet below grade in English Canyon southwest of the City of Chino approximately 10 miles south of the project site.[18]

The Damien High School campus is completely urbanized and has been previously graded. Considering the extensive ground disturbances that have occurred on the project site, and in light of results and findings from paleontological records searches previously conducted in similar settings, the likelihood of encountering intact and significant subsurface paleontological resources on the project site from implementation of the Master Plan Update is low. However, ground-disturbing activities at the project site still have the potential to disturb previously unknown resources if excavation depths reach native, undisturbed sediments.

Due to the age of the sediments underlying the project site, paleontological resources may be present in these potentially fossil-bearing soils and rock formations below the ground surface. If

[17] *Geologic Map of the San Dimas and Ontario Quadrangles, Los Angels and San Bernardino Counties, California.* Dibblee Geological Foundation Map #DF-91. Thomas W. Dibblee, Jr. and John A. Minch. 2002. https://ngmdb.usgs.gov/ngm-bin/pdp/zui_viewer.pl?id=34314 (Accessed June 15, 2018).

[18] *Paleontological resources for the proposed University of La Verne Facilities and Technology Master Plan Update EIR Project, Rincon Project # 16-02821, in the City of La Verne, Los Angeles County, Project Area.* Letter Report by Samuel A. McLeod, Rincon Consultants. August 10, 2016.

ground-disturbing activities reach depths of native, undisturbed fossil-bearing sediments, implementation of the Master Plan Update has the potential to damage or destroy paleontological resources. Therefore, **Mitigation Measures CUL-5** and **CUL-6** are required in the event that unanticipated paleontological resources are unearthed during construction to ensure paleontological resources would be subject to scientific recovery and evaluation.

Mitigation Measures

MM CUL-5 Prior to issuance of grading permits for all development applications prepared pursuant to the Damien High School Master Plan Update, the City shall verify that the following note is included on all grading plans:

> **"**If any suspected paleontological resources (fossils) are discovered during ground-disturbing activities, the construction supervisor shall halt work within a 100-foot radius around the find and establish an exclusionary buffer. Construction personnel shall not collect or move any suspected paleontological materials or further disturb any soils within the exclusionary buffer, but construction activity may continue unimpeded on other portions of the project site. Construction activity shall not resume within the exclusionary buffer until a qualified paleontologist (defined as an individual with an M.S. or Ph.D. in paleontology or geology who is experienced with paleontological procedures and techniques, who is knowledgeable in the geology of California, and who has worked as a paleontological mitigation project supervisor for a least one year) can assess the significance of the find. If the paleontologist determines the find is not a paleontological resource, no further evaluation shall be required within the exclusionary buffer, and construction activity shall be allowed to resume therein. However, if the paleontologist determines the find is a paleontological resource, construction activity shall not resume within the exclusionary buffer, and **Mitigation Measure CUL-6** shall apply."

This measure shall be implemented to the satisfaction of the City of La Verne's Community Development Director or designee.

MM CUL-6 If the qualified paleontologist determines paleontological resources are encountered on the project site, the paleontologist shall prepare a Paleontological Resource Impact Mitigation Plan to be implemented during the balance of ground-disturbing activities proposed as part of the current and any subsequent development application prepared pursuant to the Damien High School Master Plan Update. Implementation of the Paleontological Resource Impact Mitigation Plan shall include (but not be limited to) the following:

- Review of project-specific geotechnical report data, with particular regard to location and depth of earthmoving and the rock unit(s) encountered;
- Development of a formal agreement between the project applicant and the San Bernardino County Museum, Natural History Museum of Los Angeles County, Western Science Center, San Diego Natural History Museum, or Riverside Municipal Museum for the final disposition and permanent storage and maintenance of any fossil collections and associated data;

- The construction schedule, term/schedule of on-site paleontological monitor(s) and the extent of areas and activities to be monitored;
- Authority of paleontological monitor(s) to temporarily redirect construction activity in the vicinity of any paleontological discovery;
- Procedures for the evaluation and option to recover large fossil specimens and for the evaluation, recovery, and processing of small fossil specimens;
- Fossil specimen preparation, identification to the lowest taxonomic level possible, curation, and cataloging; and
- A report of findings.

The paleontologist shall monitor remaining ground-disturbing activities in native soils at the project site and shall be equipped to record and salvage fossil resources that may be unearthed during construction. The paleontologist shall temporarily halt or divert construction equipment to allow recording and removal of the unearthed resources. Any fossils found shall be offered for curation at a curation facility approved by the City. A report of findings, including, when appropriate, an itemized inventory of recovered specimens and a discussion of their significance, shall be prepared upon completion of the steps outlined above. The report and inventory, when submitted to and approved by the appropriate lead agency, will signify completion of the program to mitigate impacts on paleontological resources. This measure shall be implemented to the satisfaction of the City of La Verne's Community Development Director or designee.

With implementation of **Mitigation Measures MM-CUL-5** and **MM-CUL-6,** impacts to paleontological resources are considered **less than significant with mitigation incorporated**.

d) *Less than Significant Impact.* The Damien High School campus is completely urbanized and has been previously graded. Considering the extensive ground disturbances that have occurred on the project site, the likelihood of encountering human remains is minimal. In the event that human remains (or remains that may be human) are discovered at the project site during grading or earthmoving activities, no further disturbance shall occur within 100 feet of the find until the project applicant has notified the Los Angeles County Coroner and the City of La Verne Community Development Director or designee immediately, and the County Coroner has made a determination of origin and disposition.[19] Section 7050.5 of the California Health and Safety Code requires that excavation be stopped in the vicinity of the discovered human remains until the coroner can determine whether the remains are those of a Native American. If human remains are determined as those of Native American origin, the project proponent shall comply with the State relating to the disposition of Native American burials that fall within the jurisdiction of the Native American Heritage Commission (NAHC) (PRC Section 5097). The coroner shall contact the NAHC to determine the most likely descendant(s) (MLDs). The MLD shall complete his or her inspection and make recommendations or preferences for treatment within 48 hours of being granted access to the site. The disposition of the remains shall be overseen by the MLD to determine the most appropriate means of treating the human remains and any associated grave artifacts.

[19] *Division 7, Dead Bodies;* Chapter 2, *General Provisions*, § 7050.5, California Health and Safety Code.

The specific locations of Native American burials and reburials shall be proprietary and not disclosed to the general public. The County Coroner will notify the NAHC in accordance with California Public Resources Code 5097.98. Additionally, Section 7052 of the California Health and Safety Code states that disturbance of Native American cemeteries is a felony. As adherence to State regulations is required for all development, impacts associated with the inadvertent discovery of human remains would be **less than significant**. No mitigation is required.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
VI. Geology and Soils				
Would the project:				
a) Expose people or structures to 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 or based on other substantial evidence of a known fault?	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 1-B of the Uniform Building Code, creating substantial risks to life or property?	☐	☐	☒	☐
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?	☐	☐	☐	☒

Discussion

a(i) No Impact. The project site is not located within the boundaries of an Earthquake Fault Zone as defined by the Alquist-Priolo Earthquake Fault Zoning Act of 1972.[20,21] There are no known active or potentially active faults traversing the project site, and the risk of ground rupture due to fault displacement beneath the site is low.[22] Additionally, the City's General Plan does not identify any Earthquake Fault Zones within or adjacent to the project limits.[23] In the absence of any on-site active faults, **no impact** related to fault rupture would occur on the project site. No mitigation is required.

a(ii) Less Than Significant Impact. The project site is situated in a seismically active area that has historically been affected by generally moderate to occasionally severe levels of ground motion.[24] A fault is considered active if there is evidence of movement (either directly, observable, or inferred) along one or more of its segments within the last 11,000 years. The site lies in relative close proximity to several active faults such as the Sierra Madre Fault and the San Jose Fault approximately two miles to the north and south, respectively. Additionally, the Indian Hill Fault is mapped approximately 0.35 mile north of the project site; however, the alignment of the Indian Hill Fault is not clear at the surface, and its presence is inferred by the presence of a groundwater barrier and the volcanic ridge (Way Hill) in the region.[25] Furthermore, there is no conclusive evidence to suggest the Indian Hill Fault is an active fault.[26]

Due to the presence of active and inferred faults in proximity to the project site, Damien High School is expected to experience occasionally moderate to severe ground-shaking, as well as some background shaking from other seismically active areas of the Southern California region. The extent of ground-shaking associated with an earthquake is dependent upon the size of the earthquake and the geologic material of the underlying area. All future construction and development within the project site would be required to comply with applicable provisions of the California Building Code (CBC), as amended, and the City's adopted building codes pursuant to Chapter 15.04 of the City of La Verne's Municipal Code.

Pursuant to California Code of Regulations (CCR), Title 24, Part 2, the CBC establishes minimum standards for building design in the State, and it is consistent with or more stringent than Uniform Building Code requirements. Local codes are permitted to be more restrictive than Title 24, but are required to be no less restrictive. The CBC is designed and implemented to improve building safety, sustainability, and consistency, and to integrate new technology and construction methods to construction projects throughout California. The CBC is published every three years, and intervening Code Adoption Cycles produce Supplement pages every 18 months into each three-year period. All proposed amendments to California's building standards are subject to a lengthy and transparent public participation process throughout each code adoption cycle.

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20 *Earthquake Zones of Required Investigation, San Dimas Quadrangle.* California Geological Survey. March 25, 1999.

21 *Supplement #1 to FER-68: San Jose and Walnut Creek Faults.* California Division of Mines and Geology. State of California Department of Conservation. Sacramento, CA. March 20, 1978.

22 *Historical Earthquakes and Significant Faults in Southern California*. Southern California Earthquake Data Center, California Institute of Technology. October 16, 2012. http://scedc.caltech.edu/significant/index.html (Accessed June 15, 2018).

23 *Public Safety Element.* Map PS-1, Geologic Hazards and Constraints Map. The City of La Verne General Plan. Adopted December 7, 1998.

24 *Historical Earthquakes and Significant Faults in Southern California*. Southern California Earthquake Data Center, California Institute of Technology. October 16, 2012. http://scedc.caltech.edu/significant/index.html (Accessed June 15, 2018).

25 *Section 3.8 - Geologic Hazards.* Page 3.8-23. Metro Gold Line Foothill Extension - Azusa to Montclair Final Environmental Impact Report. February 2013.

26 *Natural Hazard Mitigation Plan for the City of La Verne, CA.* Page 6-10. City of La Verne. 2012.

Chapter 16 of the CBC regards General Design Requirements, including regulations governing seismically resistant construction (Chapter 16, Division IV) and construction to protect people and property from hazards associated with excavation cave-ins and falling debris or construction materials. Chapter 18 and Appendix Chapter 33 regard site demolition, excavations, foundations, retaining walls, and grading, including requirements for seismically resistant design, foundation investigations, stable cut and fill slopes, and drainage and erosion control. The procedures and limitations for the design of structures are based on site characteristics, occupancy type, configuration, structural system height, and seismic zoning. Construction activities are subject to occupational safety standards for excavation, shoring, and trenching as specified in California Occupational Safety and Health Administration regulations (CCR, Title 8).

Chapter 15.04 of the City Municipal Code incorporates, by reference, the design and construction standards of the most current edition of the CBC. State law requires the design and construction of new structures comply with current CBC requirements, which address general geologic, seismic (including ground shaking), and soil constraints for new buildings. Accordingly, design and construction of future developments proposed under the Master Plan Update would be required to adhere to current CBC requirements to reduce any potential impacts from seismic related activity.

Prior to the issuance of grading permits, the project applicant would be required to prepare and submit detailed grading plans as each specific aspect detailed in the Master Plan Update is proposed. The plans would be prepared in conformance with applicable City of La Verne development standards. Additionally, because the proposed Master Plan Update would be implemented in phases over a period of several years, construction plans would be subject to review by the City for compliance with the most current edition of the CBC at the time of construction, pursuant to Section 18.60.030 of the City of La Verne's Municipal Code (**Standard Condition GEO-1**), and require preparation of site-specific geological, geotechnical, or structural design studies pursuant to Chapter 15.04 of the City Municipal Code (**Standard Condition GEO-2**).

Standard Conditions: No mitigation is required; however, the following Standard Conditions are regulatory requirements implemented as routine actions conditioned by the City La Verne would ensure impacts related to seismic activity remain less than significant.

Standard Condition GEO-1: Prior to issuance of grading and/or building permits for any development application prepared pursuant to the Damien High School Master Plan Update, the project applicant shall provide evidence to the City for review and approval that on-site structures, features, and facilities have been designed and will be constructed in conformance with applicable provisions of the most current edition of the California Building Code in effect at the time of development application submittal. This condition shall be implemented to the satisfaction of the City Community Development Director or designee.

Standard Condition GEO-2: Prior to issuance of grading and/or building permits for any development application prepared pursuant to the Damien High School Master Plan Update, the project applicant shall provide evidence to the City of La Verne for review and approval that a

project-specific, design-level geotechnical/soils/geologic report has been prepared for the proposed development. The report shall consider, but shall not necessarily be limited to, such factors as seismic acceleration; manufactured slope stability (if applicable); liquefaction; compressible, expansive, and corrosive soils; and engineering and construction of occupied and inhabited structures. The findings and recommendations contained in the project-specific, design-level geotechnical/ soils/geologic report shall be implemented prior to issuance of grading, building, and/or occupancy permits as applicable. As necessary, the City of La Verne may require additional studies and/or engineering protocols to meet its requirements. This condition shall be implemented to the satisfaction of the City of La Verne's Community Development Director or designee.

Adherence to applicable provisions of the most current edition of the CBC in effect at the time of development application submittal, as well as measures identified in project-specific, design-level geotechnical investigations prepared as part of development applications under the Master Plan Update, would ensure ground-shaking hazards remain **less than significant.** No mitigation is required.

a(iii) Less Than Significant Impact. Liquefaction describes the phenomenon where ground-shaking works cohesion less soil particles into a tighter packing, which induces excess pore pressure. Engineering research of soil liquefaction potential indicates that generally three basic factors must exist concurrently in order for liquefaction to occur. These factors include:

- A source of ground shaking, such as an earthquake, capable of generating soil mass distortions;
- A relatively loose silty and/or sandy soil; and
- A relative shallow groundwater table (within approximately 50 feet below ground surface) or completely saturated soil conditions that will allow positive pore pressure generation.

According to the San Dimas Quadrangle Seismic Hazard Zones Map,[27] the project site is not located in a mapped California Geologic Survey liquefaction hazard zone. Pursuant to Section 18.60.030 of the City of La Verne's Municipal Code, the project proponent would be required to prepare and submit detailed grading plans as each specific development is proposed prior to the issuance of grading permits. Implementation of **Standard Condition GEO-1** (compliance with the current edition of the CBC) and **Standard Condition GEO-2** (preparation of site-specific geological, geotechnical, or structural design studies) would ensure all future development proposed under the Master Plan Update would be protected from seismic-related ground failure, including liquefaction. Impacts would be **less than significant** and no mitigation is required.

a(iv) Less Than Significant Impact. The geologic and topographic characteristics of an area often determine its potential for landslides. Steep slopes, the extent of erosion, and the rock composition of a hillside all contribute to the potential for slope failure and landslide events. In

[27] *Earthquake Zones of Required Investigation, San Dimas Quadrangle.* California Geological Survey. March 25, 1999.

order to fail, unstable slopes typically need to be disturbed; the common triggering mechanisms of slope failure include undercutting of slopes by erosion or grading, saturation of marginally stable slopes by rainfall or irrigation, and shaking of marginally stable slopes during earthquakes.

The project site is relatively flat and would not naturally be subject to landslides. In addition, the San Dimas Quadrangle Seismic Hazard Zones Map does not identify the project site within a seismic-induced landslide zone.[28] Implementation of **Standard Condition GEO-1** (compliance with the current edition of the CBC) and **Standard Condition GEO-2** (preparation of site-specific geological, geotechnical, or structural design studies) would ensure all future development proposed under the Master Plan Update would be protected from landslides. Impacts would be **less than significant** and no mitigation is required.

b) Less Than Significant Impact. As stated previously, the project site is underlain by older alluvial sediments (Qoa) comprised of generally sandy or gravelly alluvial fan deposits covering extensive areas. The project site has been previously graded and is fully developed, urbanized, and completely surrounded by urban development. Therefore, adoption of the proposed Master Plan Update would not result in substantial soil erosion or loss of topsoil, but construction activities associated with future development facilitated by the proposed Master Plan Update would have the potential to cause soil erosion or loss of topsoil.

For projects anticipated to disturb one or more acre, short-term erosion effects during the construction phase would be prevented through required grading permits and implementation of a Storm Water Pollution Prevention Plan (SWPPP) and incorporation of best management practices (BMPs), as required, intended to reduce soil erosion pursuant to the National Pollutant Discharge Elimination System (NPDES) program and Chapter 13.50 of the City Municipal Code. Furthermore, a Standard Urban Storm Water Mitigation Plan for Municipal Storm Water and Urban Runoff Management Programs in Los Angeles County (SUSMP) would be required for development of parking lots of 5,000 square feet or more of surface area (or with 25 or more parking spaces) or for future developments resulting in the creation, addition, or replacement of 5,000 square feet or more of impervious surface area on an already developed site pursuant to Section 13.50.093 of the City Municipal Code.

Compliance with storm water regulations include minimizing storm water contact with potential pollutants by providing covers and secondary containment for construction materials, designating areas away from storm drain systems for storing equipment and materials, and implementing good housekeeping practices at the construction site. Prior to the issuance of grading permits, the project proponent would be required to prepare and submit project- and site-specific, detailed grading plans to the City of La Verne as each development or site improvement is proposed in accordance with Section 18.60.030 and Chapter 18.16 of the City of La Verne's Municipal Code.

For each development project proposed under the Master Plan Update, the SWPPP and SUSMP would identify BMP measures to treat and/or limit the entry of contaminants into the storm drain system. The SUSMP is required to be incorporated by reference or attached to a project's SWPPP as the Post-Construction Management Plan. Adherence to the BMPs contained in the SWPPP and SUSMP would ensure that impacts related to soil erosion would remain **less than significant.** No mitigation is required.

[28] *Ibid*.

c) Less Than Significant Impact. The project site is occupied by the Damien High School facilities and associated parking and landscaped areas, and evidence of landslides and/or slope instabilities does not occur on the project site. According to the San Dimas Quadrangle Seismic Hazard Zones Map,[29] the project site is not located in an area considered susceptible to landslides or liquefaction. Due to the property's flat topography, the absence of significant nearby slopes or hills, and the planned site development in accordance with **Standard Conditions GEO-1** and **GEO-2**, potential impacts from landslides, slope instabilities, and/or liquefaction at the project site are **less than significant.** No mitigation is required.

According to Map PS-1 (Geologic Hazards & Constraints Map) of the City General Plan,[30] the soils underlying the project site may be susceptible to seismically induced dry sand settlement when additional loads are imposed on those soils by future on-site structures. Additionally, near-surface alluvium is subject to consolidation when exposed to load increases expected to be exerted by the foundations of future on-site structures, as well as collapse when exposed to moisture infiltration. Shrinkage, bulking, and subsidence are primarily dependent upon the degree of soil compaction achieved during construction. Accordingly, the proposed project would incorporate **Standard Condition GEO-1**, which requires proper engineering design and construction in conformance with current CBC standards, and **Standard Condition GEO-2**, which requires preparation of project- and site-specific, design-level geotechnical/soils/geologic reports and implementation of applicable recommendations to ensure a sufficient layer of engineered fill or densified soil is prepared beneath any proposed structural footings/ foundations. Through incorporation of **Standard Conditions GEO-1** and **GEO-2**, impacts from subsidence and/or collapse would be **less than significant.** No mitigation is required.

d) Less Than Significant Impact. On-site soils consist of Urban land-Azuvina-Montebello complex, zero to five percent slopes.[31] According to Map PS-1 (Geologic Hazards & Constraints Map) of the City General Plan,[32] the soils underlying the project site may be susceptible to expansion. No specific development proposal or site plan has been submitted to the City to date, but any development application under the proposed Master Plan Update would be subject to the City's Community Development Director or designee review and approval prior to issuance of grading and building permits in accordance with Section 18.60.030 and Chapter 18.16 of the City of La Verne's Municipal Code. Furthermore, Section 15.04.110 (Expansive Soils) of the City of La Verne's Municipal Code amends Section 1809.4 of the CBC to conclude foundation systems within the City are considered to be on expansive soils and shall be constructed in a manner that will minimize damage to the structure from soil movement.

The potential hazards of expansive soils would be addressed through the integration of geotechnical information in the planning and design process for future on-site developments to determine the local soil suitability for specific proposed uses in accordance with the CBC, as amended (**Standard Condition GEO-1**), and project- and site-specific, design-level geotechnical/ soils/geologic reports (**Standard Condition GEO-2**). Through incorporation of **Standard Conditions GEO-1** and **GEO-2**, impacts from expansive soils would be **less than significant**. No mitigation is required.

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29 *Ibid.*

30 *Public Safety Element.* Map PS-1, Geologic Hazards and Constraints Map. The City of La Verne General Plan. Adopted December 7, 1998.

31 *Web Soil Survey.* Natural Resources Conservation Service, U.S. Department of Agriculture. https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx (Accessed March 21, 2018).

32 *Public Safety Element.* Map PS-1, Geologic Hazards and Constraints Map. The City of La Verne General Plan. Adopted December 7, 1998.

e) No Impact. The project site and vicinity are served by existing municipal wastewater infrastructure. Any future on-site development would connect to the existing wastewater collection and conveyance facilities owned and operated by the City of La Verne. Therefore, septic tanks would not be necessary. Because the proposed project would not include the installation of septic tanks or alternative wastewater disposal systems, **no impact** would occur. No mitigation is required.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
VII. Greenhouse Gas Emissions				
Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Discussion

a) Less than Significant Impact. *State CEQA Guidelines* Section 15064(b) provides that the "determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data," and further states that an "ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting."

Currently, there is no statewide greenhouse gas (GHG) emissions threshold used to determine potential GHG emissions impacts of a project. Air districts in the State are still developing and revising threshold methodology and thresholds. To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, the SCAQMD convened a GHG CEQA Significance Threshold Working Group (Working Group). Based on the last Working Group meeting (Meeting No. 15) held in September 2010, the SCAQMD is proposing to adopt a tiered approach for evaluating GHG emissions for development projects where the SCAQMD is not the lead agency. This concept is equivalent to the existing consistency determination requirements in *CEQA Guidelines* Sections 15064(h)(3), 15125(d), or 15152(a).

In accordance with the proposed phasing of the project, a project-level analysis of GHG emissions projected from construction and operation activities was prepared. The analysis is based on the Air Quality and Greenhouse Gas Analysis prepared for the project (Appendix B), which utilizes the SCAQMD Tier 3 Option 2 approach of a single numerical screening threshold of 3,000 metric tons (MT) of carbon dioxide-equivalent gases (CO_2e) per year for all non-industrial projects is utilized in order to determine the significance for the proposed project's GHG emissions. Calculations of GHG emissions are based on compliance with various regulations

designed to reduce GHG emissions. For example, at least 60 percent of all construction materials (including, but not limited to, soil, mulch, vegetation, concrete, lumber, metal, and cardboard) shall be recycled/reused, and "green building materials" (e.g., those materials that are rapidly renewable or resource-efficient, and recycled and manufactured in an environmentally friendly way) shall be used for at least ten percent of the project in accordance with California Department of Resources Recycling and Recovery (CalRecycle) Sustainable (Green) Building Program.

Construction Emissions. Generation of short-term GHG emissions would occur during demolition, site preparation, and construction. GHGs would be emitted through the operation of construction equipment and from worker and vendor vehicles, which typically use fossil-based fuels for operation. The combustion of fossil-based fuels creates GHGs such as CO_2, CH_4, and N_2O. Furthermore, CH_4 is emitted during the fueling of heavy equipment. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change.

GHG Emissions during demolition, grading, and construction activities would vary as construction activity levels change. For the purposes of analyzing construction emissions, the project will be constructed in three phases. The duration of construction activity and associated construction equipment was based on the California Emissions Estimator Model (CalEEMod) version 2016.3.2 defaults for phasing. Phase 1 is expected to commence in 2019 and require approximately 9 months to complete. Phase 2 is anticipated to kickoff shortly after the completion of Phase 1 construction, be completed in several sub phases over a minimum of five years (by approximately spring/summer 2025), and would be dependent on funding sources. Phase 3 is not anticipated to commence until all of the sub phases identified in Phase 2 are complete. Due to the uncertainty of Phase 3 commencement, the buildout horizon of the Master Plan Update is anticipated to occur by 2029. However, as a worst-case scenario, the GHG analysis anticipates construction of Phase 3 will occur between spring/summer of 2025 and spring/summer of 2026, which assumes a more intensive construction activity schedule (i.e., more equipment operating at the same time or a continuous level of construction activity with no lapse in construction between phases) than would occur if Phase 3 were to be constructed by 2029. Table G lists the estimated greenhouse gas emissions associated with construction of the project.

Table G: Construction Greenhouse Gas Emissions

Construction Phase		Total Regional Pollutant Emissions (MT/yr)			
		CO_2	CH_4	N_2O	CO_2e
2019	Phase 1 Demolition	37	<1	0	38
	Phase 1 Building Construction	834	<1	0	836
2020	Phase 1 Building Construction	298	<1	0	298
	Phase 1 Architectural Coating	31	<1	0	31
	Phase 2 Demolition	37	<1	0	37
	Phase 2 Building Construction	1,098	<1	0	1,100
2021	Phase 2 Building Construction	1,592	<1	0	1,596
2022	Phase 2 Building Construction	1,558	<1	0	1,561
2023	Phase 2 Building Construction	1,515	<1	0	1,518
2024	Phase 2 Building Construction	1,506	<1	0	1,509
	Phase 2 Architectural Coating	38	<1	0	38

Table G: Construction Greenhouse Gas Emissions

Construction Phase		Total Regional Pollutant Emissions (MT/yr)			
		CO_2	CH_4	N_2O	CO_2e
2025	Phase 2 Building Construction	491	<1	0	492
	Phase 2 Architectural Coating	49	<1	0	49
	Phase 2 Parking Lot	11	<1	0	11
	Phase 3 Demolition	37	<1	0	37
	Phase 3 Building Construction	751	<1	0	753
2026	Phase 3 Building Construction	484	<1	0	485
	Phase 3 Architectural Coating	35	<1	0	35
Total Construction Emissions		**10,401**	**<1**	**0**	**10,422**
Amortized over 30 years		**347**	**<1**	**0**	**347**

Source: Table O. *Air Quality and Greenhouse Gas Analysis - Damien High School Master Plan Update.* LSA. January 2019. (Appendix B).

CH_4 = methane
CO_2 = carbon dioxide
CO_2e = carbon dioxide equivalent
MT/yr = metric tons per year
N_2O = nitrous oxide

Operational Emissions. Long-term operation of the proposed project would generate GHG emissions from various source categories. Area-source emissions would be associated with activities including landscaping and maintenance of the project site. Energy-source emissions would occur at off-site utility providers as a result of demand for electricity and natural gas by the proposed project. Mobile-source emissions of GHGs would include project-generated vehicle trips associated with on-site energy use and student and employee vehicle trips, as detailed in the project-specific Traffic Impact Analysis and in Section XVI of this Initial Study. Waste generated by the project and water used would also result in GHG emissions.

The proposed project would address campus development needs without increasing the student or faculty/staff population from the current approximate student population of 940 and faculty/staff population of 75. The CalEEMod version 2016.3.2 model was used to characterize the existing 2018 school operational GHG emissions to document the baseline condition. CalEEMod was then used to characterize the Damien High School operational GHG emissions with the total Master Plan Update implemented in 2026,[33] through construction and operation of Phase 3 and including the estimated construction emissions of GHGs amortized over 30 years, as detailed in Table H.

Table H: Operational Greenhouse Gas Emissions

Source	Pollutant Emissions, MT/year					
	Bio- CO_2	NBio-CO_2	Total CO_2	CH_4	N_2O	CO_2e
Greenhouse Gas Emissions from the Existing Damien High School						
Area Sources	0	<1	<1	<1	0	<1
Energy Sources	0	688	688	<1	<1	690
Mobile Sources	0	2,502	2,502	<1	0	2,506

[33] Due to the uncertainty of Phase 3 commencement, the buildout horizon of the Master Plan Update is anticipated to occur by 2029. However, the GHG analysis assumes operation of Phase 3 will begin approximately spring/summer of 2026. This assumption is a worst-case scenario since projected GHG emissions result from improvements in building energy efficiency, enhanced water conservation and waste handling procedures, and improved recycling methods between the 2018 and 2026 operational years, which do not include further improvements or enhancements reasonably expected to occur between 2026 and 2029.

Table H: Operational Greenhouse Gas Emissions

Source	Pollutant Emissions, MT/year					
	Bio- CO_2	NBio-CO_2	Total CO_2	CH_4	N_2O	CO_2e
Waste Sources	34	0	34	2	0	84
Water Usage	1	93	95	<1	<1	99
Total Existing Emissions	**35**	**3,284**	**3,319**	**2**	**0**	**3,379**
Greenhouse Gas Emissions from Damien High School with Master Plan Update						
Construction emissions amortized over 30 years	0	347	347	<1	0	347
Operational Emissions						
Area Sources	0	<1	<1	<1	0	<1
Energy Sources	0	803	803	<1	<1	805
Mobile Sources	0	2,325	2,325	<1	0	2,328
Waste Sources	35	0	35	2	0	86
Water Usage	1	96	97	<1	<1	102
Total Proposed Emissions	**36**	**3,571**	**3,607**	**2**	**0**	**3,669**
					Net New Operational Emissions	**290**
					SCAQMD Threshold	**3,000**
					Emissions Exceed Threshold?	**No**

Source: Table P. *Air Quality and Greenhouse Gas Analysis - Damien High School Master Plan Update.* LSA. January 2019. (Appendix B).

Note: Numbers in table may not appear to add up correctly due to rounding.

Bio-CO_2 = biologically generated CO_2
CH_4 = methane
CO_2 = carbon dioxide
CO_2e = carbon dioxide equivalent
MT/yr = metric tons per year
N_2O = nitrous oxide
NBio-CO_2 = Non-biologically generated CO_2

As detailed in Table H, implementation of the Master Plan Update through buildout of Phase 3 would result in a 290 MT CO_2e per year increase of GHG emissions over existing, baseline conditions. This emission level is less than the SCAQMD Tier 3 Option 2 GHG threshold of 3,000 MT CO_2e per year for all non-industrial projects. Therefore, the proposed project will not generate greenhouse gas emissions that would have a significant impact on the environment. Impacts will be **less than significant**, and no mitigation is required.

b) Less than Significant Impact. Executive Order (EO) S-3-05 (June 2005) established GHG targets for the State (e.g., returning to year 2000 emission levels by 2010, to 1990 levels by 2020, and to 80 percent below 1990 levels by 2050). EO S-3-05 directed the Secretary of the California Environmental Protection Agency to coordinate efforts to meet the targets with the heads of other State agencies. This group became the Climate Action Team (CAT) which published the Climate Action Team Report to Governor Schwarzenegger and the Legislature (the "2006 CAT Report") in March 2006. The 2006 CAT Report identifies a recommended list of strategies that the State could pursue to reduce GHG emissions at a statewide level to meet the goals of EO S-3-05. These are strategies that could be implemented by various State agencies to ensure that the Governor's targets are met and can be met within the existing authority of the State agencies. Table I details CAT strategies applicable to the project and demonstrates how implementation of the Master Plan Update would be consistent with these strategies.

Table I: Project Consistency with 2006 CAT Report Greenhouse Gas Emission Reduction Strategies

Strategy	Project Consistency
California Air Resources Board	
Vehicle Climate Change Standards AB 143 (Pavley) required the State to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of climate change emissions emitted by passenger vehicles and light duty trucks. Regulations were adopted by the ARB I September 2004.	*Consistent* 75 percent of the vehicles in operation by 2020 are expected to meet the 2004 California Air Resources Board (ARB) standards. By 2025, nearly all of the U.S. vehicle stock would comply with AB 1493 (Pavley). The vehicles that travel to/from the project site on public roadways would be in compliance with ARB vehicle standards that are in effect at the time of vehicle purchase, as required by law.
Diesel Anti-Idling In July 2004, the ARB adopted a measure to limit diesel-fueled commercial motor vehicle idling.	*Consistent* Current State law restricts diesel truck idling to five minutes or less. Diesel trucks operating on the project site during construction are subject to this statewide law.
Alternative Fuels: Biodiesel Blends ARB would develop regulations to require the use of 1 to 4 percent biodiesel displacement of California diesel fuel.	*Consistent* Diesel vehicles such as construction vehicles that travel to and from the campus on public roadways could utilize this fuel once it is commercially available.
Alternative Fuels: Ethanol Increased use of E-85 fuel.	*Consistent* Students and faculty of the college could choose to purchase flex-fuel vehicles and utilize this fuel once it is commercially available regionally and locally.
Heavy-Duty Vehicle Emission Reduction Measures Increased efficiency in the design of heavy duty vehicles and an education program for the heavy-duty vehicle sector.	*Consistent* The heavy-duty vehicles that travel to and from the project site on public roadways would be subject to all applicable ARB efficiency standards that are in effect at the time of vehicle manufacture.
Achieving 50 Percent Statewide Recycling Goal Achieving the State's 50% waste reduction mandate as established by the Integrated Waste Management Act of 1989, (AB 939, Sher, Chapter 1095, Statutes of 1989), will reduce climate change emissions, associated with energy intensive material extraction and production, as well as methane emission from landfills. A per-capita diversion rate of 65% has been achieved on a statewide basis, consistent with AB 939.	*Consistent* The City has completed a comprehensive waste reduction and recycling plan in compliance with State Law AB 939, which requires every city in California to reduce the waste it sends to landfills by 50% by the year 2000. The City has maintained an average of 64% diversion of solid waste for recycling since 2007. Damien High School administrators would ensure implementation of the proposed Master Plan Update occurs in accordance with waste and recycling laws and regulations, including the guidelines set forth in AB 939.
Zero Waste – High Recycling Efforts to exceed the 50% goal would allow for additional reductions in climate change emissions.	*Consistent* As discussed above, the City has maintained an average of 64 percent diversion of solid waste for recycling since 2007. AB 341 requires a statewide diversion rate of 75% and thus the City of La Verne and its disposal partner (Waste Management) continue to explore new technologies and strategies to further reduce waste and increase diversion from landfills.
Department of Forestry	
Urban Forestry A new statewide goal of planning 5 million trees in urban areas by 2020 would be achieved through the expansion of local urban forestry programs.	*Consistent* The landscaping proposed for the project would include planting new drought-tolerant trees and would therefore help move toward this statewide goal.
Department of Water Resources	
Water Use Efficiency Approximately 19% of all electricity, 30 percent of all natural gas, and 88 million gallons of diesel are used to convey, treat,	*Consistent* The proposed project would be required to comply with Chapter 13.15 of the City's Municipal Code that establishes

Table I: Project Consistency with 2006 CAT Report Greenhouse Gas Emission Reduction Strategies

Strategy	Project Consistency
distribute and use water and wastewater. Increasing the efficiency of water transport and reducing water use would reduce greenhouse gas emissions.	water conservation, use, and restrictions. The project proposes to utilize site design and landscape palettes to conserve a significant amount of water and reduce runoff. Additionally, proposed facilities would be equipped with low-flow plumbing fixtures, reducing water use in accordance with CalGreen standards.
Energy Commission (CEC)	
Building Energy Efficiency Standards in Place and in Progress Public Resources Code 25402 authorizes the CEC to adopt and periodically update its building energy efficiency standards (that apply to newly constructed buildings and alterations to existing buildings).	*Consistent* The proposed Master Plan Update would need to comply with the standards of Title 24 that are in effect at the time of development.
Appliance Energy Efficiency Standards in Place and in Progress Public Resources Code 25402 authorizes the Energy Commission to adopt and periodically update its appliance energy efficiency standards (that apply to devices and equipment using energy that are sold or offered for sale in California).	*Consistent* Under State law, appliances that are purchased for projects carried out under the proposed Master Plan Update—both pre- and post-development—would be consistent with energy efficiency standards that are in effect at the time of manufacture.
Green Buildings Initiative Green Building EO S-20-04 (CA 2004) sets a goal of reducing energy use in public and private buildings by 20% by the year 2015, as compared with 2003 levels. The EO and related action plan spell out specific actions State agencies are to take with State-owned and -leased buildings. The EO and plan also discuss various strategies and incentives to encourage private building owners and operators to achieve the 20% target.	*Consistent* As discussed previously, development under the proposed Master Plan Update would be required to be constructed in compliance with the standards of Title 24 that are in effect at the time of development. The 2016 Title 24 standards exceed the efficiency of the 2008 standards by more than 30%.
Business, Transportation and Housing	
Measures to Improve Transportation Energy Efficiency Builds on current efforts to provide a framework for expanded and new initiatives including incentives, tools and information that advance cleaner transportation and reduce climate change emissions.	*Consistent* The project is in close proximity to existing commercial, residential, and recreational development, which encourages the use of alternative modes of transportation.
Smart Land Use and Intelligent Transportation Systems (ITS) Smart land use strategies encourage jobs/housing proximity, promote transit-oriented development, and encourage high-density residential/commercial development along transit corridors.	*Consistent* The project site is in close proximity to residential, recreational, and commercial developments. Foothill Transit currently operates two bus routes in the immediate vicinity of the project site: Foothill Transit Route 492 eastbound is served via a bus stop at the southeast corner of Bonita Avenue and Damien Avenue along the northwestern corner of the project site, while Foothill Transit Route 492 westbound is served via a bus stop at the northwest corner of Bonita Avenue and Damien Avenue approximately 200 feet northwest of the project site.
Public Utilities Commission (PUC)	
California Solar Initiative The solar initiative includes installation of 1 million solar roofs or an equivalent 3,000 MW by 2017 on homes and businesses, increased use of solar thermal systems to offset the increasing demand for natural gas, use of advanced metering in solar applications, and creation of a funding source that can provide rebates over 10 years through a declining incentive schedule.	*Not applicable* The Master Plan Update implementation would not preclude the implementation of this strategy by energy providers, however.

Source: Tables 5-1, 5-2, 5-3, and 5-4. *Climate Action Team Report to Governor Schwarzenegger and the Legislature.* California Environmental Protection Agency. March 2006.

In addition, the Office of the California Attorney General published *The California Environmental Quality Act Addressing Global Warming Impacts at the Local Agency Level* in 2008. This document provides information that may be helpful to local agencies in carrying out their duties under CEQA as they relate to global warming and includes various measures that may reduce the global warming-related impacts of a project, as detailed in Table J.

Table J: Project Consistency with Applicable Attorney General Greenhouse Gas Reduction Measures

Strategy	Project Consistency
Transportation-Related Emissions	
Diesel Anti-Idling Set specific limits on idling time for commercial vehicles, including delivery vehicles.	*Consistent* Currently, the California Air Resources Board's (ARB) Airborne Toxic Control Measure (ATCM) to Limit Diesel-Fueled Commercial Motor Vehicle Idling restricts diesel truck idling to five minutes or less. Diesel powered construction vehicles and delivery vehicles are subject to this regulation and thus would comply with the applicable provisions.
Transportation Emissions Reduction Provide shuttle service to public transportation.	*Consistent* Shuttle service to public transportation would be unnecessary as the project site is located near Foothill Transit Line 492.
Solid Waste and Energy Emissions	
Solid Waste Reduction Strategy Project construction shall require reuse and recycling of construction and demolition waste.	*Consistent* The project will comply with the California Department of Resources Recycling and Recovery (CalRecycle) Sustainable (Green) Building Program regulations whereby at least 60% of all demolition and construction materials (including, but not limited to, soil, mulch, vegetation, concrete, lumber, metal, and cardboard) shall be recycled/reused
Water Use Efficiency Require measures that reduce the amount of water sent to the sewer system—see examples in CAT standard above. Reduction in water volume sent to the sewer system means less water has to be treated and pumped to the end user, thereby saving energy.	*Consistent* The proposed project would be required to comply with Chapter 13.15 of the City's Municipal Code that establishes water conservation, use, and restrictions. The project proposes to utilize site design and landscape palettes to conserve a significant amount of water and reduce runoff. Additionally, proposed facilities would be equipped with low-flow plumbing fixtures, reducing water use in accordance with CalGreen standards.
Land Use Measures, Smart Growth Strategies and Carbon Offsets	
Smart Land Use and Intelligent Transportation Systems Encourage mixed-use and high density development to reduce vehicle trips, promote alternatives to vehicle travel, and promote efficient delivery of services and goods.	*Consistent* The project would result in an increase in land use density on the project site. However, Damien High School is not projecting an increase in student enrollment or faculty/staff throughout the life of the Master Plan. Therefore, no increase in land use or development intensity, and no potential cumulative overburdening of community infrastructure and service capacity, is expected to occur.
Smart Land Use and Intelligent Transportation Systems Require pedestrian-only streets and plazas within the project site and destinations that may be reached conveniently by public transportation, walking or bicycling.	*Consistent* The Grand Promenade would separate pedestrian and vehicular circulation by placing vehicles along the perimeter of campus while facilitating pedestrian circulation through the center of campus where the academic, administrative, and athletic facilities are primarily located. The Grand Promenade would link the north and south ends of the campus and create gathering areas, quads, and a plaza along the gymnasium frontage, which would set the stage for development and improvements on both sides of the pedestrian connection

Source: Pages 2 through 4. *The California Environmental Quality Act Addressing Global Warming Impacts at the Local Agency Level.* State of California Department of Justice. February 2008.

The initiatives, EO, and strategies outlined above comprise the major milestones in California's efforts to address climate change through coordinated action on climate research, GHG mitigation, and climate change adaptation. Numerous other related efforts have been undertaken by State agencies and departments to address specific questions and programmatic needs. The Climate Action Team coordinates these efforts and others, which constitute the California Climate Adaptation Strategy. As indicated in Tables I and J, the proposed Master Plan Update would be consistent with the CAT strategies and 2008 Attorney General Greenhouse Gas Reduction Measures, and the project would not conflict with applicable plans, policies, or regulations adopted for the purpose of reducing the emissions of GHGs. Impacts would be **less than significant**, and no mitigation is required.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
VIII. Hazards and Hazardous Materials				
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☒	☐	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☒	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within ¼ mile of an existing or proposed school?	☐	☒	☐	☐
d) Be located on a site which is included on a list of hazardous material 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?	☐	☐	☐	☒
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 for people residing or working in the project area?	☐	☐	☒	☐

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
VIII. Hazards and Hazardous Materials				
Would the project:				
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☒	☐
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐

Discussion

a) Potentially Significant Unless Mitigation Incorporated. The Master Plan Update does not propose a specific development project; it does, however, propose a framework under which specific development projects will be planned, designed, and executed under future phases of implementation in order to improve and expand campus facilities. As a high school campus with educational, administrative, and athletic uses, future development projects may include the transport, use, or disposal of hazardous materials.

Demolition/Construction. The Master Plan Update is divided into three phases, each of which contains potential projects. At full build-out, the Master Plan Update proposes demolition of the existing 5,972 sf cafeteria facility, construction of four new buildings totaling approximately 73,100 sf of new building space, as well as several alterations to select hardscaped areas and parking lots.

The existing 5,972 sf cafeteria facility was constructed in 1967.[34] Structures constructed prior to 1978 may contain lead-based materials (LBM) as well as asbestos-containing materials (ACM) incorporated into various construction components including paint, roof tiles, and thermal insulation. Current federal and State regulations (SCAQMD Rule 1403) require all contractors be properly trained in the correct handling of ACM during any repair, removal, or demolition activities to buildings or structures containing ACM. Additionally, the California Occupational Safety and Health Administration requires that all workers be properly protected when working with materials containing lead levels at or above 0.06 milligram per square centimeter (mg/cm^2)

[34] *Historic Resources Survey for Damien High School.* Page 10. Teamen, Janet and Lauren Weiss Bricker. December 28, 1998.

or 600 parts per million pursuant to Code of Federal Regulations Chapter 29, Section 1926.62 and Title 8, CCR Section 1532.1. If the existing cafeteria facility contains LBM and/or ACM, demolition activities may create a significant hazard to the public or the environment through the routine disposal of hazardous materials. Therefore, mitigation is required.

Mitigation Measures

MM HAZ-1 A lead-based materials (LBM) and asbestos-containing materials (ACM) survey shall be completed for renovation or demolition of all structures constructed prior to 1978. If the ACM survey is negative and if the LBM survey reveals lead levels below 0.06 milligram per square centimeter or 600 parts per million pursuant to Code of Federal Regulations Chapter 29, Section 1926.62 and Title 8, California Code of Regulations Section 1532.1, no further survey or remedial work is required. However, if ACM are identified within structures proposed for renovation or demolition, **Mitigation Measure HAZ-2** shall apply. Furthermore, if lead levels at or above 0.06 milligram per square centimeter or 600 parts per million are identified, **Mitigation Measure HAZ-3** shall apply. This measure shall be implemented to the satisfaction of the City of La Verne Community Development Director or designee, and/or Building and Safety Division, or designee.

MM HAZ-2 Prior to the renovation or demolition of any structure identified to contain asbestos-containing materials (ACM), all ACM shall be abated from the demolition site. An Asbestos Notification shall be prepared and submitted to the South Coast Air Quality Management District (SCAQMD) for approval before any asbestos abatement may commence. An asbestos report shall be provided to the City prior to the issuance of a demolition permit. The contractor shall provide a construction and demolition plan with disposal tickets from an SCAQMD-approved disposal facility and air clearances prior to final inspection. This measure shall be implemented to the satisfaction of the City of La Verne Community Development Director or designee, and/or Building and Safety Division, or designee.

MM HAZ-3 Prior to the renovation or demolition of any structure identified to contain lead-based materials (LBM), all LBM shall be abated from the demolition site. A lead report shall be provided to the City prior to the issuance of a demolition permit. The contractor shall provide a construction and demolition plan with disposal tickets from an SCAQMD-approved disposal facility and air clearances prior to final inspection. This measure shall be implemented to the satisfaction of the City of La Verne Community Development Director or designee, and/or Building and Safety Division, or designee.

With implementation of **Mitigation Measures HAZ-1** through **HAZ-3**, hazards to the public and the environment from renovation or demolition of structures containing asbestos and/or lead would be reduced to **less than significant with mitigation incorporated**.

Potential hazardous materials such as fuel, paint products, lubricants, solvents, and cleaning products may be used and/or stored on site during construction of future development projects proposed under the Master Plan Update. These materials are typical of materials delivered to construction sites. Due to the relatively small scale of anticipated development projects under

the Master Plan Update, only limited quantities of these materials are expected to be used during construction, so they are not considered hazardous to the public at large.

The transport, use, and storage of hazardous materials during construction will be regulated by the Los Angeles County Fire Department, the City of La Verne Fire Department, and the California Occupational Safety and Health Administration. Additionally, the United States Department of Transportation Office of Hazardous Materials Safety prescribes strict regulations for the safe transportation of hazardous materials by truck and rail on State highways and rail lines, as described in Title 49 of the *Code of Federal Regulations*, and implemented by Title 13 of the CCR.

Operation. Campus operations and maintenance currently utilize relatively small amounts of hazardous materials, such as chemicals associated with laboratory research, heating and cooling system fluids, fuel for maintenance equipment, solvents, cleaning products, pesticides/ fertilizers, asbestos used in building materials, and other similar chemicals. These materials are substantially similar to household chemicals and solvents already in general and wide use throughout the City and in the vicinity of the project site.

As is the case during construction, the transport, use, and storage of hazardous materials during operation and maintenance of the campus will be regulated by the Los Angeles County Fire Department, the City of La Verne Fire Department, and the California Occupational Safety and Health Administration. Additionally, transport of hazardous materials by truck and rail on State highways and rail lines will be regulated by the United States Department of Transportation Office of Hazardous Materials Safety as described above.

The project would develop a Hazardous Materials Business Emergency Plan administered by the City of La Verne Fire Department, as applicable, in accordance with California Health and Safety Code Section 25507 and other local, State, and federal standards, ordinances, and regulations. As required by Health and Safety Code Section 25507, a business shall establish and implement a Hazardous Materials Business Emergency Plan for emergency response to a release or threatened release of a hazardous material in accordance with the standards prescribed in the regulations adopted pursuant to Section 25503 if the business handles a hazardous material or a mixture containing a hazardous material that has a quantity at any one time above the thresholds described in Section 25507(a) (1) through (6).

The project would also be required to implement health and safety policies and procedures regarding hazardous materials used where employees and students would be expected to handle or work around hazardous materials. Pursuant to the Federal Hazard Communication Standard (29 CFR 1910.1200) and the Laboratory Standard (29 CFR 1910.1450), Safety Data Sheets (SDS) outlining procedures to address spills and leaks for individual chemicals will be used to conduct chemical safety training for all faculty and students who work with chemicals in order to minimize the occurrence of accidental chemical releases and ensure that, when one does occur, it is handled in a safe manner.

These regulations inherently safeguard life and property from the hazards of fire/explosion arising from the storage, handling, and use of hazardous substances, materials, and devices, as well as hazardous conditions due to the use or occupancy of buildings. Through implementation of **Mitigation Measures HAZ-1** through **HAZ-3** for the renovation and/or demolition of on-site structures constructed prior to 1978, as well as compliance with all applicable federal, state, and local laws for every future development proposed pursuant to the Master Plan Update, impacts

to the public or environment from the routine transportation, use and disposal of hazardous materials would be reduced to **less than significant with mitigation incorporated**.

b) Potentially Significant Unless Mitigation Incorporated. The project site and a one-half-mile radius encompassing the project site were evaluated via the State Water Resources Control Board (SWRCB) GeoTracker database,[35] the Department of Toxic Substances Control's (DTSC) EnviroStor database,[36] and the Hazardous Waste and Substances Sites (Cortese) List[37] for the purposes of identifying recognized environmental conditions or historical recognized environmental conditions.

"Recognized environmental condition" 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. The term is not intended to include *de minimis* conditions that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be *de minimis* are not recognized environmental conditions. "Historical Recognized environmental condition" means an environmental condition which in the past would have been considered a *recognized environmental condition*, but which may or may not be considered a *recognized environmental condition* currently. If a past release of any *hazardous substances* or *petroleum products* has occurred in connection with the *property*, with such remediation accepted by the responsible regulatory agency (for example, as evidenced by the issuance of a case closed letter or equivalent), this condition shall be considered a *historical recognized environmental condition*.

Based on historical records,[38] the southern portion of the project site was used as an orchard from the early 1900s through the 1950s. Since at least 1964, however, no agricultural activities have occurred on the project site, and all portions of the project site have been occupied as a high school since the 1960s. Groves/orchards during this timeframe are known to have used pesticides, including those containing persistent compounds such as lead and arsenic. No information was obtained indicating evidence of improper storage, disposal, or application of these materials, and a review of available aerial photographs did not show improvements such as hangers, tanks, or large barns that would indicate significant storage, formulation, and handling of these materials. Based on this information, the time lapse since agricultural uses occurred on the project site, and the historical occupancy of the project site as a high school, there is no evidence of recognized environmental conditions in connection with previous agricultural uses at the project site. However, three properties with recognized environmental conditions and three properties with historical recognized environmental conditions were identified within one-half-mile of the project site, as detailed in Table K.

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35 *GeoTracker Database.* State Water Resources Control Board. https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=l+averne%2C+ca (Accessed July 18, 2018).

36 *EnviroStor Database.* California Department of Toxic Substances Control. https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=la+verne%2C+ca (Accessed July 18, 2018).

37 *Hazardous Waste and Substances Site List (Cortese).* California Department of Toxic Substances Control. https://www.envirostor.dtsc.ca.gov/public/search?cmd=search&reporttype=CORTESE&site_type=CSITES,OPEN,FUDS,CLOSE&status=ACT,BKLG,COM,COLUR&reporttitle=HAZARDOUS+WASTE+AND+SUBSTANCES+SITE+LIST+(CORTESE) (Accessed July 18, 2018).

38 *Historic Aerials by NETRONLINE.* Aerial photographs dated 1953 and 1964 of the Damien High School Campus, La Verne, California. Nationwide Environmental Title Research, LLC. 2018. https://www.historicaerials.com/viewer (Accessed July 18, 2018).

Table K: Hazardous Materials Database Search

Property	Recognized Environmental Condition	Historical Recognized Environmental Condition	Location Relative to the Project Site	Status of the Property
Victor Graphics, Inc. (1330 Arrow Highway, La Verne)	Spills, Leaks, Investigation and Cleanup for Other Chlorinated Hydrocarbons, Tetrachloroethylene, and Trichloroethylene	—	Approximately 550 feet to the south down gradient of the project site	Open-Assessment and interim remedial action is occurring at the property and additional activities such as site characterization, investigation, risk evaluation, and/or site conceptual model development are occurring.
United Production Service/ Occidental Petroleum (1855 Carrion Road, La Verne)	Spills, Leaks, Investigation and Cleanup for Other Chlorinated Hydrocarbons, Tetrachloroethylene, and Trichloroethylene	—	Approximately 900 feet to the south down gradient of the project site	Open-Approved remediation has been selected for the impacted media at the property, and the responsible party is implementing one or more remedy under an approved cleanup plan for the property. This includes any ongoing remedy that is either passive or active, or uses a combination of technologies. For example, a property implementing only a long-term groundwater monitoring program, or a "monitored natural attenuation" remedy without any active groundwater treatment as part of the remedy, is considered an open case under remediation until site closure is completed.
Synthane Taylor (1440 Arrow Highway, La Verne)	Leaking underground storage tank for which potential contaminants of concern are not specified.	—	Approximately 1,100 feet to the south down gradient of the project site	Open-Inactive; no regulatory oversight activities are being conducted at the property.
76 Products Station #5039 (1025 Bonita Avenue, La Verne)	—	Leaking underground storage tank for "other solvent or non-petroleum hydrocarbon."	Approximately 120 feet to the northwest up gradient of the project site	Completed-Case closed as of 03/08/2006. A closure letter or other formal closure decision document has been issued for the property.
Owen OR Opal Lewis (900 Bonita Avenue, La Verne)	—	Leaking underground storage tank for "gasoline."	Approximately 400 feet to the west cross gradient of the project site	Completed-Case closed as of 11/03/1994. A closure letter or other formal closure decision document has been issued for the property.
Exxon #7-4826 (655 Bonita Avenue, San Dimas)	—	Leaking underground storage tank for "gasoline."	Approximately 1,900 feet to the west down gradient of the project site	Completed-Case closed as of 09/20/1993. A closure letter or other formal closure decision document has been issued for the property.

Sources: *GeoTracker Database.* State Water Resources Control Board. https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=l+averne%2C+ca (Accessed July 18, 2018).
EnviroStor Database. California Department of Toxic Substances Control. https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=la+verne%2C+ca (Accessed July 18, 2018).
Hazardous Waste and Substances Site List (Cortese). California Department of Toxic Substances Control. https://www.envirostor.dtsc.ca.gov/public/search?cmd=search&reporttype=CORTESE&site_type=CSITES,OPEN,FUDS,CLOSE&status=ACT,BKLG,COM,COLUR&reporttitle=HAZARDOUS+WASTE+AND+SUBSTANCES+SITE+LIST+(CORTESE) (Accessed July 18, 2018).

As detailed in Table K, three properties with recognized environmental conditions were identified within one-half-mile of the project site. The Synthane Taylor property (1440 Arrow Highway, La Verne) is reported to contain a leaking underground storage tank for which potential contaminants of concern are not specified and has an open-inactive case with no regulatory oversight activities conducted at the property. However this property is located approximately 1,100 feet to the south and down gradient of the project site, so past operations at this location are unlikely to have adversely affected the project site.

The Victor Graphics, Inc. (1330 Arrow Highway, La Verne) and the United Production Service/ Occidental Petroleum (1855 Carrion Road, La Verne) properties have active, open cases under investigation by the RWQCB. There are known soil and groundwater releases at these facilities, and Remedial Plans have been prepared for both properties. According to the most recent groundwater monitoring report, the Victor Graphics facility contamination plume in groundwater may be commingled with the adjacent Occidental Petroleum facility, so groundwater monitoring activities are coordinated for the two facilities. According to the groundwater monitoring report, the groundwater contamination plume at the former Victor Graphics facility is confined to the southeastern portion of the property, is defined, and is relatively stable, while the groundwater contamination plume at the adjacent Occidental Petroleum facility flows off site onto southern and western properties, with highest concentrations detected along the southern property boundary and at the northeast corner, adjacent to the Victor Graphics facility.[39] Since the Victor Graphics, Inc. and the United Production Service/Occidental Petroleum properties are located respectively 550 feet and 900 feet to the south and down gradient of the project site, and the groundwater monitoring report concludes that groundwater flows toward the southwest (away from the Damien High School campus), surrounding land uses have little potential to result in recognized (vapor) environmental conditions at the project site, and past operations at the Victor Graphics, Inc. and the United Production Service/Occidental Petroleum properties are unlikely to have adversely affected the project site.

Three properties with historical recognized environmental conditions also were identified within one-half-mile of the project site. As detailed in Table K, all three properties are gasoline stations with reported leaking underground storage tanks that have been remediated. All three properties have a completed-case closed status for which a closure letter or other formal closure decision document has been issued. Additionally, none of these gasoline stations remains in operation and all three properties have since been redeveloped into retail and professional office uses. Based on the issuance of a case closed letter by the responsible regulatory agency, past operations at these locations are unlikely to have adversely affected the project site.

A review of the Hazardous Waste and Substances Sites (Cortese) List revealed no properties in La Verne or neighboring San Dimas are listed. The nearest property listed on the Cortese List is the A Z Decasing Company (1420 South Signal Drive, Pomona) approximately 5.2 miles to the southeast and downgradient of the project site. Based on the distance and location (down gradient) of this facility, past operations at this location are unlikely to have adversely affected the project site.

[39] *Fall 2016 Groundwater Monitoring Report – Former Victor Graphics Property, 1330 Arrow Highway, La Verne, California.* CDM Smith, Inc. October 14, 2016.

None of the properties identified in the GeoTracker database, EnviroStor database, or the Cortese List occurs on the project site or has any activities or materials that would represent a significant risk to public health or safety (e.g., on-site storage, leaking tanks, approaching groundwater contamination plume) on the project site. The project site does not currently contain any recognized environmental conditions or historical recognized environmental conditions, nor is it subject to vapor migration from any on-site or off-site sources. Implementation of **Mitigation Measures HAZ-1** through **HAZ-3** for the renovation and/or demolition of on-site structures constructed prior to 1978, as well as compliance with local, state, and federal laws detailed in response to Checklist Question VIII.a, would ensure impacts from reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment remain **less than significant with mitigation incorporated**.

c) Potentially Significant Unless Mitigation Incorporated. The schools closest to the proposed project site are the project site itself (i.e., Damien High School), the David & Margaret Youth and Family Services/Joan Macy School (1350 3rd Street, La Verne) adjacent to the east of the project site, and the Holy Name of Mary School (124 S San Dimas Canyon Road, San Dimas) located approximately 0.17 mile west of the project site.

As detailed in response to Checklist Question VIII.a, the transport, use, and storage of hazardous materials during construction, operation, and maintenance of the campus will be regulated by the Los Angeles County Fire Department, the City of La Verne Fire Department, and the California Occupational Safety and Health Administration. Additionally, the United States Department of Transportation Office of Hazardous Materials Safety prescribes strict regulations for the safe transportation of hazardous materials by truck and rail on State highways and rail lines, as described in Title 49 of the *Code of Federal Regulations*, and implemented by Title 13 of the CCR.

The project would develop a Hazardous Materials Business Emergency Plan administered by the City of La Verne Fire Department, as applicable, in accordance with California Health and Safety Code Section 25507 and other local, State, and federal standards, ordinances, and regulations. As required by Health and Safety Code Section 25507, a business shall establish and implement a Hazardous Materials Business Emergency Plan for emergency response to a release or threatened release of a hazardous material in accordance with the standards prescribed in the regulations adopted pursuant to Section 25503 if the business handles a hazardous material or a mixture containing a hazardous material that has a quantity at any one time above the thresholds described in Section 25507(a) (1) through (6).

The project would also be required to implement health and safety policies and procedures regarding hazardous materials used where employees and students would be expected to handle or work around hazardous materials. Pursuant to the Federal Hazard Communication Standard (29 CFR 1910.1200) and the Laboratory Standard (29 CFR 1910.1450), Safety Data Sheets (SDS) outlining procedures to address spills and leaks for individual chemicals will be used to conduct chemical safety training for all faculty and students who work with chemicals in order to minimize the occurrence of accidental chemical releases and ensure that, when one does occur, it is handled in a safe manner.

These regulations inherently safeguard life and property from the hazards of fire/explosion arising from the storage, handling, and use of hazardous substances, materials, and devices, as well as hazardous conditions due to the use or occupancy of buildings. Furthermore, none of the

land uses identified in the GeoTracker database, EnviroStor database, or the Cortese List occurs on the project site or has any activities or materials that would represent a significant risk to public health or safety (e.g., on-site storage, leaking tanks, approaching groundwater contamination plume) on the project site. The project site does not currently contain any recognized environmental conditions or historical recognized environmental conditions, nor is it subject to vapor migration from any on-site or off-site sources. Implementation of **Mitigation Measures HAZ-1** through **HAZ-3** for the renovation and/or demolition of on-site structures constructed prior to 1978, as well as compliance with all applicable federal, State, and local laws for every future development proposed pursuant to the Master Plan Update, would ensure impacts from the emission or handling of hazardous materials within one-quarter mile of an existing or proposed school would be reduced to **less than significant with mitigation incorporated**.

d) No Impact. Pursuant to Government Code Section 65962.5, the Hazardous Waste and Substances Sites List has been compiled by the California Environmental Protection Agency Hazardous Materials Data Management Program. The DTSC compiles information from subsets of the following databases to make up the Cortese List:

1. The DTSC list of contaminated or potentially contaminated hazardous waste sites listed in the California Sites database, formerly known as ASPIS, is included;
2. The California State Water Resources Control Board listing of leaking underground storage tanks is included; and
3. The California Integrated Waste Management Board list of sanitary landfills that have evidence of groundwater contamination or known migration of hazardous materials (formerly WB-LF, now AB 3750).

A review of the Hazardous Waste and Substances Sites (Cortese) List revealed no properties in La Verne or neighboring San Dimas are listed. The nearest property listed on the Cortese List is the A Z Decasing Company (1420 South Signal Drive, Pomona) approximately 5.2 miles to the southeast and downgradient of the project site. Based on the distance and location (down gradient) of this facility, past operations at this location are unlikely to have adversely affected the project site.

As detailed in Table K, three properties with recognized environmental conditions and three properties with historical recognized environmental conditions were identified within one-half-mile of the project site. However, the analysis provided in response to Checklist Question VIII.b concludes none of the land uses identified in Table K occurs on the project site or has any activities or materials that would represent a significant hazard to the public or environment at the project site. Therefore, **no impact** related to the Cortese List or other governmental databases would occur. No mitigation is required.

e, f) Less than Significant Impact. The Brackett Field Airport, a general aviation airport, is located approximately 0.6 mile south of the project site. Damien High School is located within Zone E of the Brackett Field Airport Land Use Compatibility Plan (BFALUCP).[40] Within Zone E, institutional uses such as children's schools grades 9–12 are normally compatible and are presumed to comply with safety and airspace protection criteria. Additionally, the BFALUCP identifies the

[40] *Brackett Field Airport Land Use Compatibility Plan.* Map 2A, Compatibility Policy Zones. Los Angeles County Airport Land Use Commission. Adopted December 9, 2015.

project site within Federal Aviation Administration (FAA) Part 77 Notification Area.[41] The risk level is considered low for normally compatible uses within Zone E.

Any development application submitted under the proposed Master Plan Update would be subject to Community Development Director or designee review and approval prior to issuance of grading and building permits to ensure consistency with Compatibility Zone E of the BFALUCP and FAA Part 77. Within Zone E, object height limits are established at 150 feet or more above runway elevation,[42] which is 966 feet above mean sea level (amsl) at its lowest point. The highest elevation of the project site grade is 1,053 feet amsl. Therefore any new facilities 63 feet or taller[43] would require site-specific airspace review by the Los Angeles County Airport Land Use Commission (ALUC).

FAA Part 77, Subpart B requires notification to the FAA of any proposed construction or alteration having a height greater than an imaginary surface extending 100 feet outward and 1 foot upward (slope of 100:1) for a distance of 20,000 feet from nearest point of any runway more than 3,200 feet in actual length, and also requires FAA notification for construction of any object taller than 200 feet.[44]

Development proposed under the Master Plan Update on the project site is located as close as 3,800 feet north of the nearest runway of the Brackett Field Airport. Therefore, any development on the project site equal to or greater than 38 feet in height (equal to a slope of 100:1 in relation to the distance to the nearest runway) would require notification to the FAA. None of the facilities proposed under the master Plan Update would exceed 37 feet above surface grade at their tallest point (i.e., roof-top parapet). Therefore, none of the proposed facilities would require ALUC review or notification to the FAA for height restrictions. However, in accordance with Sections 1.2.22a (Major Land Use Action) and 1.4.2b (Mandatory Referral of Certain Land Use Actions) of the BFALUCP, the proposed Master Plan Update and subsequent development application for the 400-seat Performing Arts Center anticipated under Phase 3 of the Master Plan Update would require review and approval by the ALUC (for indoor assembly facility with a capacity of at least 300 people) to ensure consistency with the BFALUCP (**Standard Condition HAZ-1**).[45]

Standard Condition: No mitigation is required; however, the following Standard Condition is regulatory policy required for all developments that include indoor assembly facilities with a capacity of at least 300 people within the jurisdiction of the BFALUCP. Implementation shall occur as a routine action conditioned by the City La Verne to ensure impacts related to safety hazards from a project within an airport land use plan remain less than significant.

Standard Condition HAZ-1: Prior to issuance of building permits for the development of the 400-seat Performing Arts Center, the project applicant shall provide evidence to the City of La Verne that the proposed Master Plan Update and subsequent development application

41 *Ibid.* Map 2B, Airspace Protection Map.

42 *Ibid.* Table 2B, Compatibility Zone Delineation.

43 Highest elevation of project site grade 1,053 feet subtracted by lowest elevation of airport runway 966 feet = 87 feet difference in elevation between the project site and runway. 150-foot object height limit in Zone E subtracted by 87-foot difference in elevation between the project site and runway = 63-foot building height threshold for notification to Los Angeles County Airport Land Use Commission (63-foot building height plus 87-foot difference in elevation between the project site and runway = 150-foot object height limit threshold).

44 *§ 77.9(a)(1) Construction or Alteration Requiring Notice.* 14 Code of Federal Regulations 77.9 - Construction or Alteration Requiring Notice. https://www.law.cornell.edu/cfr/text/14/77.9 (Accessed June 19, 2018).

45 Pursuant to California Public Utilities Code Section 21676 (Airport Land Use Commission).

for the 400-seat Performing Arts Center is submitted to the Los Angeles County Airport Land Use Commission (ALUC) for review and approval in accordance with Sections 1.2.22a (Major Land Use Action) and 1.4.2b (Mandatory Referral of Certain Land Use Actions) of the Brackett Field Airport Land Use Compatibility Plan for indoor assembly facilities with a capacity of at least 300 people. Any project-specific conditions imposed by the ALUC shall be implemented as applicable during design of the Performing Arts Center pursuant to California Public Utilities Code Section 21676 (Airport Land Use Commission) and verified by the La Verne Community Development Director or designee prior to issuance of building permits. This condition shall be implemented to the satisfaction of the City Community Development Director or designee.

Pursuant to California Public Utilities Code Section 21676 (Airport Land Use Commission), any project-specific conditions imposed by the ALUC must be implemented as applicable and will be reviewed and confirmed by the La Verne Community Development Director or designee in accordance with Chapter 18.16 (Development Review) and Chapter 18.60 (institutional Zone) of the La Verne Municipal Code so that execution of projects proposed under the Master Plan Update would occur in accordance with the BFALUCP. Through implementation of **Standard Condition HAZ-1**, impacts from safety hazards to people residing or working in the project area from a project within an airport land use plan would be **less than significant.** No mitigation is required.

g) Less than Significant Impact. The proposed project would be required to design, construct, and maintain structures, roadways, and facilities in accordance with applicable standards governing vehicular access, resulting in the provision of adequate vehicular access that would provide for adequate emergency access and evacuation. Demolition and construction activities that may temporarily restrict vehicular traffic would be required to implement adequate and appropriate measures to facilitate the passage of persons and vehicles through/around any required road closures.

Currently passenger and emergency vehicle traffic is facilitated through the center of campus between the two major roadways abutting the project site (i.e., Damien Avenue and Bonita Avenue) via a two-way, 22-foot-wide utility roadway with red-painted curbs. The Master Plan Update reorganizes the on-site parking and brings the parking areas into compliance with the City standard stall size (9 feet by 19 feet) with 25-foot back-up clearance. The 73-space parking lot east of the existing Event Center, currently located near the center of the campus, will be replaced by a new 118-space parking lot located south of the Gymnasium near the intersection of Damien Avenue and Palomares Avenue. This reconfiguration of on-campus parking will eliminate passenger vehicle access through the center of campus via the utility roadway, which will be designated for only emergency vehicles to ensure unobstructed access for first responders, and it also will help separate pedestrians from motorists, thus creating a much safer environment for students and other on-campus pedestrians.

The proposed circulation network and parking lot reconfiguration would be subject to review and approval by the City Fire and Police Departments, City Traffic Engineer, and Public Works Department during the City's precise plan review process. Although no specific development

proposal or site plan has been submitted to the City to date, any development application under the proposed Master Plan Update would be subject to Community Development Director or designee review and approval prior to issuance of grading and building permits in accordance with Section 18.60.030 and Chapter 18.16 (Development Review) of the City Municipal Code to ensure adequate first response in the event of an emergency. Adherence to these measures would result in a **less than significant impact** related to emergency access for the project**.** No mitigation is required.

h) Less than Significant Impact. The project site is not located within a Fire Hazard Area or within an area susceptible to wildfires identified by Los Angeles County.[46] The project site is developed with a high school campus and no wildlands are located adjacent to the project site. Surrounding uses include residential uses to the north, northeast, and west, institutional uses to the southeast, and the industrial uses to the south. Nevertheless, the design and construction of all on-campus buildings must conform to City Fire Code Section 15.32.10 of the Municipal Code, which requires compliance with the International Fire Code. Compliance would be verified through the building plan check process pursuant to Section 18.60.030 and Chapter 18.16 (Development Review) of the City Municipal Code prior to issuance of building permits. Because of the low probability that the project site would be subject or susceptible to wildland fires, impacts related to this issue would be **less than significant.** No mitigation is required.

	Potentially Significant Impact	**Potentially Significant Unless Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
IX. Hydrology and Water Quality				
Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering or the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐

[46] *Very High Fire Hazard Severity Zone in LRA*, CalFire, Los Angeles County, September 2011.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
IX. Hydrology and Water Quality				
Would the project:				
d) Substantially alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☒	☐
j) Expose people or structures to inundation by seiche, tsunami, or mudflow?	☐	☐	☒	☐

Discussion

a) Less than Significant Impact. In accordance with the Clean Water Act, any development application under the proposed Master Plan Update that would involve over one acre of ground disturbance would be subject to National Pollution Discharge Elimination System (NPDES) requirements and must implement a Storm Water Pollution Prevention Plan (SWPPP) during construction. The City regulates storm water discharge in accordance with the NPDES permit through Chapter 13.50 of the Municipal Code. Pursuant to Section 13.50.093 of the City

Municipal Code, a Standard Urban Storm Water Mitigation Plan for Municipal Storm Water and Urban Runoff Management Programs in Los Angeles County (SUSMP) would be required during operation of future development projects proposed under the Master Plan Update for the following applicable categories:

1. Ten or more unit homes including single-family homes, multifamily homes, condominiums, and apartments.
2. One hundred thousand or more square feet of impervious surface area industrial/ commercial development.
3. Restaurants.
4. Parking lots 5,000 square feet or more of surface area or with 25 or more parking spaces.

5 Redevelopment projects that result in the creation, addition, or replacement of 5,000 square feet or more of impervious surface area on an already developed site.

6 Projects located in or adjacent to or discharging directly to an environmentally sensitive area if the development would create 2,500 or more square feet of impervious area and would discharge storm water or urban runoff likely to affect a sensitive biological species or habitat.

The Master Plan Update does not propose a specific development project; it does, however, propose a framework under which specific development projects will be planned, designed, and executed under future phases of implementation in order to improve and expand campus facilities. Any future development application under the proposed Master Plan Update would be subject to the City of La Verne's Community Development Department review and approval prior to issuance of grading and building permits in accordance with Section 18.60.030 and Chapter 18.16 (Development Review) of the City of La Verne's Municipal Code.

As an existing high school campus with educational, administrative, and athletic uses, site-specific clearing and grading phases of future development projects may disturb vegetation and surface soils, potentially resulting in erosion and sedimentation. If left exposed and with no vegetative cover, a project site's bare soil could be subject to additional wind and water erosion.

The City is a co-permittee under the Los Angeles Regional Water Quality Control Board (LARWQCB) NPDES Permit No. CAS004001, as amended, also known as the Municipal Separate Storm Sewer System or MS4 permit. Any future development projects involving over one acre of ground disturbance would require coverage under an NPDES permit, including the submittal of a Notice of Intent (NOI) application to the State Water Resources Control Board (SWRCB), the receipt of a Waste Discharge Identification Number from SWRCB, and the preparation of an SWPPP for construction discharges.

An SWPPP is a written document that describes the construction operator's activities to comply with the requirements in the NPDES permit. The SWPPP is intended to facilitate a process whereby the developer evaluates potential pollutant sources at the site and selects and implements BMPs designed to prevent or control the discharge of pollutants in storm water runoff. During the demolition phase and during any future construction phase, the project would use a series of BMPs to reduce erosion and sedimentation. These measures may include the use of gravel bags, silt fences, hay bales, check dams, hydroseed, and soil binders. The demolition and construction contractor(s) would be required to operate and maintain these

controls throughout the duration of on-site activities pursuant to City Municipal Code Section 13.50.150. In addition, the construction contractor(s) would be required to maintain an inspection log and have the log on site to be reviewed by the City and representatives of the LARWQCB. Implementation of site-specific BMPs, as established by the SWPPP, would ensure all impacts related to erosion and sedimentation from ground disturbance are less than significant.

As previously stated, the 25.8-acre project site is developed as an existing high school campus with educational, administrative, and athletic uses. Approximately 65 percent (16.8 acres) of the overall project site comprises impermeable surfaces, while 35 percent (9 acres) consists of unpaved, permeable surfaces. Urban runoff currently sheet flows southwesterly onto Damien Avenue and Palomares Avenue where it enters the City's storm drains and flows into a fully improved, concrete-lined flood control channel approximately 1,000 feet west of the project site and discharges into Live Oak Creek, Puddingstone Reservoir, and ultimately the Pacific Ocean.

The project site is located within the Upper San Gabriel River Watershed. Only one waterbody within the City, San Jose Creek Reach 2, is listed under the Clean Water Act 303(d) as impaired and/or threatened by coliform bacteria.[47] Live Oak Creek is not listed as an impaired waterbody, so the project does not include any 303(d) pollutants of concern.

New development is required to meet or exceed pre-project conditions for storm water discharge, and future projects proposed under the Master Plan Update would be required to retain any additional runoff on site and discharge it into the storm drain system at rates that do not exceed pre-project conditions. For each development project proposed under the Master Plan Update, an SUSMP would be required if the proposed development application would include parking lots of 5,000 square feet or more of surface area (or with 25 or more parking spaces) or for future developments resulting in the creation, addition, or replacement of 5,000 square feet or more of impervious surface area on an already developed site pursuant to Section 13.50.093 of the City Municipal Code. The SUSMP would be required to be incorporated by reference or attached to a project's SWPPP as the Post-Construction Management Plan.

SUSMPs include BMPs for source control, pollution prevention, site design, low impact development (LID) implementation, and structural treatment control. Various techniques may be implemented by future development projects to mitigate potential storm water impacts. For example, a combination of structural and non-structural source controls may be used to reduce the discharge of pollutants and the effects of changes to runoff patterns that can be caused by the proposed developments. Projects may limit the introduction of pollutants to storm water by locating trash enclosures within covered building structures and covering parking stalls. Signs, educational materials for faculty, staff, and students, employee training, activity restrictions, and other non-structural source controls may be implemented in order to educate people about storm water pollution and potentially reduce activities that lead to polluted runoff.

Section 13.50.150 of the City Municipal Code requires that all BMPs required as a condition of any approval for construction activity shall be maintained in full force and effect during the term of the project, unless otherwise authorized by the authorized enforcement officer, the Community Development Director or designee or Building Official.

[47] *Final 2014/2016 California Integrated Report (Clean Water Act Section 303(d) List and 305(b) Report) for Impaired Waterbodies.* California Environmental Protection Agency, State Water Resources Control Board. https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml (Accessed July 19, 2018).

BMPs are defined in Section 13.60.040 of the City Municipal Code as:

> *…practices or physical devices or systems designed to prevent or reduce pollutant loading from storm water or non-storm water discharges to receiving waters, or designed to reduce the volume of storm water or non-storm water discharged to the receiving water.*

BMPs are also defined in Section 13.50.010 of the City Municipal Code as:

> *…storm water and urban runoff pollution control practices designed to reduce the pollutants contained in discharges to receiving waters or subsurface groundwaters.*

Section 13.60.110 of the City Municipal Code states that:

> *…a maintenance covenant is required for all projects on private property and shall be submitted to the city for review by the city engineer and designee, and if necessary, city attorney. The designers may select any combination of storm water BMPs which meet the performance standards provided in this section and identified in the Los Angeles County Municipal Storm Water Permit No. R4-2012-0175 and any amendment, revision, or reissuance thereof. A formal maintenance plan shall be included in the maintenance covenant.*

Implementation of the proposed Master Plan Update would not result in direct wastewater discharge and would not affect the City's compliance with SWRCB treatment requirements. Pursuant to Chapter 13.60 (Low Impact Development) of the City of La Verne's Municipal Code, future Master Plan development would be required to demonstrate adequate drainage systems, and would be conditioned to comply with applicable NPDES, SWPPP, SUSMP, and Urban Runoff Management Program requirements to ensure that water quality is maintained to federal, State, and local standards. Proper engineering design and construction in conformance with the requirements of the City, the intent of the NPDES Permit for Los Angeles County and the incorporated cities of Los Angeles County (MS4 permit), SWRCB treatment requirements, and project-specific recommendations outlined in SUSMPs are routine actions conditioned by the City. Accordingly, the following City Standard Conditions are required for the proposed project to ensure impacts remain less than significant.

Standard Conditions: No mitigation is required; however, the following Standard Conditions are regulatory requirements implemented as routine actions conditioned by the City that would ensure impacts related to water quality or waste discharge remain less than significant.

Standard Condition HYD-1: Prior to the issuance of a demolition permit and/or grading permit for any development application prepared pursuant to the Damien High School Master Plan Update, the project proponent shall file and obtain a Notice of Intent (NOI) with the State Water Resources Control Board (SWRCB) in order to be in compliance with the National Pollution Discharge Elimination System (NPDES) General Construction Storm Water Permit for discharge of surface runoff associated with construction activities. Evidence that this has been obtained (i.e., a copy of the Waste Discharger's Identification Number) shall be submitted to the City for coverage under the NPDES General

Construction Permit. The NOI shall address the potential for an extended and discontinuous construction period based on funding availability. This condition shall be implemented to the satisfaction of the Director of the City of La Verne Public Works Department and the Community Development Director or designee, as appropriate.

Standard Condition HYD-2: Prior to the issuance of a demolition permit and/or grading permit for any development application prepared pursuant to the Damien High School Master Plan Update, the project proponent shall submit to and receive approval from the City of La Verne a Storm Water Pollution Prevention Plan (SWPPP), as applicable. The SWPPP shall include a surface water control plan and erosion control plan citing specific measures to control on-site and off-site erosion during the entire demolition, grading, and construction period. In addition, the SWPPP shall emphasize structural and nonstructural Best Management Practices (BMPs) to control sediment and non-visible discharges from the site. The SWPPP shall include inspection forms for routine monitoring of the site during both the demolition and construction phases to ensure National Pollution Discharge Elimination System (NPDES) General Construction Storm Water Permit compliance and that additional BMPs and erosion control measures will be documented in the SWPPP and utilized if necessary. The SWPPP shall address the potential for an extended and discontinuous demolition and construction period based on funding availability. The SWPPP shall be kept on site for the entire duration of project demolition and construction and shall be available to the Los Angeles Regional Water Quality Control Board (LARWQCB) for inspection at any time. BMPs to be implemented may include the following:

- Sediment discharges from the site may be controlled by the following: sandbags, silt fences, straw wattles and temporary basins (if deemed necessary), and other discharge control devices. The construction and condition of the BMPs shall be periodically inspected during demolition and construction, and repairs shall be made when necessary as required by the SWPPP.
- Materials that have the potential to contribute to non-visible pollutants to storm water shall not be placed in drainage ways and must be contained, elevated, and placed in temporary storage containment areas.
- All loose piles of soil, silt, clay, sand, debris, and other earthen material shall be protected in a reasonable manner to eliminate any discharge from the site. Stockpiles shall be surrounded by silt fences and covered with plastic tarps.

- In addition, the construction contractor shall be responsible for performing and documenting the application of BMPs identified in the SWPPP. Weekly inspections shall be performed on sandbag barriers and other sediment control measures called for in the SWPPP. Monthly reports and inspection logs shall be maintained by the contractor and reviewed by the City of La Verne and the representatives of the LARWQCB. In the event that it is not feasible to implement specific BMPs, the City of La Verne can make a determination that other BMPs will provide equivalent or superior treatment either on- or off-site.

This condition shall be implemented to the satisfaction of the Director of the City of La Verne Public Works Department and the Community Development Director or designee, as appropriate.

Standard Condition HYD-3: Prior to the issuance of a grading permit for any development application prepared pursuant to the Damien High School Master Plan Update, the project proponent shall submit a Standard Urban Storm Water Mitigation Plan for Municipal Storm Water and Urban Runoff Management Programs in Los Angeles County (SUSMP) to the City of La Verne for review and approval, as applicable. The project shall implement project design features identified in the SUSMP. The SUSMP shall demonstrate that any proposed on-site development plan includes BMPs for source control, pollution prevention, site design, low impact development (LID) implementation, and structural treatment control. Best Management Practices (BMPs) shall be designed and implemented to retain the project site's minimum design capture volume and hydromodification volume to ensure post-development storm water runoff volume or time of concentration does not exceed pre-development storm water runoff. Periodic maintenance of any required infiltration basin and landscaped areas during project occupancy and operation shall be in accordance with the schedule outlined in the SUSMP. This condition shall be implemented to the satisfaction of the Director of the City of La Verne Public Works Department and the Community Development Director or designee, as appropriate.

Adherence to Chapter 13.60 (Low Impact Development) of the City Municipal Code, the intent of the NPDES Permit for Los Angeles County and the incorporated cities of Los Angeles County (MS4 permit), and NPDES, SWPPP, SUSMP, and Urban Runoff Management Program requirements prepared as part of development applications under the Master Plan Update (i.e., **Standard Conditions HYD-1** through **HYD-3**) would ensure impacts related to water quality or waste discharge remain **less than significant.** No mitigation is required.

b) Less than Significant Impact. Domestic water for the City and project site is provided by the City of La Verne through a combination of groundwater and imported water. Groundwater is extracted from Six Basins[48] in accordance with the Six Basins Judgement, which defines adjudication for these basins to ensure safe operating yield and avoidance of groundwater over-extraction.[49] Imported water is purchased from the Three Valleys Municipal Water District (TVMWD) and the Metropolitan Water District of Southern California (MWD).[50]

The project site is not located within a designated groundwater recharge area, nor does it propose direct additions to or withdrawals of groundwater. Furthermore, the proposed construction is not expected to reach depths that would impair or alter the direction or rate of flow of groundwater. Currently, the project site is predominantly covered with a combination of pervious and impervious surfaces. Through implementation of **Standard Condition HYD-3**, a project-specific SUSMP shall be developed to specify BMPs designed and implemented to retain the project site's minimum design capture volume and hydromodification volume. Storm water shall be captured on-site and allowed to infiltrate into the ground such that post-development storm water runoff volume or time of concentration will not exceed pre-development storm water runoff. Additional project design features designed to maximize groundwater infiltration, such as roof downspouts draining into pervious, landscaped areas and maintenance of existing surface flows across the project site into infiltration basin(s), would further facilitate groundwater recharge. Periodic maintenance of any required infiltration basin and landscaped areas during project occupancy and operation shall be in accordance with the schedule outlined in the SUSMP.

The Six Basins Judgement is overseen by the Six Basis Watermaster. According to the Six Basins Judgement, the City has a right to 7.601 percent of the safe operating yield from the Canyon Basin, Upper Claremont Heights Basin, Lower Claremont Heights Basin, and Pomona Basin and "the right to produce as much groundwater as it may reasonably withdraw from the Two Basins Area on an annual basis so long as it does not substantially injure the rights of any other" parties identified in the Six Basins Judgment.[51] Through compliance with the Six Basins Judgement, as well as implementation of **Standard Condition HYD-3**, groundwater extraction by the City would not exceed safe operating yields, the amount of water infiltrated on-site post-development would exceed existing conditions. Therefore, the project's potential impacts to groundwater availability, quality, or recharge capabilities would remain **less than significant**. No mitigation is required.

c, d) Less than Significant Impact. The project site was previously developed as a high school campus, and no streams, rivers, or ephemeral drainage features exist on site. Development of the proposed project (demolition and construction of buildings and pavement) would alter the amount of existing pervious surface area and the amount of generated runoff.

Demolition and subsequent construction phases would disturb paved and/or vegetated surfaces and expose on-site soils to erosion and siltation potential. Pursuant to **Standard Condition HYD-2**, the project proponent shall submit to and receive approval from the City of La Verne a SWPPP prior to the issuance of demolition permit(s) and subsequent grading permit(s). The SWPPP shall

[48] The Six Basins comprise the Ganesha, Live Oak, Pomona, Lower Claremont Heights, Upper Claremont Heights, and Canyon Basin.
[49] *City of La Verne Draft 2015 Urban Water Management Plan.* Page 34. City of La Verne.
[50] *Final 2015 Urban Water Management Plan, The Metropolitan Water District of Southern California.* Table 1-3: Member Agencies and Table A.3-6: Metropolitan's In-Region Groundwater Storage Programs. June 2016.
[51] *Ibid.*

include a surface water control plan and erosion control plan citing specific measures to control on-site and off-site erosion during the entire demolition, grading, and construction period. In addition, the SWPPP shall emphasize structural and nonstructural BMPs to control sediment and non-visible discharges from the site. The SWPPP shall include inspection forms for routine monitoring of the site during both the demolition and construction phases to ensure NPDES compliance and that additional BMPs and erosion control measures will be documented in the SWPPP and utilized if necessary. The SWPPP shall address the potential for an extended and discontinuous demolition and construction period based on funding availability.

Pursuant to **Standard Condition HYD-3**, the project proponent shall prepare project-specific SUSMPs for any development application prepared pursuant to the Damien High School Master Plan Update that would include parking lots of 5,000 square feet or more of surface area (or with 25 or more parking spaces) or for future developments resulting in the creation, addition, or replacement of five thousand square feet or more of impervious surface area on an already developed site pursuant to Section 13.50.093 of the City Municipal Code. The SUSMP(s) would determine if conveyance of storm water runoff would create a Hydrologic Condition of Concern (HCOC). An HCOC occurs when post-development runoff conditions exceed pre-development runoff conditions, and discharge from the project site has a flow rate greater than 110 percent of the pre-development two-year peak flow. Generally, projects are exempt from HCOC analysis if (1) they disturb less than one acre; (2) the volume and time of concentration of storm water runoff under post-development conditions are within five percent of pre-development conditions for a two-year return frequency 24-hour storm; or (3) all downstream conveyance channels to an adequate sump (e.g., Santa Ana River or Prado Dam) engineered and regularly maintained to ensure design flow capacity, no sensitive stream habitat areas would be adversely affected, or they are not identified on the Co-Permittees Hydromodification Sensitivity Maps.

Through implementation of **Standard Condition HYD-3**, project-specific SUSMPs shall be developed to specify BMPs designed and implemented to retain the project site's minimum design capture volume and hydromodification volume. Storm water shall be captured on-site and allowed to infiltrate into the ground such that post-development storm water runoff volume or time of concentration will not exceed pre-development storm water runoff. Additional project design features, such as roof downspouts draining into pervious, landscaped areas, and maintenance of existing surface flows across the project site into the infiltration basin(s), would further maintain the site's existing drainage pattern and prevent erosion or siltation. Periodic maintenance of any required infiltration basin and landscaped areas during project occupancy and operation shall be in accordance with the schedule outlined in the SUSMPs.

With implementation of **Standard Conditions HYD-2** and **HYD-3**, impacts related to substantial alteration of the existing drainage pattern of the site or area or substantial increase in the rate or amount of surface runoff in a manner which would result in substantial erosion or siltation or result in flooding on- or off-site would remain **less than significant.** No mitigation is required.

e) Less than Significant Impact. The Federal Clean Water Act delegates authority to the States to issue NPDES permits for discharges of storm water from construction, industrial, and municipal entities to Waters of the United States. The purpose of the MS4 permit meets the California State Water Resources Control Board's requirements to mitigate for the negative impact of increases in storm water runoff caused by new development and redevelopment. The project storm water discharge rates cannot exceed the pre-development runoff condition for 2-year 24-

hour storm total or the 85th percentile 24-hour storm runoff event to be in compliance with the MS4 post-construction and site design requirements.

Pursuant to **Standard Condition HYD-2**, a project-specific SWPPP shall be prepared prior to the issuance of a demolition permit and/or grading permit for any development application prepared pursuant to the Damien High School Master Plan Update, as applicable. Project Specific SWPPP(s) would detail BMPs to be implemented during demolition and construction to reduce/eliminate adverse water quality impacts resulting from development. All impacts related to runoff during demolition, site preparation, and construction would be addressed by the SWPPP(s).

Pursuant to **Standard Condition HYD-3**, the project proponent shall prepare project-specific SUSMPs for any development application prepared pursuant to the Damien High School Master Plan Update that would include parking lots of 5,000 square feet or more of surface area (or with 25 or more parking spaces) or for future developments resulting in the creation, addition, or replacement of five thousand square feet or more of impervious surface area on an already developed site pursuant to Section 13.50.093 of the City Municipal Code. The SUSMP(s) would determine if conveyance of storm water runoff would create an HCOC. Through implementation of **Standard Condition HYD-3**, BMPs shall be designed and implemented to retain the project site's minimum design capture volume and hydromodification volume. Storm water shall be captured on-site and allowed to infiltrate into the ground such that post-development storm water runoff volume or time of concentration will not exceed pre-development storm water runoff. Additional project design features, such as roof downspouts draining into pervious, landscaped areas, and maintenance of existing surface flows across the project site into the infiltration basin(s), would further maintain the site's existing drainage pattern and prevent additional sources of polluted runoff. Periodic maintenance of any required infiltration basin and landscaped areas during project occupancy and operation shall be in accordance with the schedule outlined in the SUSMP(s).

The project is located in an urbanized area for which storm drain features have been previously planned and installed. Any sources of storm water pollution would be addressed through adherence to NPDES permit requirements. Implementation of **Standard Conditions HYD-2** and **HYD-3** would ensure polluted runoff during demolition, site preparation, and construction would be addressed by the SWPPP, and post-development storm water runoff volume or time of concentration would not exceed pre-development conditions. Therefore, impacts related to the creation or contribution of runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff would remain **less than significant**. No mitigation is required.

f) Less than Significant Impact. Refer to response to Checklist Question IX.a. Implementation of **Standard Conditions HYD-1** through **HYD-3** would ensure compliance with the State NPDES General Construction Storm Water Permit for discharge of surface runoff associated with construction activities; polluted runoff during demolition, site preparation, and construction would be addressed by the SWPPP; and post-development storm water runoff volume or time of concentration would not exceed pre-development conditions.

The SWPPP and SUSMP would be reviewed and approved by the City as a routine action during the processing of development applications prepared pursuant to the Damien High School Master Plan Update; therefore, it is reasonable to conclude that the required measures and

project design features detailed in the SWPPP and SUSMP to safeguard the existing drainage pattern of the site and area from storm water runoff would be incorporated into the proposed project. The project would not have any substantial effects on a stream or river, as no such features exist on or adjacent to the project site, and site-specific structural BMPs would exceed the estimated volume reduction needed to meet HCOC requirements. Adherence to **Standard Conditions HYD-1** through **HYD-3** and requirements included in the NPDES permit, SWPPP, and SUSMP would ensure potential impacts to water quality remain **less than significant**. No mitigation is required.

g, h) No Impact. The project site is located within Federal Emergency Management Agency (FEMA) Flood Zone X, which is defined as an area "determined to be outside the 0.2% annual chance (100-year) floodplain."[52] Additionally, the project does not include a residential component; therefore, the project would not place housing in a 100-year flood zone. **No impact** related to flooding in a 100-year flood zone would occur. No mitigation is required.

i) Less than Significant Impact. The project site could be subject to floodwater inundation from potential failure of the Weymouth Memorial Reservoir located on MWD property approximately 0.25 mile (1,300 feet) north of the project site.[53] If the Weymouth Memorial Reservoir were to fail, floodwaters could potentially inundate the eastern portion of the project site, primarily along the athletic fields.[54]

Pursuant to Article V of Chapter 15.40 (Floodplain Management) of the City Municipal Code, all new construction and substantial improvements in flood-prone areas shall be designed (or modified) and adequately anchored to prevent floatation, collapse, or lateral movement of structures; be constructed of flood-resistant materials and utility equipment with electrical, heating, ventilation, plumbing and air conditioning equipment and other service facilities that are designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding while using methods and practices that minimize flood damage (Section 15.40.150). Additionally, all new development in flood-prone areas shall be reviewed by the City in order to minimize flood damage within the flood prone area, locate and construct public utilities and facilities (e.g., sewer, gas, electrical, and water systems) to minimize or eliminate flood damage, and ensure adequate drainage to reduce exposure to flood hazards (Section 15.40.160).

The proposed project will be conditioned to meet the requirements established in the City Municipal Code, as well as compliance with State Civil Code Section 1103 through 1103.4 requiring notification to those potentially affected of the risk involved in location within a flood hazard or dam inundation area. These requirements will be confirmed through the City's building plan check process pursuant to Section 18.60.030 and Chapter 18.16 (Development Review) of the City Municipal Code prior to issuance of building permits. Therefore, through compliance with City Municipal Code and State Civil Code, impacts from placing a structure within an area that would expose people or structures to a significant risk of loss, injury, or death as a result of the failure of a levee or dam will be **less than significant**. No mitigation is required.

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52 *National Flood Hazard Layer FIRMette.* Federal Emergency Management Agency. Map No. 06037C1725F. Effective September 26, 2008. https://msc.fema.gov/portal/search?AddressQuery=highland%2C%20california#searchresultsanchor (Accessed August 3, 2018).

53 *University of La Verne Facilities and Technology Master Plan Update.* Environmental Impact Report, SCH #2016071053. Figure 20: Dam Inundation. City of La Verne. December 2016.

54 *Ibid.*

j) Less than Significant Impact. Seiches are oscillations of the surface of inland bodies of water that vary in period from a few minutes to several hours. Seismic events can induce such oscillations. Tsunamis are large sea waves produced by submarine earthquakes or volcanic eruptions. The project site is not located close to an inland body of water; the nearest large body of water is the Puddingstone Reservoir located at 950 feet amsl approximately one mile southwest of the project site. The project site is located at approximately 1,025 feet amsl, 75 feet higher than the reservoir. Due to the elevation difference from Puddingstone Reservoir and the project site, the project would not be impacted by a tsunami or seiches. Finally, the project is not located within a landslide area[55] and therefore would not be exposed to potential mudflows. Impacts would be **less than significant**, and no mitigation is required.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
X. Land Use and Planning				
Would the proposal:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐
c) Conflict with an applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

Discussion

a) No Impact. The proposed project consists of updating the Damien High School Master Plan for the 25.8-acre Damien High School Campus. Existing building area totals approximately 132,731 square feet of academic, administrative, and athletic facilities, with 415 parking spaces on campus. The Master Plan Update is divided into three phases, each of which contains potential projects. At full build-out, the Master Plan Update proposes demolition of the existing 5,972-square foot (sf) cafeteria facility, construction of four new buildings totaling approximately 73,100 sf of new building space, as well as several alterations to select hardscaped areas and parking lots (refer to Figure 6A). Upon build-out of the Master Plan Update, the campus would have a net increase of five parking spaces, totaling 420 spaces. The proposed Master Plan Update is based on the need to fulfill a current demand for additional academic space and

[55] *Public Safety Element,* City of La Verne General Plan. Figure PS-1: Geologic Hazards & Constraints Map. December 7, 1998.

student services, as the high school is not projecting an increase in students or faculty throughout the life of the Master Plan Update.

The 25.8-acre project site is located in the southwestern portion of the City. The project site is surrounded by residential uses to the north and west across Bonita Avenue and Damien Avenue, respectively. The project site is bordered to the east by the campus of the Joan Macy School/ David and Margaret Youth and Family Services Organization, residential uses, and commercial uses. South of the project site are light industrial uses across Palomares Avenue (see Figure 2 for surrounding land uses and Figure 4 for site photographs).

All future development projects prepared pursuant to the Damien High School Master Plan Update are proposed within the existing 25.8-acre Damien High School Campus, which is fully developed with school uses including buildings, tennis courts, pool, gymnasium, football stadium, baseball fields and associated parking lots and landscaping. No physical expansion of the campus beyond its existing footprint is proposed. Additionally, the proposed project site is already served by fully improved public streets and other infrastructure and does not involve the subdivision of land or the creation of streets that could alter the existing surrounding pattern of development or established community. Based on the historic pattern of development on the project site and vicinity, the proposed project would not physically divide an established community. **No impact** would occur and no mitigation is required.

b) Less Than Significant Impact. The Master Plan Update is designed as a living document to allow projects identified in later phases to be brought forward to an earlier phase, as needed, and to allow discretionary use of proposed facilities in response to the demands of the school curriculum. The proposed Master Plan Update is subject to the following planning policy documents:

- City of La Verne General Plan
- City of La Verne Municipal Code
- Brackett Field Airport Land Use Compatibility Plan

City of La Verne General Plan. The Land Use Chapter of the General Plan establishes the type and general character of land uses permitted in the City. According to the City of La Verne's General Plan Land Use Map, the project site is designated a Community Facility/Freeway land use. The 25.8-acre project site is located in the southwestern portion of the City within Neighborhood Six - West La Verne. As stated previously, the project site is surrounded by residential uses to the north and west across Bonita Avenue and Damien Avenue, respectively. The project site is bordered to the east by the campus of the Joan Macy School/David and Margaret Youth and Family Services Organization, residential uses, and commercial uses. South of the project site are light industrial uses across Palomares Avenue. According to the City General Plan Land Use Element, operation of Damien High School in Neighborhood Six - West La Verne must be conditioned to be compatible with surrounding residential land uses.[56]

The project site is zoned Institutional (I). Goal 9 of the City General Plan is designed to integrate the public and private uses in West La Verne. Policy 9.1 would ensure compatibility between the institutional and residential land uses through advisement and consultation, buffering and screening, environmental mitigation as applicable, and performance standards. Additionally, a

[56] *Land Use Element*. Page 24. City of La Verne General Plan. Adopted December 7, 1998.

master plan would be required to be prepared and periodically updated and revised for all institutional uses to reflect the needs of the facility and respect the surrounding neighborhood.[57]

General Plan Compatibility Assessment. The proposed Master Plan Update is based on the need to fulfill a current demand for additional academic space and student services. At full build-out, the Master Plan Update proposes demolition of the existing 5,972 sf cafeteria facility, construction of four new buildings with totaling approximately 73,100 sf of new building space, as well as several alterations to select hardscaped areas and parking lots (net increase of 67,128 sf). All future development projects prepared pursuant to the Damien High School Master Plan Update are proposed within the existing 25.8-acre Damien High School Campus, which is fully developed with school uses, and the project does not propose a change in the land use designation of the General Plan.

The project would result in an increase in land use density on the project site. However, Damien High School is not projecting an increase in student enrollment or faculty/staff throughout the life of the Master Plan Update. Therefore, no increase in land use or development intensity, and no potential cumulative overburdening of community infrastructure and service capacity, is expected to occur.

All facilities proposed through implementation of the Master Plan Update would be constructed to heights commensurate with the existing on-site buildings and be located within the existing development footprint of the campus, generally within the internal portions of the campus. According to the City's General Plan Resource Management Element, scenic views within La Verne consist of the San Gabriel Mountains, foothills, and canyons located in the northern portion of City (i.e., north of the project site). The General Plan does not identify any specific landforms or scenic vistas within the project site or vicinity.[58] The nearest scenic view corridor is an easterly viewpoint of Bonita Avenue approximately 0.3 mile east of the project site at the intersection of Bonita Avenue and Wheeler Avenue. None of the proposed facilities under the Master Plan Update would obstruct this viewpoint or any other scenic view corridor identified in the General Plan.

Implementation of the Master Plan Update would improve upon the existing visual character of the project site while maintaining consistency with the existing visual character of the surrounding community. Accordingly, the proposed Master Plan Update includes several architectural elements designed to maintain the aesthetic and historical nature of the early 20th Century academic quadrangle while facilitating the anticipated future development of the Damien High School campus, as discussed in detail in response to Checklist Question Ic.

As detailed in response to Checklist Question IIId, receptors sensitive to adverse air quality include but are not limited to residential land uses, schools, hospitals, resident care facilities, daycare facilities, or other facilities that may house individuals with health conditions that would be affected by poor air quality. The project site is developed as an occupied high school campus and is surrounded by residential, school, and light industrial uses. The nearest sensitive receptors are the school itself and residences adjacent to the project site boundary. Tables D and F presented in response to Checklist Question IIIb identify the on-site construction and operational emissions of CO, NOx, PM_{10}, and $PM_{2.5}$, respectively, and demonstrate that all

[57] *Ibid.*

[58] *Resource Management Element*. Map RM-5, Scenic View Corridors Map. City of La Verne General Plan. Adopted December 7, 1998.

concentrations of pollutants would be below the SCAQMD thresholds of significance for construction and operation of the project. Therefore, neither short-term construction nor long-term operation of Damien High School pursuant to the proposed Master Plan Update would expose on-campus students or the surrounding community to adverse air quality.

Demolition proposed under Phase 1 would remove the late-1960s-era lunch shelter and portable structure located at the southwestern quadrant of the academic quadrangle and replace them with a new Student Center maintaining the layout of the quadrangle and contain architectural features such as arches along its façade consistent with the original archway corridor along Bonita Avenue and architectural elements of the existing structures comprising the academic quadrangle. Implementation of **Mitigation Measures HAZ-1** through **HAZ-3** would ensure surrounding land uses would be protected from hazards related to renovation or demolition of structures containing asbestos and/or lead.

As detailed in responses to Checklist Questions XIIc and d, the project site is an existing high school campus and the proposed project would perpetuate the use of the project site as a high school. The proposed project would be substantially similar to the existing land use and no increase in student enrollment or faculty/staff is anticipated. Therefore, impacts related to a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project would be less than significant. With implementation of **Mitigation Measures NOI-1** through **NOI-3**, surrounding sensitive receptors would not be exposed to significant noise levels.

Under Phase 2, the proposed Grand Promenade (refer to #6 on Figure 6C) would serve as a major element in the Master Plan Update and establish the reimagined framework of development on campus. Current pedestrian circulation through campus is interrupted by parking lots and drive isles. The Grand Promenade would link the north and south ends of the campus and separate pedestrians from vehicle circulation by removing portions of a parking lot and creating gathering areas, quads, and a plaza along the gymnasium frontage, which would set the stage for development and improvements on both sides of the pedestrian connection.

The existing parking lot on the west side of the proposed promenade (refer to #7 on Figure 6C) would be reconfigured. The Grand Promenade would cut off vehicle circulation through the center of campus while the reconfigured parking lot would include improvements to the main entrance along Damien Avenue to establish a welcoming and secure entrance to the campus and feature the proposed Chapel as the primary focal point for the main entrance from the public right-of-way.

The new parking lot at the southwest corner of campus (refer to #8 on Figure 6C) under Phase 2 would have vehicle access along Palomares Avenue and connect to the campus via pedestrian walkways. Construction of this parking lot and demolition of the 73-space parking lot east of the existing Event Center under Phase 3 (refer to "D" on Figure 6D) would separate pedestrian and vehicular circulation by placing vehicles along the perimeter of campus while facilitating pedestrian circulation through the center of campus where the academic, administrative, and athletic facilities are primarily located. Since implementation of the proposed Master Plan Update does not include an increase in student enrollment or faculty/staff, there would be no additional vehicle trips generated which could contribute additional traffic to local roadways during peak hours, as detailed in Section XVI *Transportation/Traffic*. Rather, the addition of the parking lot and ingress/egress driveway along Palomares Avenue would provide a third primary

entrance/exit to the campus (in addition to the existing driveways along Bonita Avenue and Damien Avenue) and attenuate potential choke points that could occur at existing campus driveways along Damien Avenue and Bonita Avenue.

As stated previously, the proposed Master Plan Update does not include specific development plans or building details. Future development projects proposed pursuant to the proposed Master Plan Update would be reviewed through the City's development review process for consistency with applicable adopted City policies. In addition, Mitigation Measures and Standard Conditions identified in Sections IV, V, VI, VIII, IX, XII, and XVII of this Initial Study, as well as adherence to the design and planning principles presented in the proposed Master Plan Update, would ensure compatibility between the institutional and residential land uses in accordance with Goal 9 and Policy 9.1 of the City General Plan. Therefore, the proposed project is consistent with the City's General Plan. Impacts would be **less than significant**, and no additional mitigation is required.

City of La Verne Municipal Code. The City of La Verne Zoning Map designates the project site as Institutional (I). Pursuant to Section 18.60.020 of the City Municipal Code, a master plan is required for all structures and improvements in Institutional zones. The master plan shall be approved before a precise plan can be approved for buildings and other improvements. On sites greater than five (5) acres, such as the proposed project site, the master plan shall be approved by the Planning Commission and City Council.

Municipal Code Compatibility Assessment. The project site is zoned Institutional (I), for which a Master Plan Update is being prepared as the subject of this environmental analysis in accordance with Section 18.60.020 of the City Municipal Code. All future development proposed under the Master Plan Update would be subject to compliance with Chapter 18.60 (Institutional Zone) of the City Municipal Code, which includes requirements for setbacks, building height, lot coverage, and landscaping. Furthermore, final development plans (i.e., precise plans) would be provided to the City for approval by the Development Review Committee pursuant to Chapter 18.16 (Development Review) to ensure compliance with all applicable regulations pertaining to building orientation, form, massing, setbacks, height, color palette, building materials, and drought-tolerant landscaping to ensure appropriate placement and design of all facilities proposed through implementation of the Master Plan Update.

In accordance with Section 18.60.110, greater structural heights, more lot coverage, smaller setbacks, and similar adjustments to the standards of Chapter 18.60 (Institutional Zone) may be permitted in the Master Plan Update upon review and approval by the City of La Verne's City Council after recommendation by the Planning Commission. Such adjustments are permitted provided: they are necessary in response to the unique qualities of the institution and its site to support efficient and attractive development; impacts are minimized to the surrounding properties and to cultural, historic, and environmental resources; the proposed improvements otherwise meet the requirements and intent of the City of La Verne's Municipal Code, the City General Plan, and CEQA; and the benefits of the proposed development standard change(s) outweigh any potential adverse effects. Implementation of **Mitigation Measures CUL-1** and **CUL-2** would require an additional layer or review for each development project facilitated under the Damien High School Master Plan Update; subject to site- and design-level analyses to address any potential impacts to historical resources in accordance with Public Resources Code 21084.1. Any potential impacts that could result in a substantial adverse change to the significance of historical resources from implementation of the Master Plan Update could then

be mitigated, as deemed feasible and appropriate, at the project-level in accordance with *CEQA Guidelines* Section 15064.5 and Section 15126.4(b)(1) to facilitate consideration of site- and design-level adjustments pursuant to Section 18.60.110 of the City Municipal Code.

The Master Plan Update includes construction of four new buildings to heights commensurate with the existing on-site buildings. Additionally all four proposed buildings would be constructed within the existing development footprint of the campus, generally within the internal portions of the campus. Therefore, and through implementation of **Mitigation Measures CUL-1** and **CUL-2** and compliance with Chapter 18.60 (Institutional Zone) of the City Municipal Code, impacts to scenic views from surrounding neighborhoods would remain **less than significant**. Additionally, the proposed Performing Arts Center would be constructed immediately north of the baseball fields, adjacent to the east of the existing Event Center. Current views of the mountains from the campus athletic fields are partially obstructed by an existing maintenance building, pool building, and large ornamental trees.

Through compliance with the City's Municipal Code, implementation of the Master Plan Update would improve upon the existing visual character of the project site while maintaining consistency with the existing visual character of the surrounding community. Damien High School is a major contributor to the existing visual character and historic fabric of Bonita Avenue as one of the earliest developments along the roadway. The campus boasts several facilities dating to the early 20th century that exemplify the tradition of the academic quadrangle, placing buildings in a square or rectangle formation surrounding a central, open space. Additionally, the primary façade of the academic quadrangle along Bonita Avenue exhibits the original archway corridor as a defining characteristic of the campus architecture. Accordingly, the proposed Master Plan Update includes several architectural elements designed to maintain the aesthetic and historical nature of the academic quadrangle while facilitating the anticipated future development of the Damien High School campus.

Demolition proposed under Phase 1 would remove the late-1960s-era lunch shelter and portable structure located at the southwestern quadrant of the academic quadrangle and replace them with a new Student Center maintaining the layout of the quadrangle and contain architectural features such as arches along its façade consistent with the original archway corridor along Bonita Avenue and architectural elements of the existing structures comprising the academic quadrangle. Construction and operation of the proposed wrestling room adjacent to the south of the existing Event Center would be commensurate with the existing athletic facilities in that area of the Campus and would not be visible from any portion of the academic quadrangle.

The proposed circulation network and parking lot reconfiguration would be subject to review and approval by the City Fire and Police Departments, City Traffic Engineer, and Public Works Department during the City's precise plan review process pursuant to Chapter 18.16 (Development Review) of the City of La Verne's Municipal Code. Furthermore, all parking lot improvements would include additional landscaping elements both internally as well as long the perimeter of the campus in accordance with Section 18.60.080 and Chapter 18.118 (Water Efficient Landscapes) of the City of La Verne's Municipal Code. Additionally, Section 18.76.090 requires all parking lot illumination to be designed so that light is shielded and directed away from adjoining properties and the public right-of-way. This measure applies to all development in the City.

Through compliance with Section 18.60.090 of the City Municipal Code, implementation of the Master Plan Update would not adversely impact the surrounding community from introduction of any new sources of light or include any features that would substantially degrade the appearance of the surrounding neighborhoods. Furthermore, compliance with Chapter 18.16 (Development Review), which would require all final development plans to be reviewed and approved by the City of La Verne's Development Review Committee pertaining to building orientation, form, massing, setbacks, height, color palette, building materials, and drought-tolerant landscaping would ensure appropriate placement and design of all facilities proposed through implementation of the Master Plan Update. Therefore, the project would be developed in accordance with the City of La Verne's Municipal Code. Impacts would be **less than significant**, and no mitigation is required.

Brackett Field Airport Land Use Compatibility Plan. The Brackett Field Airport, a general aviation airport, is located approximately 0.6 mile south of the project site. Damien High School is located within Zone E of the Brackett Field Airport Land Use Compatibility Plan (BFALUCP).[59] Within Zone E, institutional uses such as children's schools grades 9 through 12 are normally compatible and are presumed to comply with safety and airspace protection criteria. Additionally, the BFALUCP identifies the project site within Federal Aviation Administration (FAA) Part 77 Notification Area.[60] The risk level is considered low for normally compatible uses within Zone E.

Brackett Field Airport Land Use Compatibility Assessment. FAA Part 77, Subpart B requires notification to the FAA of any proposed construction or alteration having a height greater than an imaginary surface extending 100 feet outward and 1 foot upward (slope of 100:1) for a distance of 20,000 feet from nearest point of any runway more than 3,200 feet in actual length, and also requires FAA notification for construction of any object taller than 200 feet.[61]

Development proposed under the Master Plan Update on the project site is located as close as 3,800 feet north of the nearest runway of the Brackett Field Airport. Therefore, any development on the project site equal to or greater than 38 feet in height (equal to a slope of 100:1 in relation to the distance to the nearest runway) would require notification to the FAA. None of the facilities proposed under the Master Plan Update would exceed 37 feet above surface grade at their tallest point (i.e., roof-top parapet). Therefore, none of the proposed facilities would require Los Angeles County Airport Land Use Commission (ALUC) review or notification to the FAA for height restrictions. However, in accordance with Sections 1.2.22a (Major Land Use Action) and 1.4.2b (Mandatory Referral of Certain Land Use Actions) of the BFALUCP, the proposed Master Plan Update and subsequent development application for the 400-seat Performing Arts Center anticipated under Phase 3 of the Master Plan Update would require review and approval by the ALUC (for indoor assembly facility with a capacity of at least 300 people) to ensure consistency with the BFALUCP (**Standard Condition HAZ-1**).[62] Pursuant to California Public Utilities Code Section 21676 (Airport Land Use Commission), any project-specific conditions imposed by the ALUC must be implemented as applicable and will be reviewed and confirmed by the La Verne Community Development Director or designee in

[59] *Brackett Field Airport Land Use Compatibility Plan.* Map 2A, Compatibility Policy Zones. Los Angeles County Airport Land Use Commission. Adopted December 9, 2015.

[60] *Ibid.* Map 2B, Airspace Protection Map.

[61] *§ 77.9(a)(1) Construction or Alteration Requiring Notice.* 14 Code of Federal Regulations 77.9 - Construction or Alteration Requiring Notice. https://www.law.cornell.edu/cfr/text/14/77.9 (Accessed June 19, 2018).

[62] Pursuant to California Public Utilities Code Section 21676 (Airport Land Use Commission).

accordance with Chapter 18.16 (Development Review) and Chapter 18.60 (institutional Zone) of the La Verne Municipal Code so that execution of projects proposed under the Master Plan Update would occur in accordance with the BFALUCP. Through implementation of **Standard Condition HAZ-1**, the project would be consistent with the BFALUCP, and impacts related to compatibility would be **less than significant.** No mitigation is required.

c) No Impact. As detailed in response to Checklist Question IV.f, the proposed project site is not within any adopted habitat conservation plans, natural community conservation plans, or any other regional planning areas identified by the USFWS, CDFW, or City.[63,64,65] Therefore, implementation of the proposed Master Plan Update would not conflict with the provisions of any adopted local or regional conservation plans. **No impact** to adopted habitat conservation plans would occur. No mitigation is required.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
XI. Mineral Resources				
Would the project:				
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Discussion

a) No Impact. The project site is within the Claremont - Upland Production-Consumption Region, specifically, within Plate 6.7 of the San Dimas, CA USGS 7.5-Minute Quadrangle.[66] According to the Mineral Land Classification Map for Plate 6.7, the project site is located within MRZ-1, which is defined as, "areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence."[67] Therefore, the project would not 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. **No impact** would occur, and no mitigation is required.

63 *Information for Planning and Consultation.* United States Fish and Wildlife Service. March 31, 2018. (Appendix C)

64 *Biographic Information and Observation System (BIOS).* California Department of Fish and Wildlife. https://map.dfg.ca.gov/bios/ (Accessed July 17, 2018).

65 *Resource Management Element.* City of La Verne General Plan. Adopted December 7, 1998.

66 *Special Report 143, Mineral Land Classification of the Greater Los Angeles Area, Part VI, Classification of Sand and Gravel Resource Areas, Claremont-Upland Production-Consumption Region.* California Department of Conservation, Division of Mines and Geology. Page 11. 1984.

67 *Mineral lands Classification Map, Aggregate Resources only, Claremont-Upland P-C Region.* California Department of Conservation, Division of Mines and Geology. *Special Report 143, Plate 6.7, San Dimas, California USGS 7.5-Minute Quadrangle.* 1984.

b) No Impact. The City General Plan Resource Management Element does not identify any known mineral resources worthy of preservation on the project site or in the immediate vicinity. As detailed on Figure RM-6 (Resource Management Policy Map) of the City's General Plan Resource Management Element, the project site is designated "Developed/Disturbed," and the nearest "Mineral Resources" in the City are mapped approximately 1.4 miles north of the project site along the San Dimas Wash.[68] Therefore, the project would not 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. **No impact** would occur, and no mitigation is required.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
XII. Noise				
Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☒	☐	☐
c) A substantial permanent increase in ambient noise levels above levels existing without the project?	☐	☐	☒	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☒	☐	☐
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 expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise?	☐	☐	☐	☒

[68] *Resource Management Element.* City of La Verne General Plan. Map RM-6: Resource Management Policy Map. Adopted December 7, 1998.

Discussion

a) Potentially Significant Unless Mitigation Incorporated. Noise exposure goals for various types of land uses reflect the varying noise sensitivities associated with those uses. Residences, hospitals, schools, guest lodging, libraries, and parks are most sensitive to noise intrusion and therefore have more stringent noise exposure targets than commercial or industrial uses that are not subject to impacts such as sleep disturbance. Sensitive land uses generally should not be subjected to noise levels that would be considered intrusive in character. Therefore, the location, hours of operation, type of use, and extent of development warrant close analysis in an effort to ensure that sensitive receptors[69] are not substantially affected by noise.

Sensitive Receptors. Sensitive land uses in the project vicinity include both on- and off-site land uses. The on-site land use is Damien High School itself since it would continue to operate with students in classroom buildings and conduct school activities during project construction. For off-site sensitive land uses, the project site is surrounded by residential uses to the north and west across Bonita Avenue and Damien Avenue, respectively. The project site is bordered to the east by the campus of the Joan Macy School/David and Margaret Youth and Family Services Organization, residential uses, and commercial uses. South of the project site are light industrial uses across Palomares Avenue.

The closest sensitive receptors are on-site school facilities estimated to be as close as 15 feet from construction limits anticipated under various phases of the Master Plan Update. The nearest off-site residences are located approximately 50 feet to the west of the project construction limits, 80 feet to the north of the project construction limits, and 530 feet to the east of the project construction limits. The Joan Macy School/David and Margaret Youth and Family Services Organization is located approximately 330 feet to the east of the project construction limits. The closest commercial uses are professional offices located approximately 80 feet west of the project construction limits at the southwest corner of Damien Avenue and Bonita Avenue. The residences to the west, north, and east of the project site are separated from the Damien High School campus by Damien Avenue, Bonita Avenue, and Third Street, respectively, while the Joan Macy School/David and Margaret Youth and Family Services Organization is adjacent to the campus (albeit 330 feet to the east of the project construction limits, as stated above).

Applicable Noise Standards. Section 8.20.010 of the City's Municipal Code states that Ordinance No. 11,773 of the County of Los Angeles, Chapter 12.08 known as the "Noise Control Ordinance of the County of Los Angeles," (County Noise Ordinance) is adopted by reference pursuant to Section 50022.9 of the California Government Code. For the purposes of this analysis, the noise standards provided in Chapter 12.08 of the County Noise Ordinance applicable to single-family residential uses are used to determine impacts to all sensitive receptors, including the Joan Macy School/David and Margaret Youth and Family Services Organization, since single-family residential noise standards are the most conservative. The constructions noise standards and operational noise standards are further identified below:

- The County Noise Ordinance construction noise standards are presented in Table L.

[69] Noise-sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Occupants of residences, hospitals, schools, guest lodging, libraries, churches, nursing homes, auditoriums, concert halls, amphitheaters, playgrounds and parks are considered noise-sensitive receptors.

- The County Noise Ordinance operational noise standards are presented in Table M.

Table L: Construction Noise Standards

Allowable Work (Dates and Times)	Single-Family		Multifamily		Semi-Residential/Commercial	
	Mobile Equipment[1] (L_{max})	Stationary Equipment[2] (L_{max})	Mobile Equipment[1] (L_{max})	Stationary Equipment[2] (L_{max})	Mobile Equipment[1] (L_{max})	Stationary Equipment[2] (L_{max})
At Residential Structures						
Daily,[3] 7:00 a.m. to 8:00 p.m.	75 dBA	60 dBA	80 dBA	65 dBA	85 dBA	70 dBA
Daily,[4] 8:00 p.m. to 7:00 a.m.	60 dBA	50 dBA	64 dBA	55 dBA	70 dBA	60 dBA
At Business Structures						
Daily, Anytime	85 dBA L_{max}					

Source: County of Los Angeles, Noise Control Ordinance Section 12.08.440.
[1] Represents maximum noise levels for nonscheduled, intermittent, short-term operation (less than 10 days).
[2] Represents maximum noise levels for repetitively scheduled and relatively long-term operation (periods of 10 days or more).
[3] Daily except for Sundays and legal holidays.
[4] Daily and all day on Sundays and legal holidays.
dBA = A-weighted decibels
L_{max} = maximum instantaneous noise level

Table M: Operational Noise Standards

Noise Zone	Designated Noise Zone Land Use	Time	L_{50}	L_{25}	$L_{8.3}$	$L_{1.7}$	L_{max}
Exterior							
1	Noise-Sensitive Area	Anytime	45	50	55	60	65
2	Residential Properties	10:00 p.m. to 7:00 a.m.	45	50	55	60	65
		7:00 a.m. to 10:00 p.m.	50	55	60	65	70
3	Commercial Properties	10:00 p.m. to 7:00 a.m.	55	60	65	70	75
		7:00 a.m. to 10:00 p.m.	60	65	70	75	80
4	Industrial Properties	Anytime	70	75	80	85	90
Noise Zone	**Designated Noise Zone Land Use**	**Time**			**$L_{8.3}$**	**$L_{1.7}$**	**L_{max}**
Interior							
All	Residential Properties	10:00 p.m. to 7:00 a.m.			40	45	50
		7:00 a.m. to 10:00 p.m.			45	50	55

Source: County of Los Angeles, Noise Control Ordinance Section 12.08.390.
Note: As adopted from the Noise Control Ordinance of Los Angeles. If the ambient noise level exceeds the exterior noise standard (L_{50}, L_{25}, $L_{8.3}$, $L_{1.7}$, and L_{max}), the ambient level becomes the corresponding exterior noise standard.
L_{50} = cumulative period of more than 30 minutes in any hour (50 percent of the time)
L_{25} = cumulative period of more than 15 minutes in any hour (25 percent of the time)
$L_{8.3}$ = cumulative period of more than 10 minutes in any hour (8.3 percent of the time)
$L_{1.7}$ = cumulative period of more than 1 minutes in any hour (1.7 percent of the time)
L_{max} = maximum instantaneous noise level

Additionally, Section 12.08.570(C) (Activities Exempt from Chapter Restrictions) indicates activities conducted on public playgrounds and public or private school grounds, including but not limited to school athletic and school entertainment events, are exempt from the provisions of the County Noise Ordinance.

In conjunction with the County Noise Ordinance, the City's General Plan Noise Element specifies noise/land use compatibility as it relates to the Community Noise Equivalent Level (CNEL), as

detailed in Table N. CNEL is the time-varying noise over a 24-hour period, for long-term noise impact assessment.

Table N: Noise/Land Use Noise Compatibility Matrix

Land Use	CNEL (Decibels)						
	55	60	65	70	75	80	
Single/Multifamily Residential	A	A	B	B	C	D	D
Mobile Home Park	A	A	B	C	C	D	D
Hotel, Motel	A	A	B	B	C	C	D
School, Library, Church, Hospital, Nursing Home	A	A	B	C	C	D	D
Concert/Meeting Hall, Auditorium, Amphitheater	B	B	C	C	D	D	D
Indoor/Outdoor Sports Arena, Amusement Park	A	A	A	B	B	D	D
Playground, Neighborhood Park	A	A	A	B	C	D	D
Golf Courses, Riding Stable, Cemetery	A	A	A	A	B	C	C
Office/Professional Building	A	A	A	B	B	C	D
Commercial Retail, Bank, Restaurant, Theater	A	A	A	A	B	B	C
Industrial, Utilities, Manufacturing, Wholesale, Service Station	A	A	A	A	B	B	B
Agriculture	A	A	A	A	A	A	A

Source: *Noise Element*. Table N-1. City of La Verne General Plan. Adopted 1998.

Zone A: Normally Acceptable	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.
Zone B: Conditionally Acceptable	New construction or development should be undertaken only after detailed analysis of the noise requirements is made and needed noise insulation features in the design. Conventional construction, with closed windows and fresh air supply systems or air conditioning, will normally suffice.
Zone C: Normally Not Acceptable	New construction or development should generally be discouraged. If it does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
Zone D: Clearly Not Acceptable	New construction or development should generally not be undertaken.

CNEL = Community Noise Equivalent Level

Additionally, the City's General Plan Noise Element defines issues, goals, policies, and implementation measures related to noise conditions in La Verne. The specific policies of the Noise Element that are relevant to the proposed project are as follows:

Goal 1: Protect our community from excessive noise.

Policy 1.1: Maintain or reduce noise levels citywide.

a. Enforce the Noise Control Ordinance to assure that all new development is consistent with the land use compatibility criteria, exterior and interior noise standard.

f. Consider the noise of a proposed project in both absolute and relative terms. A proposed project will be considered to have a significant adverse

impact on the environment if the expected noise increase exceeds 5 dB, even though it may not exceed the standard in Table N.

g. Require stringent mitigation measures to limit construction noise for all new projects. Establish a graduated system of fines for violations that increase in severity with each offense.

Construction Impacts. Two types of short-term noise impacts could occur during construction of the proposed project. The first type of impact could result from construction crew commutes and the transport of construction equipment and materials to the site. The second type of impact could result from noise generated during demolition, excavation, grading, and building erection on the project site.

Construction crew commutes and the transport of construction equipment and materials to the site for projects proposed under each phase of development would incrementally increase noise levels on roadways leading to the site. Construction is proposed in three phases with projects to be developed incrementally over the course of approximately ten years. Although there would be a relatively high single-event noise exposure potential causing intermittent noise nuisance (passing trucks at 50 feet would generate up to a maximum of 84 dBA) for each proposed project, the effect on longer-term (hourly or daily) ambient noise levels would be small when compared to existing peak hour traffic volumes on Bonita Avenue (1,458 trips), Damien Avenue (547 trips), and Palomares Street (228 trips) anticipated to be used to access project sites. Generally, a doubling of traffic is required to generate a perceptible increase (3 dBA) in noise. Because construction-related vehicle trips would not approach the existing traffic volumes on surrounding roadways, traffic noise would not increase by 3 dBA, so any noise level increase would not be perceptible to the human ear in an outdoor environment. Therefore, short-term, construction-related impacts associated with worker commutes and equipment transport to the project site would be less than significant.

Project-generated construction noise will vary depending on the phase of construction, specific project proposed under each phase, construction process, type of equipment involved, location of the construction site with respect to sensitive receptors, the schedule proposed to carry out each task (e.g., hours and days of the week) and the duration of the construction work. As no project-specific development applications have been prepared, the following analysis is based on a programmatic worst-case scenario of construction under all phases. For example, demolition and construction under Phase 1 would occur as close as approximately 15 feet from the on-site 100 building and Event Center and 50 feet from the nearest residential uses west of Damien Avenue. Under Phase 2, demolition and construction of select projects would occur as close as 15 feet from the on-site Spartan Hall, 400 Building, Event Center, and Gymnasium, and 50 feet from the nearest residential uses west of Damien Avenue. Under Phase 3, demolition and construction would occur as close as 15 feet from the Event Center and Athletic Maintenance Building and 330 feet from the Joan Macy School/David and Margaret Youth and Family Services Organization to the east. Although not all projects proposed under each phase would occur as close to every sensitive receptor stated above, there is potential for every project to be constructed either 15 feet from on-site school facilities or 50 feet from residential uses, with some projects having the potential to be in such proximity to both sensitive uses. Therefore, as a worst-case scenario, noise impacts are analyzed from future construction activities assumed to be as close as 15 feet from on-site school facilities, 50 feet from residential

uses to the west, 80 feet from commercial uses to the west, and 330 feet from the Joan Macy School/David and Margaret Youth and Family Services Organization to the east.

Construction is completed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on the site and, therefore, the noise levels surrounding the site as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. Table O lists typical construction equipment noise levels recommended for noise impact assessments, based on a distance of 50 feet between the equipment and a noise receptor.

Table O: Typical Construction Equipment Noise Levels

Equipment Description	Acoustical Usage Factor[1]	Maximum Noise Level (L_{max}) at 50 Feet[2]
Backhoe	40	80
Compactor (ground)	20	80
Compressor	40	80
Crane	16	85
Dozer	40	85
Dump Truck	40	84
Excavator	40	85
Flatbed Truck	40	84
Forklift	20	85
Front-End Loader	40	80
Grader	40	85
Impact Pile Driver	20	95
Jackhammer	20	85
Pickup Truck	40	55
Pneumatic Tools	50	85
Pump	50	77
Rock Drill	20	85
Roller	20	85
Scraper	40	85
Tractor	40	84
Welder	40	73

Source: Table P. *Noise and Vibration Impact Analysis - Damien High School Master Plan Update.* LSA. January 2019. (Appendix E).

Note: The noise levels reported in this table are rounded to the nearest whole number.

[1] Usage factor is the percentage of time during a construction noise operation that a piece of construction equipment is operating at full power.

[2] Maximum noise levels were developed based on Spec 721.560 from the CA/T program to be consistent with the City of Boston, Massachusetts, Noise Code for the "Big Dig" project.

CA/T = Central Artery/Tunnel FHWA = Federal Highway Administration L_{max} = maximum instantaneous noise level

Typical noise levels range up to 88 dBA maximum instantaneous noise level (L_{max}) at 50 feet during the noisiest construction phases. The site preparation phase, which includes excavation and grading of the site, tends to generate the highest noise levels because the noisiest construction equipment is earthmoving equipment. Project construction is expected to require

the use of a backhoe, pneumatic tools, jackhammers, and dump trucks/flatbed trucks, scrapers, front-end loaders, bulldozers, and water trucks/pickup trucks.[70]

Noise associated with the use of construction equipment is estimated to be between 55 and 85 dBA L_{max} at a distance of 50 feet from the active construction area. As detailed in Table O, the maximum noise level generated by the loudest equipment, the scraper and dozer, is expected to be 85 dBA L_{max} at 50 feet from the equipment. Each doubling of the sound sources with equal strength increases the noise level by 3 dBA. Assuming that each piece of equipment operates at some distance from the other equipment, the worst-case combined noise level would be 88 dBA L_{max} at a distance of 50 feet from the active construction area.

Table P lists the closest sensitive receptors surrounding the project site along with their approximate distance to the construction boundary, and the projected construction noise exposure in terms of maximum noise level (dBA L_{max}) without implementation of mitigation.

Table P: Construction Noise Levels without Mitigation

Sensitive Receptor	Reference Noise Level (dBA L_{max})	Reference Noise Level (dBA L_{eq})	Reference Distance (ft)	Receptor Distance from Construction (ft)	Noise Level (dBA L_{max})
On-site School	88	84	50	15	98
Off-site Residences	88	84	50	50	88
Off-site Commercial	88	84	50	80	84
Off-site School[1]	88	84	50	330	72

Source: Table Q. *Noise and Vibration Impact Analysis - Damien High School Master Plan Update.* LSA. January 2019. (Appendix E).
[1] Joan Macy School/David and Margaret Youth and Family Services Organization.
dBA = A-weighted decibels
ft = foot/feet
L_{max} = maximum instantaneous noise level

On-site school uses would be located as close as 15 feet from the construction boundary and would be exposed to construction noise levels up to 98 dBA L_{max}. In addition, the closest off-site receptors (i.e., the single-family residences to the west, commercial uses to the west, and the Joan Macy School/David and Margaret Youth and Family Services Organization to the east) are located approximately 50 feet, 80 feet, and 330 feet from the construction boundary, respectively. These off-site sensitive receptors would be exposed to construction noise levels of 88 dBA L_{max}, 84 dBA L_{max}, and 72 dBA L_{max}, respectively. Construction noise levels at the Joan Macy School/David and Margaret Youth and Family Services Organization to the east would not exceed the City's daytime construction noise standards of 75 dBA L_{max} from mobile equipment for residential uses (the noise standard for which the school was evaluated), but they would exceed the 60 dBA L_{max} standard from stationary equipment. Additionally, construction noise levels at the commercial uses to the west would not exceed the City's daytime construction noise standards of 85 dBA L_{max} from mobile equipment, but they would exceed the 70 dBA L_{max} standard from stationary equipment. Furthermore, construction noise levels at the on-site school uses and at the closest off-site residences to the west would exceed the City's daytime construction noise standard of 75 dBA L_{max} from mobile equipment and 60 dBA L_{max} from stationary equipment. Therefore, implementation of **Mitigation Measures NOI-1** through **NOI-3**

[70] For the purposes of this analysis, it is assumed all construction equipment would be rubber-tired as opposed to track-mounted.

would be required to reduce construction noise at the closest on-site and off-site sensitive receptors.

Mitigation Measures

MM NOI-1 The construction contractor shall limit all demolition and construction activities to between the hours of 7:00 a.m. and 8:00 p.m. on weekdays and Saturdays. Construction activities are prohibited on Sundays and holidays. In accordance with Chapter 8.20 (Noise Control) of the City of La Verne (City) Municipal Code and Section 12.08.440 (Construction Noise) of the County of Los Angeles Noise Ordinance, the construction contractor shall ensure that construction noise levels do not exceed 75 A-weighted decibels (dBA) maximum instantaneous noise level (L_{max}) for mobile equipment and 60 dBA L_{max} for stationary equipment as measured at the affected buildings of the nearest residential and school sensitive receptors for all development applications prepared pursuant to the Damien High School Master Plan Update. For off-site commercial uses, the noise limits shall be 85 dBA L_{max} for mobile equipment and 70 dBA L_{max} for stationary equipment. Project-specific sensitive receptors comprise on-site school facilities and off-site residential buildings surrounding the project site, as well as off-site commercial uses west of the project site and the off-site Joan Macy School/David and Margaret Youth and Family Services Organization (school) east of the project site.

To verify noise levels during demolition and construction, the project proponent shall retain an acoustical engineer and construction relations officer for each development application prepared pursuant to the Damien High School Master Plan Update. The acoustical engineer shall perform noise level monitoring on the first day of demolition and construction activities and pursuant to a weekly schedule thereafter. The construction relations officer shall serve as a liaison for responding to any community concerns regarding construction noise; the liaison's telephone number(s) shall be prominently displayed at each demolition/construction site for the duration of construction activities.

The findings of the noise monitoring shall be reported to the City Building Official and Community Development Director or designee on a weekly basis. If noise levels during construction do not exceed 75 dBA L_{max} for mobile equipment or 60 dBA L_{max} for stationary equipment as measured at the affected buildings of the nearest residential sensitive receptors (85 dBA L_{max} for mobile equipment or 70 dBA L_{max} for stationary equipment at the nearest commercial uses), no further mitigation is required. However, if noise levels exceed 75 dBA L_{max} for mobile equipment or 60 dBA L_{max} for stationary equipment as measured at the affected buildings of the nearest residential/school sensitive receptors (85 dBA L_{max} for mobile equipment or 70 dBA L_{max} for stationary equipment at the nearest commercial uses), the City Building Official and Community Development Director or designee must be notified immediately and **Mitigation Measure NOI-2** shall apply. This measure shall be implemented to the satisfaction of the City Building Official and Community Development Director or designee.

MM NOI-2 If the acoustical engineer's noise level monitoring results for each development application prepared pursuant to the Damien High School Master Plan Update

indicate noise levels during demolition and construction exceed 75 dBA L_{max} for mobile equipment or 60 dBA L_{max} for stationary equipment as measured at the affected buildings of the nearest residential/school sensitive receptors (85 dBA L_{max} for mobile equipment or 70 dBA L_{max} for stationary equipment at the nearest commercial uses), the project proponent shall implement a variety of noise attenuating features to reduce noise levels to within the City's standards to the maximum extent feasible. Such noise attenuating features may include but would not be limited to:

- A reduction in the number or size of construction equipment to achieve compliant noise levels;
- Equipping all construction equipment with appropriate noise-attenuating devices;
- Maintaining equipment so that vehicles and their loads are secured from rattling and banging;
- Turning equipment off when not in use to avoid unnecessary idling;
- Staging of stationary equipment in areas that will create the greatest distance between construction-related noise sources and noise-sensitive receptors;
- Erection of temporary insulation barriers around stationary equipment;
- Equipping construction vehicles with smart back-up alarms that automatically adjust the sound level of the alarm in response to ambient noise levels, or alternatively, employ human spotters to ensure safety when mobile construction equipment is moving in the reverse direction in lieu of back-up alarms;
- Use of hydraulically or electrically powered impact tools (e.g., jackhammers, pavement breakers, and caisson drills) in lieu of pneumatic tools, when feasible, to avoid noise associated with compressed air exhaust from pneumatically powered tools. When use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used. External jackets on the tools themselves shall be used whenever feasible. Quieter procedures, such as use of drills rather than impact tools, shall be used whenever feasible;
- Temporary construction of a noise attenuation perimeter wall(s) 14 feet high that would provide a noise level reduction of 14 dBA; and/or
- Temporary relocation/reschedule of on-site classroom uses to an area of campus or time at which occupants of structures would be exposed to noise levels not to exceed 75 dBA L_{max} from mobile sources or 60 dBA L_{max} from stationary sources.

The acoustical engineer shall review the effectiveness of the noise attenuating features' ability to reduce demolition and construction noise to within 75 dBA L_{max} for mobile equipment and 60 dBA L_{max} for stationary equipment as measured at the affected buildings of the nearest residential/school sensitive receptors (85 dBA L_{max} for mobile equipment or 70 dBA L_{max} for stationary equipment at the nearest commercial uses). Under conditions where the acoustical engineer in coordination

with the City Building Official, Community Development Director or designee, and Damien High School administrators determine compliance with the City's noise standards would not be technically feasible, and no other reasonable alternative is available to the proponent, **Mitigation Measure NOI-3** shall be implemented. This measure shall be implemented to the satisfaction of the City of La Verne's Building Official and Community Development Director or designee.

MM NOI-3 If the acoustical engineer in coordination with the City Building Official and Community Development Director or designee determine compliance with the City's noise standards would not be technically feasible and no other reasonable alternative is available to the project proponent for any development application prepared pursuant to the Damien High School Master Plan Update, the proponent shall apply for a variance from the requirements of the construction noise standards in accordance with Section 8.20.020 (Amendments) of the City's Noise Ordinance and Section 12.08.580 (Variances) of the County of Los Angeles Noise Ordinance.

A noise variance from the requirements of the construction noise standards may be granted by the City of La Verne's Development Review Committee (DRC) for a period of not to exceed two years, subject to such terms, conditions and requirements as may be deemed reasonable. A noise variance may be granted only if the DRC makes one of the following findings:

1. Additional time is necessary for the applicant to alter or modify his activity, operation or noise source to comply with Section 12.08.440 (Construction Noise) of the County of Los Angeles Noise Ordinance; or
2. The activity, operation or noise source cannot feasibly be done in a manner that would comply with the provisions of Section 12.08.440 (Construction Noise) of the County of Los Angeles Noise Ordinance, and no other reasonable alternative is available to the applicant.

In granting a variance, the DRC may prescribe any conditions or requirements he/it deems necessary to minimize adverse effects upon the community or the surrounding neighborhood. The project proponent shall be required to implement all such conditions or requirements, as verified through inspection by the City Building Official and/or Community Development Director or designee, or otherwise as specified by the DRC.

In granting variances, the DRC shall consider the magnitude of nuisance caused by the offensive noise, the uses of property within the area of impingement by the noise, operations carried on under existing nonconforming rights or conditional use permits or zone variances, the time factors related to study, design, financing and construction of remedial work, the economic factors related to age and useful life of the equipment, the general public interest, health and welfare, the feasibility of plans submitted for correction, and the effect on the community if the variance was refused. The mitigation measure described above shall be implemented to the satisfaction of the City Building Official and Community Development Director or designee.

Implementation of **Mitigation Measure NOI-1** would ensure an acoustical engineer monitors sequential phases of construction, each with its own mix of equipment and, consequently, its

own noise characteristics, to measure noise levels surrounding the site as construction progresses and to advise if project- and/or site-specific noise attenuation features and practices would be required. Additionally, a construction relations officer shall serve as a liaison for responding to any community concerns regarding construction noise. Implementation of **Mitigation Measure NOI-2** would ensure any feasible project- and/or site-specific noise attenuation features and practices would be employed as necessary for each development application prepared pursuant to the Damien High School Master Plan Update. For example, equipping all construction equipment with appropriate noise-attenuating devices, staging of stationary equipment in areas that will create the greatest distance between construction-related noise sources and sensitive receptors, and erection of temporary insulation barriers around stationary equipment is expected to reduce maximum noise levels generated from stationary equipment to below 60 dBA L_{max} at all off-site receptors. However, mobile equipment has the potential to operate within 15 feet of on-site school uses, 50 feet of off-site residential uses to the west, and 80 feet of off-site commercial uses to the west, so **Mitigation Measure NOI-2** includes erection of a 14-foot-high temporary construction noise barrier/curtain that would provide a noise level reduction of 14 dBA. The corresponding construction noise levels are detailed in Table Q.

Table Q: Construction Noise Levels with Mitigation

Sensitive Receptor	Reference Noise Level (dBA L_{max})	Reference Noise Level (dBA L_{eq})	Reference Distance (ft)	Receptor Distance from Construction (ft)	Attenuation from Erection of a 14-foot-high Noise Barrier (dBA)	Noise Level after Mitigation (dBA L_{max})
On-site School	88	84	50	15	14	84
Off-site Residences	88	84	50	50	14	74
Off-site Commercial	88	84	50	80	14	70
Off-site School[1]	88	84	50	330	14	58

Source: Table P: Construction Noise Levels without Mitigation, above.
[1] Joan Macy School/David and Margaret Youth and Family Services Organization.
dBA = A-weighted decibels
ft = foot/feet
L_{max} = maximum instantaneous noise level

As detailed in Table Q, erection of a 14-foot-high temporary construction noise barrier/curtain as specified in **Mitigation Measure NOI-2** would reduce the maximum noise levels from mobile equipment at the nearest off-site residences to 74 L_{max}, which is below the City and County threshold of 75 L_{max} for mobile equipment for residential/school uses. Additionally, noise levels from mobile and stationary equipment at the nearest commercial uses would be reduced to 70 dBA L_{max}, which would not exceed the City and County threshold of 85 dBA L_{max} for mobile equipment or 70 dBA L_{max} for stationary equipment for commercial uses. However, maximum mobile equipment noise levels at the nearest on-site school facilities would measure approximately 84 dBA L_{max}, which still exceeds the City and County threshold of 75 L_{max} for mobile equipment, and noise generated from on-site stationary equipment also is expected to exceed the City and County threshold of 60 dBA L_{max} for stationary equipment at residential/school uses. Accordingly, Damien High School administrators would coordinate with the acoustical engineer to determine the feasibility of temporarily relocating or rescheduling any affected school facility uses to an area of campus or time at which occupants of structures

would be exposed to noise levels not to exceed 75 dBA L_{max} for mobile equipment and 60 dBA L_{max} for mobile equipment in accordance with **Mitigation Measure NOI-2**.

Under conditions where the acoustical engineer in coordination with the City Building Official, Community Development Director or designee, and Damien High School administrators determine compliance with the City's noise standards would not be technically feasible, and no other reasonable alternative is available to the proponent, **Mitigation Measure NOI-3** shall be implemented for any development application submitted under the proposed Master Plan Update demonstrated to be unable to reduce construction noise to within the standards outlined in Section 12.08.440 (Construction Noise) of the County of Los Angeles Noise Ordinance. **Mitigation Measure NOI-3** would entail a request to the County Health Officer and/or City Commission on Environmental Quality to grant a variance from the requirements of Section 12.08.440 (Construction Noise) of the County of Los Angeles Noise Ordinance pursuant to Section 8.20.020 (Amendments) of the City's Noise Ordinance and Section 12.08.580 (Variances) of the County of Los Angeles Noise Ordinance. With implementation of **Mitigation Measures NOI-1** through **NOI-3,** short-term (construction) noise impacts would be reduced to **less than significant with mitigation incorporated**.

Operational Impacts. Long-term noise impacts in the project vicinity may occur from traffic along perimeter roadways; students conversing while occupying new school facilities; truck delivery and truck loading/unloading activities; and parking lot and heating, ventilation, and air conditioning (HVAC) noises associated with the new school facilities. Peak hour or average noise levels do not completely describe a given noise environment because a peak noise may be disturbing if it occurs during times when quiet is most desirable such as evening and sleeping hours. The Community Noise Equivalent Level (CNEL) uses weighted averages of the intensity of a sound, with corrections for time of day, to represent a composite 24-hour noise level. The City uses CNEL to represent its exterior noise standards, as indicated in Table N.

Traffic Noise | Long-term impacts from noise associated with traffic are based on information from the Traffic Impact Analysis for the project (Appendix F). The baseline scenario, with-project scenario, and opening year 2029 without and with project scenarios are evaluated to determine potential traffic noise impacts on off-site sensitive land uses. The guidelines included in the FHWA Highway Traffic Noise Prediction Model (FHWA-RD-77-108) were used to evaluate highway traffic-related noise conditions along roadway segments in the project vicinity. The resultant noise levels are weighted and summed over 24-hour periods to determine the CNEL values.

The standard vehicle mix for Southern California roadways was used for traffic on project study area roadways, and resultant noise levels represent the worst-case scenario, assuming no shielding is provided between the traffic and the location where the noise contours are drawn. Although the project would not generate any new trips, the project-related traffic noise increases are due to the reconfiguration and relocation of parking lots on-site. As detailed in the project-specific Noise and Vibration Impact Analysis (Appendix E), the project-related traffic noise increase would be no greater than 1.4 dBA. Noise level increases below 3 dBA would not be perceptible to the human ear in an outdoor environment. Therefore, traffic noise impacts from project-related traffic on off-site sensitive receptors would be less than significant, and no mitigation is required.

Truck Delivery and Truck Loading/Unloading Activities | Existing truck delivery and truck loading/unloading activities occur on the west side of the project site, adjacent to the existing lunch area approximately 125 feet from the closest residence to the west across Damien Avenue and 200 feet from the closest commercial use to the west across Damien Avenue. Truck delivery and loading/unloading activities occur during school hours. Upon implementation of Phase 1 of the Master Plan Update, the existing lunch area would be demolished and replaced with a Student Center which would serve as a cafeteria for students during lunchtime. Truck loading/unloading activities would continue to occur on the west site of the project site adjacent to the new Student Center building and would remain approximately 125 feet from the closest residence to the west across Damien Avenue and 200 feet from the closest commercial use to the west across Damien Avenue.

Truck delivery and truck loading/unloading activities would continue to occur during school hours and would not occur during the City's prohibited hours between 10:00 p.m. and 6:00 a.m. The location of truck delivery and truck loading/unloading activities would remain in a relatively similar location, and no perceptible noise increases would result from truck delivery and truck loading/unloading activities. Therefore, no off-site noise impacts would occur from on-site truck delivery and truck loading/unloading activities. No mitigation is required.

HVAC Equipment | The existing school buildings have a number of existing rooftop HVAC units, which operate during school hours. The project would construct new buildings that include new rooftop HVAC units. These would operate at the same time as existing HVAC units (i.e., during school hours). New school buildings associated with the project would include a Student Center, wrestling room, various classrooms, a Chapel with classrooms, and a Performing Arts Center. It is assumed that each new school building would have at least four rooftop HVAC units. Rooftop HVAC equipment would generate noise levels of 66.6 dBA L_{eq} at 5 feet based on previous measurements conducted by LSA.

The closest off-site residence is located west of the project across Damien Avenue. The approximate distance from the new rooftop HVAC units to the closest residence to the west across Damien Avenue ranges between 160 feet and 648 feet. At these distances, new HVAC units would generate a noise level of 44 dBA L_{eq}. This noise level is much lower than the measured hourly ambient noise level range of 48 dBA L_{eq} to 60 dBA L_{eq} in this area. Therefore, no off-site noise impacts would occur from new on-site HVAC equipment. No mitigation is required.

Parking Lot Activities. | The project would restripe existing surface parking on the northwestern corner of the project site, reconfigure existing parking lots on the west side of the project site, and construct a new surface parking lot at the southwest corner of the project site. Surface parking activities would generate noise that would potentially impact adjacent land uses. Noise generated from parking activities would include noise generated by vehicles traveling at slow speeds, engine startup noise, car door slams, car horns, car alarms, and tire squeals. These activities would occur during daytime hours. Representative parking activities would generate approximately 60 to 70 dBA L_{max} at 50 feet. However, noise levels generated from parking activities are intermittent in nature.

Restriping existing surface parking on the northwestern corner of the project site and reconfiguring existing parking lots on the west side of the project site would generate noise levels from parking activities similar to existing parking activities at the same distance to the

closest residence to the west across Damien Avenue. No perceptible noise increases would result from parking activities at these two locations.

The new surface parking lot southwest of the project is located approximately 65 feet from the closest residence to the west across Damien Avenue and approximately 80 feet from the closest light industrial use to the south across Palomares Street. At a distance of 65 feet and 80 feet, noise would be attenuated by 2 dBA and 4 dBA, respectively, compared to the noise level measured at 50 feet from the source. Noise generated from the new surface parking lot southwest of the project would reach 68 dBA L_{max} (70 dBA - 2 dBA = 68 dBA) and 66 dBA L_{max} (70 dBA - 4 dBA = 66 dBA), respectively. Intermittent noise levels from parking activities would not exceed the City's exterior maximum daytime noise standard of 70 dBA L_{max} for residential uses and 90 dBA L_{max} for industrial uses. Therefore, no off-site exterior noise impacts would occur from the new surface parking lot located southwest of the project site. No mitigation is required.

Based on the United States Environmental Protection Agency's (EPA) Protective Noise Levels, with a combination of exterior walls, doors, and windows, standard construction for Southern California (warm climate) commercial or residential buildings would provide more than 24 dBA in exterior-to-interior noise reduction with windows closed and 12 dBA or more with windows open (the national average is 25 dBA with windows closed and 15 dBA with windows open).[71] With windows and doors open, interior noise levels at these buildings would be 56 dBA L_{max} (68 dBA - 12 dBA = 56 dBA). With windows and doors closed, interior noise levels would be 44 dBA L_{max} (68 dBA - 24 dBA = 44 dBA). Although intermittent noise levels from parking activities would exceed the City's interior noise standard of 55 dBA L_{max} for residential uses with windows and doors open, the City's interior noise standard would not be exceed with windows and doors closed. As existing residences would have mechanical ventilation systems such as air conditioning, off-site interior noise impacts from the new surface parking lot would be less than significant. No mitigation is required.

Table M, above, details the applicable operational noise standards from the Section 12.08.390 of the County Noise ordinance; however, Section 12.08.570(C) (Activities Exempt from Chapter Restrictions) indicates activities conducted on public playgrounds and public or private school grounds, including but not limited to school athletic and school entertainment events, are exempt from the provisions of the County Noise Ordinance. Therefore, operational noise impacts generated from operation of development projects proposed under the Master Plan Update would be **less than significant**. No mitigation is required.

b) Potentially Significant Unless Mitigation Incorporated. According to the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment, it would take a minimum of 90 vibration velocity in decibels (VdB) (or 0.12 in/sec peak particle velocity (PPV)) to cause damage to buildings extremely susceptible to vibration, and 94 VdB (or 0.20 in/sec PPV) to cause damage to non-engineered timber and masonry buildings.

Groundborne noise and vibration from construction activity would be mostly low to moderate. Loaded trucks and other rubber-tire construction equipment generate approximately 86 VdB of groundborne vibration when measured at 25 feet, as detailed in Table R. This range of groundborne vibration levels would dissipate with distance from the project site.

[71] *Protective Noise Levels, Condensed Version of EPA Levels Document.* EPA 550/9-79-100. United States Environmental Protection Agency. November 1978.

The closest structures to the project site are the existing on-site school facilities, some of which were constructed in the 1920s and 1930s, rendering them susceptible to vibration damage. Table S lists the projected vibration level from construction equipment expected to be used on the project site to the nearest buildings in the project vicinity.

Table R: Vibration Source Amplitudes for Construction Equipment

Equipment	Reference PPV/L_V at 25 ft	
	PPV (in/sec)	L_V (VdB)[1]
Pile Driver (Impact), Typical	0.644	104
Pile Driver (Sonic), Typical	0.170	93
Vibratory Roller	0.210	94
Hoe Ram	0.089	87
Large Bulldozer	0.089	87
Caisson Drilling	0.089	87
Loaded Trucks[2]	**0.076**	**86**
Jackhammer[2]	**0.035**	**79**
Small Bulldozer[2]	**0.003**	**58**

Source: Table R. *Noise and Vibration Impact Analysis - Damien High School Master Plan Update.* LSA. January 2019. (Appendix E).

[1] RMS vibration velocity in decibels (VdB) is 1 µin/sec.
[2] Equipment shown in **bold** is expected to be used on-site.

µin/sec = microinches per second
ft = foot/feet
FTA = Federal Transit Administration
in/sec = inch/inches per second
L_V = velocity in decibels
PPV = peak particle velocity
RMS = root-mean-square
VdB = vibration velocity decibels

Table S: Summary of Construction Vibration Levels

Land Use	Direction	Equipment/Activity	Reference Vibration Level (VdB) at 25 ft	Reference Vibration Level (PPV) at 25 ft	Distance (ft)	Maximum Vibration Level (VdB)	Maximum Vibration Level (PPV)
On-site Old School Buildings[1]	N/A	Small bulldozers	58	0.003	15	65	0.006
		Loaded trucks	86	0.076	15	93	0.164
		Jackhammers	79	0.035	15	86	0.075
On-site School Buildings[2]	N/A	Small bulldozers	58	0.003	15	65	0.006
		Loaded trucks	86	0.076	15	93	0.164
		Jackhammers	79	0.035	15	86	0.075
Residential Buildings	West	Small bulldozers	58	0.003	75	44	0.001
		Loaded trucks	86	0.076	75	72	0.015
		Jackhammers	79	0.035	75	65	0.007
Off-site School Buildings[3]	East	Small bulldozers	58	0.003	370	23	0.000
		Loaded trucks	86	0.076	370	51	0.001
		Jackhammers	79	0.035	370	82	0.049

Table S: Summary of Construction Vibration Levels

Land Use	Direction	Equipment/Activity	Reference Vibration Level (VdB) at 25 ft	Reference Vibration Level (PPV) at 25 ft	Distance (ft)	Maximum Vibration Level (VdB)	Maximum Vibration Level (PPV)

Source: Table S. *Noise and Vibration Impact Analysis - Damien High School Master Plan Update.* LSA. January 2019. (Appendix E).
Note: Old school buildings on site (Spartan Hall and Buildings 100, 200, 300 [north end], and 400) were evaluated using the FTA-recommended building damage threshold of 0.12 PPV (in/sec) (approximately 90 VdB). Other on-site and off-site school buildings and off-site residential buildings were evaluated using the FTA-recommended building damage threshold of 0.2 PPV (in/sec) (approximately 94 VdB).
[1] School buildings constructed in the 1920s and 1930s (Spartan Hall and Buildings 100, 200, 300 [north end], and 400)
[2] School buildings that were constructed in the 1960s or later.
[3] Joan Macy School/David and Margaret Youth and Family Services Organization

ft = foot/feet
FTA = Federal Transit Administration
in/sec = inches per second
PPV = peak particle velocity
VdB = vibration velocity decibels

Construction equipment expected to be used with the highest vibration generation potential includes small rubber-tired bulldozers, loaded trucks, and jackhammers, which would generate 58 VdB (0.003 PPV), 86 VdB (0.076 PPV), and 79 VdB (0.035 PPV) at 25 feet, respectively. On-site school buildings (old or not) would be located approximately 15 feet from the construction boundary. As shown in Table S, on-site school buildings (old or not) would experience vibration levels of up to 93 VdB (0.164 PPV [in/sec]) from loaded trucks operating at 15 feet from buildings. This vibration level would exceed the FTA threshold of 90 VdB (0.12 PPV [in/sec]) for building damage from operation of loaded trucks within 15 feet of school buildings constructed in the 1920s and 1930s (Spartan Hall and Buildings 100, 200, 300 [north end], and 400), but it would not exceed the 94 VdB (0.20 PPV [in/sec]) threshold for non-engineered timber and masonry buildings constructed since the 1960s. Mitigation is required to reduce vibration impacts to school buildings constructed in the 1920s and 1930s (Spartan Hall and Buildings 100, 200, 300 [north end], and 400).

Mitigation Measures

MM NOI-4 During demolition and construction activities, the project proponent shall ensure all contractors prohibit loaded trucks from operating within 20 feet of Spartan Hall and Buildings 100, 200, 300 (north end), and 400. These are buildings identified to be potentially susceptible to vibration damage during demolition and construction of the projects proposed under the Master Plan Update. Temporary on-site signage in the immediate proximity of Spartan Hall and Buildings 100, 200, 300 (north end), and 400 shall be erected notifying construction personnel of the prohibition. The temporary signage shall clearly indicate loaded trucks are prohibited from operating within 20 feet of Spartan Hall and Buildings 100, 200, 300 (north end), and 400, the standard language of which shall be determined through coordination between the construction site contractor, Damien High School representatives, and the Community Development Director or designee. The temporary installation of appropriate signage shall be verified by an acoustical engineer on the first day of demolition and construction activities and pursuant to a weekly schedule thereafter. This measure shall be implemented to the satisfaction of the City Building Official and Community Development Director or designee.

With implementation of **Mitigation Measure NOI-4** prohibiting loaded trucks from operating within 20 feet of school buildings constructed in the 1920s and 1930s (Spartan Hall and Buildings

100, 200, north end of 300, and 400), construction vibration levels at these buildings would be reduced to 89 VdB (0.106 PPV [in/sec]). This vibration level would not exceed the FTA threshold of 90 VdB (0.12 PPV [in/sec]) for building damage.

The closest off-site residential building and the closest building associated with the Joan Macy School/David and Margaret Youth and Family Services Organization are located approximately 75 feet and 370 feet, respectively, from the nearest project construction boundary under any phase of the Master Plan Update. As shown in Table S, the closest off-site residential building and the closest building associated with the Joan Macy School/David and Margaret Youth and Family Services Organization would experience vibration levels of up to 72 VdB (0.015 PPV [in/sec]) and 51 VdB (0.001 PPV [in/sec]), respectively. These vibration levels would not exceed either the 90 VdB (0.12 PPV [in/sec]) FTA threshold for damage to buildings extremely susceptible to vibration or the 94 VdB (0.20 PPV [in/sec]) FTA threshold for damage to non-engineered timber and masonry buildings constructed since the 1960s.

Vibration standards included in the FTA's *Transit Noise and Vibration Impact Assessment* are used in this analysis for groundborne vibration impacts on human annoyance, as shown in Table T.

Table T: Groundborne Vibration and Groundborne Noise Impact Criteria for General Assessment

Land Use Category	Groundborne Vibration Impact Levels (VdB re 1 µin/sec)			Groundborne Noise Impact Levels (dB re 20 µPa)		
	Frequent[1] Events	Occasional[2] Events	Infrequent[3] Events	Frequent[1] Events	Occasional[2] Events	Infrequent[3] Events
Category 1: Buildings where low ambient vibration is essential for interior operations.	65 VdB[4]	65 VdB[4]	65 VdB[4]	N/A[5]	N/A[5]	N/A[5]
Category 2: Residences and buildings where people normally sleep.	72 VdB	75 VdB	80 VdB	35 dBA	38 dBA	43 dBA
Category 3: Institutional land uses with primarily daytime use.	75 VdB	78 VdB	83 VdB	40 dBA	43 dBA	48 dBA

Source: Table E. *Noise and Vibration Impact Analysis - Damien High School Master Plan Update.* LSA. January 2019. (Appendix E).

[1] Frequent events are defined as more than 70 events per day.
[2] Occasional events are defined as between 30 and 70 events per day.
[3] Infrequent events are defined as fewer than 30 events per day.
[4] This criterion limit is based on levels that are acceptable for most moderately sensitive equipment, such as optical microscopes. Vibration-sensitive manufacturing or research will require detailed evaluation to define the acceptable vibration levels. Ensuring lower vibration levels in a building often requires special design of the HVAC systems and stiffened floors.
[5] Vibration-sensitive equipment is not sensitive to groundborne noise.

µin/sec = microinches per second
µPa = micropascals
dB = decibels
dBA = A-weighted decibels
FTA = Federal Transit Administration
HVAC = heating, ventilation, and air conditioning
N/A = not applicable
VdB = vibration velocity decibels

Construction vibration levels would not result in annoyance for off-site residences to the west or off-site school buildings to the east because construction vibration levels would not reach the annoyance thresholds of 78 VdB and 75 VdB of these respective land uses. However, construction vibration levels would have the potential to result in annoyance for on-site school uses because construction vibration levels would exceed 75 VdB. Vibration levels for on-site school uses would be both temporary and intermittent in nature and would no longer occur

once construction of the project is completed. Implementation of **Mitigation Measure NOI-4** to prohibit loaded trucks from operating within 20 feet of old school buildings on-site (Spartan Hall and Buildings 100, 200, north end of 300 [north end], and 400) would avoid potential damage to these buildings. Therefore, implementation of **Mitigation Measure NOI-4** would reduce construction vibration impacts to **less than significant with mitigation incorporated**.

c) Less than Significant Impact. LSA conducted four long-term (24-hour) measurements to document the existing noise environment in the project area on August 27, 2018 using four DLX NoisePro Dosimeters. The project-specific Noise and Vibration Impact Analysis (Appendix E) details hourly equivalent continuous sound level (L_{eq}) results from the long-term measurements and shows the calculated CNEL levels from the long-term noise level measurements. As detailed in Appendix E, the L_{eq} levels of the project area range from 43 to 67 dBA L_{eq}, and the calculated CNEL levels of the project area range from 56.0 to 65.7 dBA CNEL.

As detailed in response to Checklist Question XIIa, the project would not generate any new vehicle trips, so any project-related traffic noise increases would be due to the reconfiguration and relocation of parking lots on-site. As detailed in the project-specific Noise and Vibration Impact Analysis (Appendix E), the project-related traffic noise increase would be no greater than 1.4 dBA. Noise level increases below 3 dBA would not be perceptible to the human ear in an outdoor environment. Therefore, traffic noise impacts from project-related traffic on off-site sensitive receptors would be less than significant, and no mitigation is required.

Truck delivery and truck loading/unloading activities would continue to occur during school hours and would not occur during the City's prohibited hours between 10:00 p.m. and 6:00 a.m. The location of truck delivery and truck loading/unloading activities would remain in a relatively similar location, and no perceptible noise increases would result from truck delivery and truck loading/unloading activities. Therefore, no off-site noise impacts would occur from on-site truck delivery and truck loading/unloading activities. No mitigation is required.

The existing school buildings have a number of existing rooftop HVAC units, which operate during school hours. The project would construct new buildings that include new rooftop HVAC units. These would operate at the same time as existing HVAC units (i.e., during school hours). New school buildings associated with the project would include a Student Center, wrestling room, various classrooms, a Chapel with classrooms, and a Performing Arts Center. It is assumed that each new school building would have at least four rooftop HVAC units. Rooftop HVAC equipment would generate noise levels of 66.6 dBA L_{eq} at 5 feet based on previous measurements conducted by LSA. The closest off-site residence is located west of the project across Damien Avenue. The approximate distance from the new rooftop HVAC units to the closest residence to the west across Damien Avenue ranges between 160 feet and 648 feet. At these distances, new HVAC units would generate a noise level of 44 dBA L_{eq}. This noise level is much lower than the measured hourly ambient noise level range of 48 dBA L_{eq} to 60 dBA L_{eq} in this area. Therefore, no off-site noise impacts would occur from new on-site HVAC equipment. No mitigation is required.

Restriping existing surface parking on the northwestern corner of the project site and reconfiguring existing parking lots on the west side of the project site would generate noise levels from parking activities similar to existing parking activities at the same distance to the closest residence to the west across Damien Avenue. No perceptible noise increases would result from parking activities at these two locations. The new surface parking lot southwest of

the project is located approximately 65 feet from the closest residence to the west across Damien Avenue and approximately 80 feet from the closest light industrial use to the south across Palomares Street. As detailed in response to Checklist Question XIIa, noise generated from the new surface parking lot southwest of the project would reach 68 dBA L_{max} and 66 dBA L_{max}, respectively, and therefore would not exceed the City's exterior maximum daytime noise standard of 70 dBA L_{max} for residential uses and 90 dBA L_{max} for industrial uses. Additionally, although intermittent noise levels from parking activities would exceed the City's interior noise standard of 55 dBA L_{max} for residential uses with windows and doors open, a 24 dBA exterior-to-interior noise reduction with the windows closed condition would result in an interior noise level of 44 dBA L_{max}, which is below the City's interior noise standard. As existing residences would have mechanical ventilation systems such as air conditioning, off-site interior noise impacts from the new surface parking lot would be less than significant. No mitigation is required.

The project site is an existing high school campus, and the proposed project would perpetuate the use of the project site as a high school. The proposed project would be substantially similar to the existing land use, and no increase in student enrollment or faculty/staff is anticipated. Therefore, impacts related to a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project would be **less than significant.** No mitigation is required.

d) Potentially Significant Unless Mitigation Incorporated. LSA conducted four long-term (24-hour) measurements to document the existing noise environment in the project area on August 27, 2018 using four DLX NoisePro Dosimeters. The project-specific Noise and Vibration Impact Analysis (Appendix E) details hourly equivalent continuous sound level (L_{eq}) results from the long-term measurements and shows the calculated CNEL levels from the long-term noise level measurements. As detailed in Appendix E, the L_{eq} levels of the project area range from 43 to 67 dBA L_{eq}.

As detailed in response to Checklist Question XIIIa, construction-related vehicle trips would not approach the existing traffic volumes on surrounding roadways. Therefore, construction-related traffic noise would not increase by 3 dBA, so any noise level increase would not be perceptible to the human ear in an outdoor environment.

As detailed in Table O, noise associated with the use of construction equipment is estimated to be between 55 and 85 dBA L_{max} at a distance of 50 feet from the active construction area. Based on a usage factor of 40 percent, the worst-case combined noise level during site preparation and grading would be 84 dBA L_{eq} at a distance of 50 feet from the active construction area. Table U lists the closest sensitive receptors surrounding the project site along with their approximate distance to the construction boundary, and the projected construction noise exposure in terms of equivalent continuous sound level (dBA L_{eq}) without implementation of mitigation.

Table U: Construction Noise Levels without Mitigation

Sensitive Receptor	Reference Noise Level (dBA L_{max})	Reference Noise Level (dBA L_{eq})	Reference Distance (ft)	Receptor Distance from Construction (ft)	Noise Level (dBA L_{eq})
On-site School	88	84	50	15	94
Off-site Residences	88	84	50	50	84

Table U: Construction Noise Levels without Mitigation

Sensitive Receptor	Reference Noise Level (dBA L_{max})	Reference Noise Level (dBA L_{eq})	Reference Distance (ft)	Receptor Distance from Construction (ft)	Noise Level (dBA L_{eq})
Off-site Commercial	88	84	50	80	80
Off-site School[1]	88	84	50	330	68

Source: Table Q. *Noise and Vibration Impact Analysis - Damien High School Master Plan Update.* LSA. January 2019. (Appendix E).
[1] Joan Macy School/David and Margaret Youth and Family Services Organization.
dBA = A-weighted decibels
ft = foot/feet
L_{eq} = equivalent continuous sound level

On-site school uses would be located as close as 15 feet from the construction boundary and would be exposed to construction noise levels up to 94 dBA L_{eq}. In addition, the closest off-site sensitive receptors are located at distances ranging from approximately 50 feet to 330 feet from the construction boundary. These off-site receptors would be exposed to construction noise levels ranging from 68 dBA L_{eq} to 84 dBA L_{eq}. The ambient noise levels of the project area range from 43 to 67 dBA L_{eq}, with the loudest ambient noise generally occurring during the 7:00 a.m. to 8:00 a.m. school start and 3:00 p.m. to 4:00 p.m. school dismissal (Appendix E). The construction activities would generate noise levels in excess of ambient levels, thus **Mitigation Measures NOI-1** through **NOI-3** are required to reduce construction noise in the project vicinity.

Table V: Construction Noise Levels with Mitigation

Sensitive Receptor	Reference Noise Level (dBA L_{max})	Reference Noise Level (dBA L_{eq})	Reference Distance (ft)	Receptor Distance from Construction (ft)	Attenuation from Erection of a 14-foot-high Noise Barrier (dBA)	Noise Level after Mitigation (dBA L_{eq})[2]
On-site School	88	84	50	15	14	80
Off-site Residences	88	84	50	50	14	70
Off-site Commercial	88	84	50	80	14	66
Off-site School[1]	88	84	50	330	14	54

Source: Table U: Construction Noise Levels without Mitigation, above.
[1] Joan Macy School/David and Margaret Youth and Family Services Organization.
[2] The Community Noise Equivalent Level is the time-varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noise occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and a 10 dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours).
dBA = A-weighted decibels
ft = foot/feet
L_{eq} = equivalent continuous sound level
L_{max} = maximum instantaneous noise level

With implementation of **Mitigation Measure NOI-1**, demolition and construction activities shall be limited to between the daytime hours of 7:00 a.m. and 8:00 p.m., during which time existing ambient noise levels are at their highest. Additionally, Table V identifies the erection of a 14-foot-high temporary construction noise barrier/curtain as specified in **Mitigation Measure NOI-2** would reduce the noise levels at the Joan Macy School/David and Margaret Youth and Family Services Organization to 54 dBA L_{eq}, at the nearest off-site commercial uses to 66 dBA L_{eq}, and at the nearest off-site residences to 70 dBA L_{eq}, which is still approximately 3 dBA L_{eq} above the

highest existing ambient noise level of 67 dBA L_{eq} in the project vicinity. However, Policy 1.1(f) of the City's General Plan Noise Element identifies proposed projects would be considered to have a significant adverse impact on the environment if the expected noise increase exceeds 5 dB. Therefore, temporary increases in noise levels at the nearest off-site residences would be **less than significant with mitigation incorporated.**

As indicated in Table U, noise levels during construction at on-site school uses would reach 94 dBA L_{eq}. The temporary construction of a 14-foot-high noise attenuation barrier**,** would reduce construction noise levels at the nearest on-site school facilities by 14 dBA from 94 dBA L_{eq} to approximately 80 dBA $L_{eq,}$ as indicated in Table V. However, the construction noise levels would still measure approximately 13 dBA L_{eq} above the highest existing ambient noise level of 67 dBA L_{eq} in the project vicinity. Accordingly, Damien High School administrators would coordinate with the acoustical engineer to determine the feasibility of temporarily relocating or rescheduling any affected school facility uses to an area of campus or time at which occupants of structures would be exposed to noise levels not to exceed 67 dBA L_{eq} plus 5 dB in accordance with **Mitigation Measure NOI-2**.

Under conditions where the acoustical engineer in coordination with the City Building Official, Community Development Director or designee, and Damien High School administrators determine temporary relocation or rescheduling of any affected school facility uses to an area of campus or time at which occupants of structures would be exposed to noise levels not to exceed 67 dBA L_{eq} plus 5 dB would not be technically feasible, and no other reasonable alternative is available to the proponent, **Mitigation Measure NOI-3** shall be implemented for any development application submitted under the proposed Master Plan Update demonstrated to be unable to reduce construction noise to 67 dBA L_{eq} plus 5 dB. **Mitigation Measure NOI-3** would entail a request to the City Commission on Environmental Quality to grant a variance from the requirements of Section 12.08.440 (Construction Noise) of the County of Los Angeles Noise Ordinance pursuant to Section 8.20.020 (Amendments) of the City's Noise Ordinance and Section 12.08.580 (Variances) of the County of Los Angeles Noise Ordinance. With implementation of **Mitigation Measures NOI-1** through **NOI-3,** impacts related to a substantial temporary increase in ambient noise levels in the project vicinity above levels existing without the project would be reduced to **less than significant with mitigation incorporated**.

e-f) No Impact. The project site is located approximately 0.5 mile north of Bracket Field Airport and no private airstrips are in the vicinity of the project site. According to the Noise and Overflight Factors Map in the Brackett Field ALUCP, the project site is outside the 60 dBA CNEL noise contour of Brackett Field Airport.[72] Therefore, the proposed project would not expose future residents to significant levels of public or private aircraft noise. **No impact** would occur and no mitigation is required.

Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact

[72] *Brackett Field Airport Land Use Compatibility Plan.* Exhibit 5: Noise and Overflight Factors Map. Los Angeles County Airport Land Use Commission. Adopted December 9, 2015.

XIII. Population and Housing

Would the project:

a)	Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
b)	Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c)	Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion

a) Less Than Significant Impact. According to data provided by the United States Census Bureau, the population of the City as of July 1, 2017 is estimated at 32,461, and the City's average household size is approximately 2.80 residents per housing unit.[73] Since implementation of the proposed Master Plan Update does not include an increase in student enrollment or faculty/staff, there would be no substantial population growth in the City or region. Furthermore, the project site is located within an urbanized area and would be connected to existing municipal roadways and utility infrastructure. The project would not include the construction of new roadways or infrastructure beyond those which would serve only the project site. Therefore, the project would not induce substantial population growth in an area, either directly or indirectly. Impacts would be **less than significant**, and no mitigation is required.

b,c) No Impact. The proposed project entails an update to the Damien High School Master Plan. Except for the Priest's residence, which will remain in place (refer to Figure 3), no housing exists on-site; therefore, **no impact** relative to the displacement of housing and people would occur. No mitigation is required.

	Potentially Significant Impact	**Potentially Significant Unless Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
XIV. Public Services				
a) Would the project result in substantial adverse physical impacts associated with				

[73] *La Verne City, California.* United States Census Bureau. https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml?src=bkmk (Accessed August 7, 2018). 32,461 residents ÷ 11,598 total housing units = 2.80 residents per housing unit.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
XIV. Public Services				
the provision of new or physically altered governmental facilities, or the 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:				
i) Fire protection?	☐	☐	☒	☐
ii) Police protection?	☐	☐	☒	☐
iii) Schools?	☐	☐	☒	☐
iv) Parks?	☐	☐	☒	☐
v) Other public facilities?	☐	☐	☒	☐

Discussion

a(i) Less Than Significant Impact. The La Verne Fire Department (LVFD) would provide fire protection services to the project site. The project site is developed with a high school campus and surrounded by residential uses to the north and west across Bonita Avenue and Damien Avenue, respectively. The project site is bordered to the east by the campus of the Joan Macy School/David and Margaret Youth and Family Services Organization, residential uses, and commercial uses. South of the project site are light industrial uses across Palomares Avenue. The nearest fire station in proximity to the project site is La Verne Fire Station 1 located at 2061 3rd Street, La Verne, (approximately one mile east of the site) with an estimated three- to four-minute travel time to the site. The next-nearest fire station is the Los Angeles County Fire Department Station 64 located at 164 S Walnut Avenue, San Dimas, (approximately one mile west of the site) with an estimated 3- to 4-minute travel time to the site. As detailed in the City's General Plan, Public Safety Policy 1.1(a), the City typically maintains a seven minute response time to emergency calls.

The project site is an existing high school campus in a developed area and is already served by the LVFD. Since first responders already patrol the project vicinity and surrounding areas, compliance with California Vehicle Code 21806(A)(1), which requires all vehicles to yield to emergency vehicles, would ensure implementation of the proposed project would not adversely affect travel time between the nearest fire station and the project site, which is expected to be between three and five minutes. Therefore, the project is consistent with the City's response time standard.

Since implementation of the proposed Master Plan Update does not include an increase in student enrollment or faculty/staff, there would be no substantial population growth in the City or region. Furthermore, the project site is located within an urbanized area and would be

connected to existing municipal roadways and utility infrastructure. Implementation of the Master Plan Update could incrementally increase the demand for fire protection services due to additional facilities proposed on-site, but not to the degree that the existing fire stations could not meet the demand. The project site is not located in an area identified as a Fire Hazard Severity Zone,[74] and all future construction and development within the project site would be required to comply with applicable provisions of the California Building Code (CBC), as amended, and the City's adopted fire code pursuant to Chapter 15.32 of the City Municipal Code.

Chapter 7 of the CBC regards Fire and Smoke Protection Features, including construction of buildings with ignition-resistant materials and fire sprinklers, through mitigating structural vulnerabilities. Construction techniques and materials include roofs, eaves, exterior walls, vents, appendages, windows, and doors and result in hardened structures that have been proven to perform at high levels (resist ignition) during the typically short duration of exposure to fires. Should embers succeed in entering a structure, sprinklers provide an additional layer of life safety and structure protection. The result is highly ignition-resistant structures equipped with interior fire sprinklers that are effective at controlling fires in 88 percent of fires large enough to activate them, reduce death rates by 87 percent per 1,000 fires compared to properties without sprinklers, and reduce civilian and firefighter injury rates by 27 percent and 67 percent, respectively, per 1,000 fires compared to properties without sprinklers.[75]

Compliance with the CBC, as amended, and the City's adopted fire code pursuant to Chapter 15.32 of the City Municipal Code would aid fire-fighting personnel and minimize the demand placed on the existing emergency services system. Additionally, through the execution of mutual aid agreements maintained with surrounding cities (i.e., San Dimas, Pomona, and Claremont) and with the Los Angeles County Fire Department, the City will have the additional firefighting support of nearby fire departments to provide assistance during major emergencies.

Final development plans would be provided to the City for approval by the Development Review Committee, including the LVFD, pursuant to Chapter 18.16 (Development Review) to ensure compliance with all applicable regulations pertaining to fire prevention and protection standards, including, but not limited to, fire sprinklers, sufficient emergency access, emergency notification procedures, and fire hydrant locations. The City of La Verne also collects fire service and development impact fees from all development projects proposed in the City. The proposed project would be required to pay the applicable development impact fees, which would be used to fund the capital costs associated with acquiring land for new fire stations, constructing new fire stations, purchasing new fire equipment for such stations, and providing additional staff as needed to serve the community of La Verne. Any future construction of new or expansion of existing fire protection facilities would be subject to project-level environmental review and site-specific mitigation as appropriate in order to ensure significant environmental impacts are avoided or mitigated. However, it is reasonable to conclude that implementation of the proposed Master Plan Update on an existing school site without an increase in student enrollment or faculty/staff and constructed in accordance with applicable policies and regulations would not require new or physically altered fire protection facilities, the

[74] *CAL FIRE Fire Hazard Severity Zones.* Los Angeles County. Fire and Resource Assessment Program, California Department of Forestry and Fire Protection. September 2011.

[75] *U.S. Experience with Sprinklers, Fact Sheet, Sprinklers in Reported U.S. Fires during 2010 to 2014.* National Fire Protection Association. July 2017. http://www.nfpa.org/news-and-research/fire-statistics-and-reports/fire-statistics/fire-safety-equipment/us-experience-with-sprinklers (Accessed August 21, 2018).

construction of which could cause significant environmental impacts. Therefore, impacts would be **less than significant**, and no mitigation is required.

a(ii) Less Than Significant Impact. Police services to the project site would be provided by the La Verne Police Department (LVPD). The police station nearest to the project site is located at 2061 Third Street, approximately one mile east of the project site. The project would not increase population growth within the City; therefore, the project would not result in the demand of new or expanded police services.

La Verne's Police Department website highlights the City's patrol divisions with respect to public safety, with 40 sworn officers currently assigned to the city's streets. LVPD additionally consists of 18 professional staff members, a reserve force of up to 25 officers, a retired senior volunteer program of 35 members, and the department maintains a type 1 jail and state-of-the-art indoor shooting range.[76] The City monitors police staffing levels as part of the annual budgeting process to ensure that adequate police protection can continue even after new development projects are approved and constructed. Therefore, projections made by LVPD and the City ensure that adequate police protection will be maintained as individual development projects of the Master Plan are proposed.

LVPD comprises two major divisions for the prevention and suppression of crime, as well as a consolidated communications dispatch operation to serve as the first responder to emergency calls. The project site is an existing high school campus in a developed area and is already served by the LVPD. Since first responders already patrol the project vicinity and surrounding areas, and the project does not entail an increase in student enrollment or faculty/staff through buildout of the Master Plan Update, compliance with California Vehicle Code 21806(A)(1), which requires all vehicles to yield to emergency vehicles, would ensure implementation of the proposed project would not adversely affect the City's response time standard of 3.30 minutes.

The project would be designed and operated per applicable standards required by the City for new development with regard to public safety. The project would be required to pay development impact fees used to fund capital costs associated with constructing new public safety structures and purchasing equipment for new public safety structures. In addition, the City maintains mutual aid agreements with police agencies in the surrounding cities (e.g., San Dimas, Pomona, and Claremont) and with the Los Angeles County Sheriff's Department, which allow for the services of nearby police departments to assist the LVPD during major emergencies. Payment of development impact fees commensurate with the increased demand for services in the City would offset any increase in demand for police services.

Pursuant to Chapter 18.16 (Development Review), any future construction of new or expansion of existing police protection facilities would be subject to project-level environmental review and site-specific mitigation as appropriate in order to ensure significant environmental impacts are avoided or mitigated. However, it is reasonable to conclude that implementation of the proposed Master Plan Update on an existing high school campus without increasing student enrollment or faculty/staff would not require new or physically altered police protection facilities, the construction of which could cause significant environmental impacts. Therefore, impacts would be **less than significant,** and no mitigation is required.

[76] *Department Vision Statement.* City of La Verne Police Department. 2018. http://www.lvpd.org/ (Accessed August 31, 2018).

a(iii) No Impact. The City is home to six public schools under the jurisdiction of the Bonita Unified School District (BUSD), and three private schools. Damien High School is a private school under the jurisdiction of the Roman Catholic Archdiocese of Los Angeles. The City does not have jurisdiction with respect to the location, design, or construction of public school facilities. However, the City works with the BUSD concerning the design of roads and other public improvements in and around school sites, and is responsible for fire, police, and public safety concerns involving all facilities within the City, including both public and private schools.

The project would result in an increase in land use density on the project site. However, Damien High School is not projecting an increase in student enrollment or faculty/staff throughout the life of the Master Plan. Therefore, there would be no potentially significant impacts to service ratios or other performance objectives that would require the provision of new or physically altered school facilities within the City, with the exception of the project site itself. There would be no significant environmental effects specifically related to the provision of new or physically altered school facilities, or the need for new or physically altered school facilities, that are not encompassed within the project's construction footprint and therefore already identified, disclosed, and subject to all applicable mitigation measures, as well as local, state, and federal regulations, as part of this Initial Study. Therefore impacts would be **less than significant**, and no additional mitigation is required.

a(iv) Less Than Significant Impact. The Damien High School Master Plan Update seeks to resolve immediate needs and desires regarding new academic facilities and internal campus circulation through the removal of six underutilized tennis courts and a undersized baseball field to facilitate construction of four new buildings totaling approximately 73,100 sf of new building space, including a 5,000 square-foot wrestling room, new team locker rooms, two new basketball/sport courts, as well as several alterations to select hardscaped areas and parking lots. Upon execution of all [three] phases of the proposed Master Plan Update, Damien High School would include a total of approximately 199,859 sf of academic, administrative, and athletic facilities to support a progressive academic curriculum and anticipated athletic demand on campus.[77]

Damien High School representatives have identified educational and spiritual needs to be of more importance for the land currently devoted for the tennis courts. The tennis team will take advantage of off-site tennis courts on an as-needed basis, which is expected to be an incremental increase in off-site demand for tennis facilities due to the small size of the Damien High School tennis program.

The nearest park in proximity to the project site is Wheeler Avenue Park, located at 1499 Palomares Avenue. This 5.7-acre park features a playground for children, athletic fields for softball and soccer, basketball courts, picnic tables, public parking, and a snack bar. The next nearest park in proximity to the project site is Kuns Park, located at 1600 Bonita Avenue. This 2.5-acre park features a playground for children, a sheltered picnic area available for private rental, picnic tables, and the oldest tree in the City.[78]

The project would result in an increase in land use density on the project site, and the City will require the payment of park, recreation, and open space fees as part of any future development proposed under the Master Plan Update, as specified in City Municipal Code Chapter 3.20 (Parks and Recreation Charges). The amount of the fee would be equal to the new development's fair

[77] 132,731 sf of existing facilities minus 5,972 sf of demolition plus 73,100 sf of new construction = total of 199,859 sf

[78] *Parks.* City of La Verne. http://www.ci.la-verne.ca.us/index.php/residents/parks (Accessed September 4, 2018).

share of the costs of developing new parks, open space and recreation facilities, including the acquisition, design, and construction. The payment of these required fees would be used to maintain, construct or dedicate parks within the City. However, Damien High School is not projecting an increase in student enrollment or faculty/staff throughout the life of the Master Plan, so implementation of the proposed Master Plan Update would not negatively affect the City's adopted goal of 4.0 acres of parkland for every 1,000 residents.

The City's joint-use agreement facilities, combined with neighboring regional parks, would offset any incremental increase in off-site demand for tennis facilities due to the small size of the Damien High School tennis program. Therefore, no increase in land use or development intensity, and no potential cumulative overburdening of community infrastructure and service capacity, including public parks, is expected to occur. Impacts are **less than significant**, and no mitigation is required.

a(v) Less Than Significant Impact. The project would result in an increase in land use density on the project site. Upon execution of all [three] phases of the proposed Master Plan Update, Damien High School would include a total of approximately 199,859 sf of academic, administrative, and athletic facilities to support a progressive academic curriculum and anticipated athletic demand on campus. However, Damien High School is not projecting an increase in student enrollment or faculty/staff throughout the life of the Master Plan. Therefore, no increase in land use or development intensity, and no potential cumulative overburdening of other public facilities requiring new or physically altered facilities, is expected to occur. Impacts would be **less than significant,** and no mitigation is required.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
XV. Recreation				
Would the project:				
a) 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?	☐	☐	☒	☐
b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☒	☐

Discussion

a) Less Than Significant Impact. The project would result in an increase in land use density on the project site, and the City will require the payment of park, recreation, and open space fees as part of any future development proposed under the Master Plan Update, as specified in City Municipal Code Chapter 3.20 (Parks and Recreation Charges). The amount of the fee would be equal to the

new development's fair share of the costs of developing new parks, open space and recreation facilities, including the acquisition, design, and construction. The payment of these required fees would be used to maintain, construct or dedicate parks within the City. However, Damien High School is not projecting an increase in student enrollment or faculty/staff throughout the life of the Master Plan, so implementation of the proposed Master Plan Update would not negatively affect the City's adopted goal of 4.0 acres of parkland for every 1,000 residents.

The City's joint-use agreement facilities, combined with neighboring regional parks, would offset any incremental increase in off-site demand for tennis facilities due to the small size of the Damien High School tennis program. Therefore, no increase in land use or development intensity, and no potential cumulative overburdening of community infrastructure and service capacity, including neighborhood or regional parks such that substantial physical deterioration of the facility would occur or be accelerated, is expected to occur. Impacts are **less than significant** and no mitigation is required.

b) Less Than Significant Impact. The Damien High School Master Plan Update seeks to resolve immediate needs and desires regarding new academic facilities and internal campus circulation through the removal of six underutilized tennis courts and a undersized baseball field to facilitate construction of four new buildings totaling approximately 73,100 sf of new building space, including a 5,000-square foot wrestling room, new team locker rooms, two new basketball/sport courts, as well as several alterations to select hardscaped areas and parking lots. Upon execution of all [three] phases of the proposed Master Plan Update, Damien High School would include a total of approximately 199,859 sf of academic, administrative, and athletic facilities to support a progressive academic curriculum and anticipated athletic demand on campus.[79]

Damien High School representatives have identified educational and spiritual needs to be of more importance for the land currently devoted for the tennis courts. The tennis team will take advantage of off-site tennis courts on an as-needed basis, which is expected to be an incremental increase in off-site demand for tennis facilities due to the small size of the Damien High School tennis program.

The project's recreation and athletic facilities are included as part of the buildout of the Master Plan Update; therefore, the environmental effects associated with future development of these facilities have been considered through the analysis of the Master Plan Update as a whole. The demolition and/or construction of on-site recreation and athletic facilities would not result in adverse physical effects on the environment beyond those analyzed for the overall implementation of the proposed Master Plan Update and mitigated as necessary to levels below significance thresholds throughout this Initial Study. The project will be required to pay applicable park and recreation fees, as specified in City Municipal Code Chapter 3.20 (Parks and Recreation Charges), which will be used in part to maintain existing park facilities and/or construct new park facilities at a time and place determined appropriate by the City. The construction of such new park and recreation facilities would be an action independent of the proposed project. The CEQA review for such an action would occur at a time and on a level commensurate with each specific City-sponsored park development project. Therefore, the project would have **a less than significant** impact related to the construction of new or expansion of existing park or recreation facilities. No mitigation is required.

[79] 132,731 sf of existing facilities minus 5,972 sf of demolition plus 73,100 sf of new construction = total of 199,859 sf

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
XVI. Transportation and Traffic				
Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing a measure of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways, and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☒	☐
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?	☐	☐	☒	☐
e) Result in inadequate emergency access?	☐	☐	☒	☐
f) Conflict with adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities, or otherwise substantially decrease the performance or safety of such facilities?	☐	☐	☒	☐

Discussion

a) Less Than Significant Impact. Roadway operations and the relationship between capacity and traffic volumes are generally expressed in terms of levels of service (LOS), which are defined using the letter grades A through F. These levels recognize that, while an absolute limit exists as to the amount of traffic traveling through a given intersection (the absolute capacity), the conditions that motorists experience rapidly deteriorate as traffic approaches the absolute capacity. Under such conditions, congestion is experienced.

Traffic studies in the City are prepared typically using the Los Angeles County Department of Public Works *Traffic Impact Analysis Report Guidelines*, which recommends using the Intersection Capacity Utilization (ICU) methodology. However, the project site is a high school campus that includes a substantial presence of pedestrian and bicycle traffic. ICU methodology cannot evaluate traffic conditions when multiple modes of transportation (e.g., vehicles, pedestrian, and bicycle) are present. Additionally, ICU methodology can only be applied to signalized intersections, but all school driveways are unsignalized. Since the proposed Master Plan Update includes intersections and driveways featuring a substantial presence of pedestrian and bicycle traffic adjacent to and on the project site, this analysis utilizes the *Highway Capacity Manual 6* (HCM 6) methodology, which incorporates multimodal analysis using the Synchro 10 and HCS7 software.

The proposed project does not result in any increase in student enrollment or faculty/staff, so the project is not anticipated to generate any additional trips during the weekday school operations. Therefore, the proposed redistribution of on-site parking lots is not anticipated to result in any changes to the trip arrival/departure pattern at a regional level compared to the existing trip pattern. Accordingly, a focused Traffic Impact Analysis (TIA) was conducted to evaluate the changes in traffic circulation around the project site (i.e., Damien High School Campus) and at the campus access driveways used by the faculty, students, and staff (Appendix F). The following eight intersections are analyzed in the TIA as the project study area for LOS analysis:

1. Damien Avenue/Bonita Avenue;
2. Damien Avenue/Project Driveway 1;
3. Damien Avenue/Project Driveway 2;
4. Damien Avenue/Project Driveway 3;
5. Damien Avenue/Palomares Avenue;
6. Proposed Project Driveway 7/Palomares Avenue;
7. Sedalia Avenue-Project Driveway 5/Bonita Avenue; and
8. Project Driveway 6/Bonita Avenue.

Although the project will be built in three phases, the study has evaluated traffic issues under Phase 3 full project buildout conditions (year 2029) when all project traffic is fully redistributed through implementation of the proposed Master Plan Update. Therefore, the following four scenarios were analyzed:

- Existing (2018) Conditions;

- Existing (2018) with Project (Phase 3) Conditions;
- Opening Year (2029) without Project Conditions; and
- Opening Year (2029) with Project (Phase 3) Conditions.

Level of Service Analysis. Traffic conditions were examined for the weekday a.m. peak hour when both school traffic and adjacent street traffic are at their peak (worst-case scenario). In the case of schools, the a.m. peak hour of vehicle trip generation coincides with the a.m. peak commute hour (i.e., the highest hour between 7:00 and 9:00 a.m.). School dismissal typically occurs at 2:50 p.m., so the p.m. peak hour of project-specific vehicle trip generation does not coincide with the p.m. peak commute hour (i.e., the highest hour between 4:00 and 6:00 p.m.). Accordingly, analysis of project-specific vehicle trip generation during the p.m. peak hour is not required.

All study intersections are under the jurisdiction of the City of La Verne, which uses LOS D as the minimum level of service standard for intersection operations. Therefore, study intersections in the City that operate at LOS E or F are required to be mitigated to LOS D or better.[80]

Existing Conditions. Existing school traffic was split into two categories: Drop-Off Trips and Parking Trips. The total trip generation for the existing school condition was developed using the inbound and outbound school traffic counts collected on May 17, 2018 at the existing school driveways. Under existing conditions, Damien High School generates 618 inbound and 348 outbound trips (total of 966 trips) during the a.m. peak hour. The difference between the inbound and outbound trips was considered as Parking Trips while the remainder of the trips was considered as Drop-Off Trips. Therefore, 348 inbound trips were estimated as inbound Drop-Off Trips, and the remaining 270 trips were estimated as inbound Parking Trips (total of 618 trips).

LOS analysis was conducted for existing a.m. peak hour conditions to determine current intersection performances. Table W summarizes the existing a.m. peak hour levels of service for the study intersections and indicates that all study area intersections are forecast to operate at satisfactory levels of service.

Existing with Project (Phase 3) Conditions. Implementation of the Master Plan Update does not entail an increase of the number of students, faculty, or staff. Therefore, total inbound and outbound trips to Damien High School (i.e., 618 inbound trips and 348 outbound trips) and the regional distribution pattern will remain unchanged. The Drop-Off Trip assignment at the intersections of Damien Avenue/Bonita Avenue and Damien Avenue/Palomares Avenue is the product of school trip distribution percentages and total Drop-Off Trips at the study intersections. The Parking Trip assignment at the study intersections was obtained by subtracting the Drop-Off Trips from the total school trips. Of the overall 270 Parking Trips, 116 Parking Trips would occur via the northeast corner of the campus/senior parking lot, while the remaining 154 Parking Trips are distributed among the remaining parking lots as proposed under Phase 3 conditions.

Total school trips were developed by adding the project Parking Trips to Drop-Off Trips at the study intersections. To develop Existing with Project (Phase 3) traffic volumes, redistributed project traffic is added to existing background traffic volumes. The trip redistribution for the Master Plan Update is the result of redistribution of parking lots and changes in the access types in some project

[80] LOS D delay in seconds is between >25 and ≤35 for unsignalized intersections and between >35 and ≤55 for signalized intersections. LOS E delay in seconds is between >35 and ≤50 for unsignalized intersections and between >55 and ≤80 for signalized intersections. LOS F delay in seconds is >50 for unsignalized intersections and >80 for signalized intersections.

driveways. Table W summarizes the existing a.m. peak hour levels of service for the study intersections with proposed school trips (i.e., school trips anticipated under the proposed redistribution of parking lots and changes in the access types in some project driveways) incorporated and indicates that all study area intersections are forecast to operate at satisfactory levels of service.

Table W: Existing Conditions without and with Project Levels of Service

Intersection	Control	Existing Conditions without Project		Existing Conditions with Project	
		A.M. Peak Hour		A.M. Peak Hour	
		Delay in seconds	LOS	Delay in seconds	LOS
Damien Avenue/Bonita Avenue	Signal	14.9	B	14.9	B
Damien Avenue/Project Driveway 1	OWSC	11.7	B	12.3	B
Damien Avenue/Project Driveway 2	OWSC	14.4	B	8.4	A
Damien Avenue/Project Driveway 3	OWSC	25.3	D	22.6	C
Damien Avenue/Palomares Avenue	AWSC	9.4	A	9.9	A
Proposed Project Driveway 7/Palomares Avenue	OWSC	*Does not Exist*		7.6	A
Sedalia Avenue-Project Driveway 5/Bonita Avenue	TWSC	21.0	C	21.0	C
Project Driveway 6/Bonita Avenue	OWSC	9.6	A	9.6	A

Source: Table F. *Traffic Assessment and Site Access Analysis - Damien High School Master Plan Update.* LSA. January 2019. (Appendix F).
OWSC = One Way Stop Control AWSC = All Way Stop Control
TWSC = Two Way Stop Control LOS = Level of Service

Opening Year (2029) without Project Conditions. The background traffic volumes for opening year 2029 were developed by adding existing-to-opening year traffic growth rate derived from the Southern California Association of Governments (SCAG) 2016–2040 Regional Transportation Plan/Sustainable Community Strategy Final Growth Forecast by Jurisdiction, as well as estimated vehicle trips from reasonably foreseeable and approved [cumulative] projects, to the existing background volumes. The existing school trips were then added to the opening year 2029 background traffic volumes to calculate the Opening Year (2029) without Project traffic volumes.

LOS analysis was conducted for Opening Year without Project a.m. peak hour conditions to determine projected intersection performances. Table X summarizes the Opening Year without Project a.m. peak hour levels of service for the study intersections and indicates that all intersections are forecast to operate at satisfactory levels of service.

Opening Year (2029) with Project (Phase 3) Conditions. Opening Year (2029) with Project traffic volumes were developed by adding proposed school trips (i.e., school trips anticipated under the proposed redistribution of parking lots and changes in the access types in some project driveways) to the background traffic volumes for opening year 2029.

LOS analysis was conducted for Opening Year with Project a.m. peak hour conditions to determine projected intersection performances. Table X summarizes the Opening Year with Project a.m. peak hour levels of service for the study intersections and indicates that all intersections are forecast to operate at satisfactory levels of service.

Table X: Opening Year (2029) without and with Project Levels of Service

Intersection	Control	Opening Year (2029) without Project		Opening Year (2029) with Project	
		A.M. Peak Hour		A.M. Peak Hour	
		Delay in seconds	LOS	Delay in seconds	LOS
Damien Avenue/Bonita Avenue	Signal	14.9	B	14.9	B
Damien Avenue/Project Driveway 1	OWSC	12.3	B	12.3	B
Damien Avenue/Project Driveway 2	OWSC	14.4	B	8.3	A
Damien Avenue/Project Driveway 3	OWSC	25.4	D	22.6	C
Damien Avenue/Palomares Avenue	AWSC	9.4	A	10.0	A
Proposed Project Driveway 7/Palomares Avenue	OWSC	*Does not Exist*		7.6	A
Sedalia Avenue-Project Driveway 5/Bonita Avenue	TWSC	21.8	C	21.8	C
Project Driveway 6/Bonita Avenue	OWSC	9.6	A	9.6	A

Source: Table G. *Traffic Assessment and Site Access Analysis - Damien High School Master Plan Update.* LSA. January 2019. (Appendix F).
OWSC = One Way Stop Control AWSC = All Way Stop Control
TWSC = Two Way Stop Control LOS = Level of Service

As detailed in Tables W and X, all study intersections operate at satisfactory LOS under both existing and opening year conditions. Implementation of the proposed Master Plan Update would not create any impact under any of the scenarios.

Intersection Queuing Analysis. When congestion occurs at intersections, there is general instability in the traffic flow, which means that relatively small incidents (e.g., momentary lapse of movement) can cause considerable fluctuations in speeds and delays. This near-capacity situation is labeled LOS E. Beyond LOS E, capacity has been exceeded, and arriving traffic volumes will exceed the ability of the intersection to accommodate them. An upstream queue will then form and continue to expand in length until the demand volume again declines.

Intersection queuing analysis was conducted for the a.m. peak hour under Existing with Project (Phase 3) Conditions and Opening Year (2029) with Project (Phase 3) Conditions to estimate the 95th percentile queue length at the school driveways. Table Y summarizes the results of this analysis. Detailed queuing analysis worksheets are included in Appendix F.

As illustrated in Table Y, 95th percentile queue lengths are forecast not to exceed the proposed storage lengths at the project driveways under Existing with Project (Phase 3) Conditions or Opening Year (2029) with Project (Phase 3) Conditions.

Table Y: Driveway Queuing Analysis

Intersection	Movement	Storage Length1 (feet per lane)	Existing Conditions with Project	Opening Year (2029) with Project
			95th Percentile Queue	95th Percentile Queue
			A.M.	A.M.
2.) Damien Avenue/Project Driveway 1	WBLR*	250	88	99
3.) Damien Avenue/Project Driveway 2	WBLR*	250	—	—
4.) Damien Avenue/Project Driveway 3	WBLR*	200	82	97
6.) Proposed Project Driveway 7/Palomares Avenue	WBLR*	175	—	—

Table Y: Driveway Queuing Analysis

Intersection	Movement	Storage Length1 (feet per lane)	Existing Conditions with Project	Opening Year (2029) with Project
			95th Percentile Queue	95th Percentile Queue
			A.M.	A.M.
7.) Sedalia Avenue-Project Driveway 5/Bonita Avenue	NBR[2] WBL	125 TWLTL	42 25	42 25
8.) Project Driveway 6/Bonita Avenue	NBR[2] WBL	125 TWLTL	43 25	43 25

Source: Table H. *Traffic Assessment and Site Access Analysis - Damien High School Master Plan Update.* LSA. January 2019. (Appendix F).
[1]Storage length for all movements at Project Driveway calculated based on the site plan and Google Earth aerial photography.

[2] Queue reported from HCS7 software.
* Queue reported from Simtraffic software.
WBLR = West Bound Left/Right
NBR = North Bound Right
WBL = West Bound Left
TWLTL = Two Way Left Turn Lane

As detailed in the TIA, all study area intersections currently operate at satisfactory LOS under Existing (2018) Conditions and are forecast to continue to operate at satisfactory LOS under Opening Year (2029) without Project Conditions. With implementation of the proposed Master Plan Update, all study area intersections are still forecast to operate at satisfactory LOS under Existing (2018) with Project (Phase 3) Conditions and Opening Year (2029) with Project (Phase 3) Conditions. Therefore, conflict with an applicable plan, ordinance, or policy establishing a measure of effectiveness for the performance of the circulation system would not occur. Impacts would be **less than significant,** and no mitigation is required.

b) Less Than Significant Impact. Traffic conditions were examined for the weekday a.m. peak hour when both school traffic and adjacent street traffic are at their peak (worst-case scenario). In the case of schools, the a.m. peak hour of vehicle trip generation coincides with the a.m. peak commute hour (i.e., the highest hour between 7:00 and 9:00 a.m.). School dismissal typically occurs at 2:50 p.m., so the p.m. peak hour of project-specific vehicle trip generation does not coincide with the p.m. peak commute hour (i.e., the highest hour between 4:00 and 6:00 p.m.). Accordingly, analysis of project-specific vehicle trip generation during the p.m. peak hour is not required.

Under the Los Angeles County Congestion Management Program (CMP), level of service impacts to intersections must be evaluated if a project generates 50 or more peak hour trips. However, the proposed project does not result in any increase in student enrollment or faculty/staff, so the project is not anticipated to generate any additional trips during the weekday school operations. Therefore, the proposed redistribution of on-site parking lots is not anticipated to result in any changes to the trip arrival/departure pattern at a regional level compared to the existing trip pattern, and the project will not conflict with the CMP guidelines. Impacts are **less than significant**, and no mitigation is required.

c) Less Than Significant Impact. The Brackett Field Airport, a general aviation airport, is located approximately 0.6 mile south of the project site. Damien High School is located within Zone E of the Brackett Field Airport Land Use Compatibility Plan (BFALUCP).[81] Within Zone E, institutional uses such as children's schools grades 9-12 are normally compatible and are presumed to

[81] *Brackett Field Airport Land Use Compatibility Plan.* Map 2A, Compatibility Policy Zones. Los Angeles County Airport Land Use Commission. Adopted December 9, 2015.

comply with safety and airspace protection criteria. Additionally, the BFALUCP identifies the project site within Federal Aviation Administration (FAA) Part 77 Notification Area.[82] The risk level is considered low for normally compatible uses within Zone E.

As detailed in response to Checklist Question VIII.e and f, any development application submitted under the proposed Master Plan Update would be subject to Community Development Director or designee review and approval prior to issuance of grading and building permits to ensure consistency with Compatibility Zone E of the BFALUCP and FAA Part 77. Within Zone E, object height limits are established at 150 feet or more above runway elevation,[83] which is 966 feet above mean sea level (amsl) at its lowest point. The highest elevation of the project site grade is 1,053 feet amsl. Therefore any new facilities 63 feet or taller[84] would require site-specific airspace review by the Los Angeles County Airport Land Use Commission.

FAA Part 77, Subpart B requires notification to the FAA of any proposed construction or alteration having a height greater than an imaginary surface extending 100 feet outward and 1 foot upward (slope of 100:1) for a distance of 20,000 feet from nearest point of any runway more than 3,200 feet in actual length, and also requires FAA notification for construction of any object taller than 200 feet.[85]

Development proposed under the Master Plan Update on the project site is located as close as 3,800 feet north of the nearest runway of the Brackett Field Airport. Therefore, any development on the project site equal to or greater than 38 feet in height (equal to a slope of 100:1 in relation to the distance to the nearest runway) would require notification to the FAA. None of the facilities proposed under the master Plan Update would exceed 37 feet above surface grade at their tallest point (i.e., roof-top parapet). Therefore, none of the proposed facilities would require Los Angeles County Airport Land Use Commission (ALUC) review or notification to the FAA for height restrictions. However, in accordance with Sections 1.2.22a (Major Land Use Action) and 1.4.2b (Mandatory Referral of Certain Land Use Actions) of the BFALUCP, the proposed Master Plan Update and subsequent development application for the 400-seat Performing Arts Center anticipated under Phase 3 of the Master Plan Update would require review and approval by the ALUC (for indoor assembly facility with a capacity of at least 300 people) to ensure consistency with the BFALUCP (**Standard Condition HAZ-1**).[86] Pursuant to California Public Utilities Code Section 21676 (Airport Land Use Commission), any project-specific conditions imposed by the ALUC must be implemented as applicable and will be reviewed and confirmed by the La Verne Community Development Director or designee in accordance with Chapter 18.16 (Development Review) and Chapter 18.60 (institutional Zone) of the La Verne Municipal Code so that execution of projects proposed under the Master Plan Update would occur in accordance with the BFALUCP. Through implementation of **Standard Condition HAZ-1**, implementation of the proposed Master Plan Update will not result in a change in air traffic patterns, including either an increase in air traffic levels and/or a change in

82 *Ibid.* Map 2B, Airspace Protection Map.

83 *Ibid.* Table 2B, Compatibility Zone Delineation.

84 Highest elevation of project site grade 1,053 feet subtracted by lowest elevation of airport runway 966 feet = 87 feet difference in elevation between the project site and runway. 150 foot object height limit in Zone E subtracted by 87 foot difference in elevation between the project site and runway = 63 foot building height threshold for notification to Los Angeles County Airport Land Use Commission (63 foot building height plus 87 foot difference in elevation between the project site and runway = 150 foot object height limit threshold).

85 *§ 77.9(a)(1) Construction or Alteration Requiring Notice.* 14 Code of Federal Regulations 77.9 - Construction or Alteration Requiring Notice. https://www.law.cornell.edu/cfr/text/14/77.9 (Accessed June 19, 2018).

86 Pursuant to California Public Utilities Code Section 21676 (Airport Land Use Commission).

the location that results in substantial safety risks. Impacts would be **less than significant**. No mitigation is required.

d) Less Than Significant Impact. The project site is an existing high school campus with primary access (ingress/egress) along Bonita Avenue and Damien Avenue. Implementation of the proposed Master Plan Update would reconfigure the access along Damien Avenue and add a third access point (ingress/egress) along Palomares Avenue. The proposed project would be required to design, construct, and maintain structures, roadways, and facilities in accordance with applicable standards governing vehicular access. Demolition and construction activities that may temporarily restrict vehicular traffic would be required to implement adequate and appropriate measures to facilitate the passage of persons and vehicles through/around any required road closures.

Currently passenger and emergency vehicle traffic is facilitated through the center of campus between the two major roadways abutting the project site (i.e., Damien Avenue and Bonita Avenue) via a two-way, 22-foot-wide utility roadway with red-painted curbs. Implementation of the Master Plan Update would reconfigure the on-site parking and bring the parking areas into compliance with the City standard stall size (9 feet by 19 feet) with 25-foot back-up clearance. The 73-space parking lot east of the existing Event Center, currently located near the center of the campus, will be replaced by a new 118-space parking lot located south of the Gymnasium near the intersection of Damien Avenue and Palomares Avenue. This reconfiguration of on-campus parking will eliminate passenger vehicle access through the center of campus via the utility roadway, which will be designated for only emergency vehicles to ensure unobstructed access for first responders, and it also will help separate pedestrians from motorists, thus creating a much safer environment for students and other on-campus pedestrians.

As illustrated in Table Y, the project TIA concluded that the project would not result in any queuing conditions that would result in unsafe road conditions. The proposed circulation network and parking lot reconfiguration would be subject to review and approval by the City Fire and Police Departments, City Traffic Engineer, and Public Works Department during the City's precise plan review process. Although no specific development proposal or site plan has been submitted to the City to date, any development application under the proposed Master Plan Update would be subject to Community Development Director or designee review and approval prior to issuance of grading and building permits in accordance with Section 18.60.030 and Chapter 18.16 (Development Review) of the City Municipal Code to ensure a substantial increase in hazards due to a design feature or incompatible use would not occur. Adherence to these measures would result in a **less than significant impact.** No mitigation is required.

e) Less Than Significant Impact. The project site is an existing high school campus with primary access (ingress/egress) along Bonita Avenue and Damien Avenue. Implementation of the proposed Master Plan Update would reconfigure the access along Damien Avenue and add a third access point (ingress/egress) along Palomares Avenue. The addition of a parking lot and ingress/egress driveway along Palomares Avenue would provide a third primary access point to the campus (in addition to the existing driveways along Bonita Avenue and Damien Avenue) for emergency response vehicles and attenuate potential choke points that could occur at existing campus driveways along Damien Avenue and Bonita Avenue.

Currently passenger and emergency vehicle traffic is facilitated through the center of campus between the two major roadways abutting the project site (i.e., Damien Avenue and Bonita

Avenue) via a two-way, 22-foot-wide utility roadway with red-painted curbs. Implementation of the Master Plan Update would reconfigure the on-site parking and bring the parking areas into compliance with the City standard stall size (9 feet by 19 feet) with 25-foot back-up clearance. The 73-space parking lot east of the existing Event Center, currently located near the center of the campus, will be replaced by a new approximately 118-space parking lot located south of the Gymnasium near the intersection of Damien Avenue and Palomares Avenue. This reconfiguration of on-campus parking will eliminate passenger vehicle access through the center of campus via the utility roadway, which will be designated for only emergency vehicles to ensure unobstructed access for first responders, and it also will help separate pedestrians from motorists, thus creating a much safer environment for students and other on-campus pedestrians. Therefore, potential impacts related to emergency access will be **less than significant**. No mitigation is required.

f) Less Than Significant Impact. The proposed Master Plan Update contains various elements to accommodate and encourage the use of alternative means of transportation, including pedestrian, bicycle, and transit modes. Current pedestrian circulation through campus is interrupted by parking lots and drive isles. The 73-space parking lot east of the existing Event Center, currently located near the center of the campus, will be replaced with a new 118-space parking lot proposed south of the Gymnasium near the intersection of Damien Avenue and Palomares Avenue.

The new parking lot would have vehicle access along Palomares Avenue and connect to the campus via pedestrian walkways. Construction of this parking lot and demolition of the 73-space parking lot east of the existing Event Center would separate pedestrian/bicycle and vehicular circulation by placing vehicles along the perimeter of campus while facilitating pedestrian and bicycle circulation through the center of campus where the academic, administrative, and athletic facilities are primarily located. The proposed Grand Promenade would link the north and south ends of the campus and separate pedestrians and bicycles from vehicle circulation by removing portions of a parking lot along Damien Avenue and creating gathering areas, quads, and a plaza along the gymnasium frontage, which would set the stage for development and improvements on both sides of the pedestrian connection.

Foothill Transit currently operates two bus routes in the immediate vicinity of the project site: Foothill Transit Route 492 eastbound is served via a bus stop at the southeast corner of Bonita Avenue and Damien Avenue along the northwestern corner of the project site, while Foothill Transit Route 492 westbound is served via a bus stop at the northwest corner of Bonita Avenue and Damien Avenue approximately 200 feet northwest of the project site. Implementation of the Master Plan Update would not affect these mass transit facilities, and their availability in the vicinity of the project site is consistent with the City's General Plan. Impacts would be **less than significant.** No mitigation is required.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
XVII. 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:				
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)?	☐	☒	☐	☐
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 Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?	☐	☒	☐	☐

Discussion

a) Potentially Significant Unless Mitigation Incorporated. The term "California Native American tribe" is defined as "a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the Native American Heritage Commission (NAHC)."

Chapter 532, Statutes of 2014 (i.e., AB 52), requires Lead Agencies evaluate a project's potential to impact "tribal cultural resources." Such resources include "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe that are eligible for inclusion in the California Register of Historical Resources or included in a local register of historical resources." AB 52 also gives Lead Agencies the discretion to determine, supported by substantial evidence, whether a resource qualifies as a "tribal cultural resource."

CEQA defines a "historical resource" as a resource that meets one or more of the following criteria: (1) is listed in, or determined eligible for listing in, the California Register of Historical Resources (California Register); (2) is listed in a local register of historical resources as defined in PRC §5020.1(k); (3) is identified as significant in a historical resource survey meeting the requirements of PRC §5024.1(g); or (4) is determined to be a historical resource by a project's Lead Agency (PRC §21084.1 and *State CEQA Guidelines* §15064.5[a]).

"Local register of historical resources" means a list of properties officially designated or recognized as historically significant by a local government pursuant to a local ordinance or resolution.

Per AB 52 (specifically California Public Resources Code 21080.3.1), Native American consultation is required upon request by interested California Native American tribes that have previously requested that the City provide them with notice of such projects. The City disseminated notices of the proposed project to interested California Native American tribes on June 26, 2018. No California Native American tribes responded to the City. Therefore, it is reasonable to conclude that no tribal cultural resources are known to exist on the project site. With implementation of **Mitigation Measure CUL-4,** the project archaeologist, the project proponent, the City Community Development Director or designee, and interested Native American tribal representatives (i.e., those who have expressed an interest in the project through the Assembly Bill 52 process pursuant to California Public Resources Code §21080.3.2) shall confer regarding the appropriate disposition of any unanticipated cultural resources discoveries encountered during ground disturbing activities. Therefore, impacts to tribal cultural resources would be reduced to **less than significant with mitigation incorporated.**

b) Potentially Significant Unless Mitigation Incorporated. CEQA defines a "historical resource" as a resource that meets one or more of the following criteria: (1) is listed in, or determined eligible for listing in, the California Register of Historical Resources (California Register); (2) is listed in a local register of historical resources as defined in PRC §5020.1(k); (3) is identified as significant in a historical resource survey meeting the requirements of PRC §5024.1(g); or (4) is determined to be a historical resource by a project's Lead Agency (PRC §21084.1 and *State CEQA Guidelines* §15064.5[a]).

A resource may be listed as a historical resource in the California Register if it meets any of the following National Register of Historic Places criteria as defined in PRC §5024.1(C):

A. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

B. Is associated with the lives of persons important in our past.

C. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.

D. Has yielded, or may be likely to yield, information important in prehistory or history.

A "substantial adverse change" to a historical resource, according to PRC §5020.1(q), "means demolition, destruction, relocation, or alteration such that the significance of a historical resource would be impaired."

CEQA Guidelines do not preclude identification of historical resources as defined in Public Resources Code Sections 5020.1(j) or 5024.1. Pursuant to *State CEQA Guidelines* Section 15064.5[c][4], if an archaeological resource is neither a unique archaeological nor a historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment. It shall be sufficient that both the resource and the effect on it are noted in the Initial Study, but they need not be considered further in the CEQA process.

Pursuant to AB 52 (specifically California Public Resources Code 21080.3.1), the City disseminated notices of the proposed project to interested California Native American tribes on June 26, 2018. No California Native American tribes responded to the City. Therefore, it is reasonable to conclude that no tribal cultural resources are known to exist on the project site. With implementation of **Mitigation Measure CUL-4,** the project archaeologist, the project proponent, the City Community Development Director or designee, and interested Native American tribal representatives (i.e., those who have expressed an interest in the project through the Assembly Bill 52 process pursuant to California Public Resources Code §21080.3.2) shall confer regarding the appropriate disposition of any unanticipated cultural resources discoveries encountered during ground disturbing activities. Therefore, the proposed project would have a **less than significant impact with mitigation incorporated** on tribal cultural resources, as defined in Public Resources Code Section 21074.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
XVIII. Utilities and Service Systems				
Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☒	☐
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
XVIII. Utilities and Service Systems				
Would the project:				
e) 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?	☐	☐	☒	☐
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

Discussion

a) Less Than Significant Impact. National Pollution Discharge Elimination System (NPDES) permits are issued by local Regional Water Quality Control Boards to regulate waste discharges to "waters of the U.S.," which includes rivers, lakes, and their tributary waters. Waste discharges include discharges of storm water and construction project discharges. Construction of a project resulting in the disturbance of more than one acre requires an NPDES permit. Construction project proponents are also required to prepare a SWPPP, which would ensure compliance with the local Los Angeles Regional Water Quality Control Board (LARWQCB) storm water discharge requirements.

Local governments and water districts are responsible for complying with federal regulations, both for wastewater plant operation and the collection systems (e.g., sanitary sewers) that convey wastewater to wastewater treatment facilities. Proper operation and maintenance is critical for sewage collection and treatment, as impacts from these processes can degrade water resources and affect human health. Accordingly, publicly owned treatment works (POTWs) receive Waste Discharge Requirements (WDRs) to ensure that such wastewater facilities operate in compliance with water quality regulations set forth by the State. WDRs, issued by the State, establish effluent limits on the kinds and quantities of pollutants that POTWs can discharge. These permits also contain pollutant monitoring, recordkeeping, and reporting requirements. POTWs that intend to discharge into the nation's waters must obtain a WDR prior to initiating discharge.

The City of La Verne Public Works Department (Sewer Division) is responsible for the operation and maintenance of the local sewer system. In addition, the City is located in the County Sanitation Districts of Los Angeles County (LACSD), and within the District No. 21 service

boundary. Wastewater generated by the proposed project would be collected in City sewers and discharged to a regional trunk sewer pipeline owned by the LACSD where then it will ultimately flow to either the Pomona Water Reclamation Plant or the San Jose Creek Water Reclamation Plant.

The Damien High School campus comprises 25.8 acres with an average annual population of 940 students and 75 faculty/staff. At full buildout, the Master Plan Update proposes demolition of the existing 5,972 sf cafeteria facility and construction of four new buildings totaling approximately 73,100 sf of new building space (net increase of 67,128 sf). It should be noted, however, that although the project would result in an increase in land use density on the project site through new building construction, Damien High School is not projecting an increase in student enrollment or faculty/staff throughout the life of the Master Plan. Therefore, no increase in land use or development intensity, and no potential cumulative overburdening of community infrastructure and service capacity, is expected to occur. Notwithstanding, a calculation of potential wastewater treatment demand based on LACSD generation rates per square foot of private school facility is provided as a worst case scenario.

The LACSD *Loadings for Each Class of Land Use* indicate a private school would generate approximately 200 gallons of wastewater per day per 1,000 square feet of facility.[87] Therefore, a net increase of 67,128 sf of building space would generate approximately 13,425.6 (0.0134 million) gallons of wastewater per day.[88]

The Pomona Water Reclamation Plant (Pomona WRP) currently services the project site and surrounding vicinity. The Pomona WRP has a daily capacity of primary, secondary, and tertiary wastewater treatment of approximately 15 million gallons per day (mgd) and is currently managing approximately 8.57 mgd.[89,90] Therefore, compliance with condition or permit requirements established by the City and state, and waste discharge requirements at the Pomona WRP to accommodate the anticipated increase of 0.0134 mgd of wastewater treatment demand, would ensure that discharges into the wastewater treatment facility system from the operation of the proposed project would not exceed applicable wastewater treatment requirements of the LARWQCB. Impacts would **less than significant** and no mitigation is required.

b) Less Than Significant Impact.

Wastewater Services. As detailed in response to Checklist Question XVIII.a, the anticipated net increase of 67,128 sf of building space through implementation of the Master Plan Update would generate approximately 13,425.6 (0.0134 million) gallons of wastewater per day.[91] The Pomona WRP has a daily capacity of primary, secondary, and tertiary wastewater treatment of approximately 15 mgd and is currently managing approximately 8.57 mgd.[92,93] Therefore, the

87 *Table 1: Loadings for Each Class of Land Use.* County Sanitation Districts of Los Angeles County. https://lacsd.org/wastewater/willserveprogram.asp (Accessed September 17, 2018).

88 67,128 sf ÷ 1,000 sf × 200 gallons per day = 13,425.6 gallons of wastewater per day.

89 *Pomona Water Reclamation Plant.* Sanitation Districts of Los Angeles County. https://www.lacsd.org/wastewater/wwfacilities/joint_outfall_system_wrp/pomona.asp (Accessed September 17, 2018).

90 *University of La Verne Facilities and Technology Master Plan Update.* Environmental Impact Report, SCH #2016071053. Page 387. City of La Verne. December 2016.

91 67,128 sf ÷ 1,000 sf × 200 gallons per day = 13,425.6 gallons of wastewater per day.

92 *Pomona Water Reclamation Plant.* Sanitation Districts of Los Angeles County. https://www.lacsd.org/wastewater/wwfacilities/joint_outfall_system_wrp/pomona.asp (Accessed September 17, 2018).

Pomona WRP maintains approximately 6.43 mgd of surplus wastewater treatment capacity. Therefore, the Pomona WRP has sufficient surplus wastewater treatment capacity to accommodate the anticipated increase of 0.0134 mgd of wastewater treatment demand. No construction of new wastewater treatment facilities or expansion of existing facilities would be required. Impacts would be **less than significant** and no mitigation is required.

Water Services. Domestic water for the City and project site is provided by the City of La Verne through a combination of imported water and local groundwater. Imported water is purchased from the Three Valley Metropolitan Water District (TVMWD) and the Metropolitan Water District (MWD).[94] Groundwater is extracted from Six Basins[95] in accordance with the Six Basins Judgement, which defines adjudication for these basins to ensure safe operating yield and avoid over-extraction of groundwater.[96] According to the Six Basins Judgement, the City has a right to 7.601 percent of the safe operating yield from the Canyon Basin, Upper Claremont Heights Basin, Lower Claremont Heights Basin, and Pomona Basin and "the right to produce as much groundwater as it may reasonably withdraw from the Two Basins Area on an annual basis so long as it does not substantially injure the rights of any other" parties identified in the Six Basins Judgment.[97]

Water demand for the City's institutional and governmental land uses, including the existing Damien High School Campus, totaled approximately 1,112 acre-feet per year (AFY) in 2015 and is projected to reach 1,377 AFY in the year 2030 (one year after anticipated buildout of the Master Plan Update) and 1,429 AFY in the year 2035.[98] Overall water supply in the City is based on projections of the TVMWD and the adjudicated yield (as described above) from the Six Basins. The City's supply and demand of water is detailed in Table Z.

Table Z: City of La Verne Water Supply and Demand

		2020 (AFY)	2025 (AFY)	2030 (AFY)	2035 (AFY)
Normal Year (2001) Supply and Demand Comparison					
Total Supply[1]		13,779	13,779	13,779	13,779
Total Demand		6,979	7,242	7,515	7,797
Surplus Water		6,800	6,537	6,264	5,982
Single Dry Year (2015) Supply and Demand Comparison					
Total Supply[1]		8,091	8,091	8,091	8,091
Total Demand		6,979	7,242	7,515	7,797
Surplus Water		1,112	849	576	294
Multiple Dry Year (2013-2015) Supply and Demand Comparison					
First Year (2013)	**Total Supply**[1]	7,918	7,918	7,918	7,918
	Total Demand	6,979	7,242	7,515	7,797
	Surplus Water	939	676	404	122
Second Year (2014)	**Total Supply**[1]	7,842	7,842	7,842	7,842

93 *University of La Verne Facilities and Technology Master Plan Update.* Environmental Impact Report, SCH #2016071053. Page 387. City of La Verne. December 2016.

94 *Final 2015 Urban Water Management Plan, The Metropolitan Water District of Southern California.* Table 1-3: Member Agencies and Table A.3-6: Metropolitan's In-Region Groundwater Storage Programs. June 2016.

95 The Six Basins are comprised of the Ganesha, Live Oak, Pomona, Lower Claremont Heights, Upper Claremont Heights and Canyon Basin.

96 *City of La Verne Draft 2015 Urban Water Management Plan.* Page 34. City of La Verne. May 2016.

97 *Ibid.*

98 *City of La Verne Draft 2015 Urban Water Management Plan.* Table 4: Actual Water Deliveries and Losses between 2010 through 2015, and Table 5: Projected Water Deliveries and Losses between 2020 through 2035 . City of La Verne. May 2016.

Table Z: City of La Verne Water Supply and Demand

		2020 (AFY)	2025 (AFY)	2030 (AFY)	2035 (AFY)
	Total Demand	6,979	7,242	7,515	7,797
	Surplus Water	863	600	328	46
Third Year (2015)	**Total Supply**[1]	7,804	7,804	7,804	7,804
	Total Demand	6,979	7,242	7,515	7,797
	Surplus Water	825	562	290	8

Source: *City of La Verne Draft 2015 Urban Water Management Plan.* Tables 27, 28, and 29. City of La Verne. May 2016.
[1] City water supply is based on projections of the Three Valleys Municipal Water District and the adjudicated yield from the Six Basins.
AFY = Acre-Feet per Year

As indicated in Table Z, the City anticipates a slight increase in water demand (approximately 818 acre-feet) from year 2020 to 2035, and water supplies are expected to be adequate to meet normal year, single dry year, and multiple dry year demand conditions through the UWMP's 2035 planning horizon. However, projected water supplies by the year 2035 under multiple dry years are marginally adequate to support demand, so the purchase of imported water from the MWD is designed to ensure the projected demand would continue to be adequately met.

Although the project would result in an increase in land use density on the project site through new building construction, Damien High School is not projecting an increase in student enrollment or faculty/staff throughout the life of the Master Plan. Therefore, no increase in land use or development intensity, and no potential cumulative overburdening of community infrastructure and service capacity, is expected to occur. Notwithstanding, a calculation of potential water demand based on a water demand factor of 0.46 AFY per thousand square feet of proposed academic, administrative, and athletic facilities is provided as a worst case scenario.[99]

At full build-out, the Master Plan Update proposes demolition of the existing 5,972 square-foot (sf) cafeteria facility and construction of four new buildings totaling approximately 73,100 sf of new building space (net increase of 67,128 sf). Based on a water demand factor of 0.46 AFY per thousand square feet of proposed academic, administrative, and athletic facilities, a net increase of 67,128 sf of building space would generate approximately 30.9 AFY of additional water demand at full build-out of the Master Plan Update.[100] As detailed in Table AA, the City would have sufficient water supply to support the proposed project under a worst case scenario via the TVMWD and the adjudicated yield from the Six Basins with the exception of a third multiple dry year of drought in the year 2035. In the event that additional water supplies would be needed, TVMWD can purchase water from MWD, whose surplus substantially exceeds the demand anticipated for the Master Plan Update, as indicated in Table AA.

Table AA: Metropolitan Water District Water Supply and Demand

	2020 (AFY)	2025 (AFY)	2030 (AFY)	2035 (AFY)	2040 (AFY)
Normal Year Supply and Demand Comparison					
Total Supply	3,448,000	3,550,000	3,658,000	3,788,000	3,824,000
Total Demand	1,860,000	1,918,000	1,959,000	2,008,000	2,047,000

[99] Water duty factors are based on 2011 water demand factors (which in turn are based on actual on-campus water usage) of similar academic uses (i.e., Academic, administrative, and athletic facilities of Claremont McKenna College and University of La Verne, located in the Cities of Claremont and La Verne, respectively).
[100] 67,128 sf ÷ 1,000 sf x 0.46 AFY = 30.9 AFY of additional water demand.

Table AA: Metropolitan Water District Water Supply and Demand

	2020 (AFY)	2025 (AFY)	2030 (AFY)	2035 (AFY)	2040 (AFY)
Surplus Water	1,588,000	1,632,000	1,699,000	1,780,000	1,777,000
Single Dry Year Supply and Demand Comparison					
Total Supply	2,584,000	2,686,000	2,775,000	2,905,000	2,941,000
Total Demand	2,005,000	2,066,000	2,108,000	2,160,000	2,201,000
Surplus Water	579,000	620,000	667,000	745,000	740,000
Multiple Dry Year Supply and Demand Comparison					
Total Supply	2,103,000	2,154,000	2,190,000	2,242,000	2,260,000
Total Demand	2,001,000	2,118,000	2,171,000	2,216,000	2,258,000
Surplus Water	102,000	36,000	19,000	26,000	2,000

Source: *2015 Urban Water Management Plan.* Tables 2-4, 2-5, and 2-6. The Metropolitan Water District of Southern California. June 2016.
AFY = Acre-Feet per Year

Through a combination of imported water from the TVMWD and MWD and local groundwater extracted from Six Basins in accordance with the Six Basins Judgement, the City would have sufficient water supplies to serve the proposed project. Therefore, the proposed project would not require construction of new water facilities or expansion of existing water facilities, as capacity would be available to support future development proposed under the Master Plan Update. Impacts would be **less than significant** and no mitigation is required.

Wastewater and Water Interconnections. All new facilities to be constructed under the Master Plan Update would be located within the existing Damien High School Campus, each of which is expected to require interconnection to existing municipal wastewater and water conveyance facilities. The precise interconnection locations would be determined at the time each project is proposed, but they are expected to occur either on site or within existing utility easements in areas already disturbed and developed with infrastructure. Furthermore, the City would require that any future line size modifications or interconnections would be designed in accordance with applicable provisions of the City Municipal Code and to the satisfaction of the City Engineer. Since the demand for wastewater treatment capacity and water supply generated by the proposed project would not result in the exceedance of projected wastewater treatment capacity or water supply, or require or result in the construction or expansion of wastewater treatment facilities or water facilities, impacts would be **less than significant**. No mitigation is required.

c) Less Than Significant Impact. Development of the project site could alter hydrologic conditions by altering drainage patterns, increasing impervious areas, and, in turn, reducing infiltration and increasing runoff flow rates and volumes, which could require the construction of new storm water drainage facilities or expansion of existing facilities.

Pursuant to the NPDES permit, the proposed project is required to meet or exceed pre-project conditions for storm water discharge and would be required to retain any additional runoff on site and discharge it to the storm drain system at rates that do not exceed pre-development conditions. In accordance with the provisions in the NPDES permit, all future projects implemented pursuant to the Master Plan Update shall implement **Standard Condition HYD-1** to file and obtain an NOI with the State Water Resource Control Board (SWRCB) in order to be in compliance with the State NPDES General Construction Storm Water Permit for discharge of surface runoff associated with construction activities. Additionally, future projects shall

implement SWPPPs in accordance with **Standard Condition HYD-2** emphasizing structural and nonstructural BMPs to control sediment and non-visible discharges from project sites. Finally, project-specific SUSMPs shall be developed in accordance with **Standard Condition HYD-3** to specify BMPs designed and implemented to retain a project site's minimum design capture volume and hydromodification volume; storm water shall be captured on-site and allowed to infiltrate into the ground such that post-development storm water runoff volume or time of concentration will not exceed pre-development storm water runoff. All BMPs are expected to be constructed on-site; therefore, any potential environmental impacts resulting from construction of the proposed BMPs are addressed throughout this Initial Study and mitigated as applicable.

The project is located in an urbanized area for which storm drain features have been previously planned and installed. Changes in storm water volume as a result of the proposed project would be addressed through adherence to NPDES permit requirements. The City continues to routinely monitor its storm drain system and fund and improve those systems as identified in its Capital Improvement Plan. The approval of drainage features/improvements occurs through the City's building plan check process. As part of this process, the proposed project would be engineered and constructed in conformance with Chapter 13.60 (Low Impact Development) of the City Municipal Code and pursuant to **Standard Conditions HYD-1** through **HYD-3**. Accordingly, future Master Plan development would be required to demonstrate adequate drainage systems, and would be conditioned to comply with applicable NPDES, SWPPP, SUSMP, and Urban Runoff Management Program requirements. There would be no significant environmental effects specifically related to the installation of storm water facilities during the project's construction phase that are not encompassed within the project's construction footprint and therefore already identified, disclosed, and subject to all applicable mitigation measures, as well as local, state, and federal regulations, as part of this Initial Study. Therefore, impacts would be **less than significant.** No additional mitigation is required.

d) Less Than Significant Impact. As discussed about in response to Checklist Question XVIII.b, the City anticipates a slight increase in water demand (approximately 818 acre-feet) from year 2020 to 2035, and water supplies are expected to be adequate to meet normal year, single dry year, and multiple dry year demand conditions through the UWMP's 2035 planning horizon. However, projected water supplies by the year 2035 under multiple dry years are marginally adequate to support demand, as indicated in Table AA, so the purchase of imported water from the MWD is designed to ensure the projected demand would continue to be adequately met.

Although the project would result in an increase in land use density on the project site through new building construction, Damien High School is not projecting an increase in student enrollment or faculty/staff throughout the life of the Master Plan. Therefore, no increase in land use or development intensity, and no potential cumulative overburdening of community infrastructure and service capacity, is expected to occur. Notwithstanding, a calculation of potential water demand based on a water demand factor of 0.46 AFY per thousand square feet of proposed academic, administrative, and athletic facilities is provided as a worst case scenario.[101]

At full buildout, the Master Plan Update proposes demolition of the existing 5,972 sf cafeteria facility and construction of four new buildings totaling approximately 73,100 sf of new building

[101] Water duty factors are based on 2011 water demand factors (which in turn are based on actual on-campus water usage) of similar academic uses (i.e., Academic, administrative, and athletic facilities of Claremont McKenna College and University of La Verne, located in the Cities of Claremont and La Verne, respectively).

space (net increase of 67,128 sf). Based on a water demand factor of 0.46 AFY per thousand square feet of proposed academic, administrative, and athletic facilities, a net increase of 67,128 sf of building space would generate approximately 30.9 AFY of additional water demand at full build-out of the Master Plan.[102] As detailed in Table Z, the City would have sufficient water supply to support the proposed project under a worst case scenario via the TVMWD and the adjudicated yield from the Six Basins with the exception of a third multiple dry year of drought in the year 2035. In the event that additional water supplies would be needed, TVMWD can purchase water from MWD, whose surplus substantially exceeds the demand anticipated for the Master Plan Update, as indicated in Table AA.

Through a combination of imported water from the TVMWD and MWD and local groundwater extracted from Six Basins in accordance with the Six Basins Judgement, the City would have sufficient water supplies to serve the proposed project. Impacts would be **less than significant**, and no mitigation is required.

e) Less Than Significant Impact. As stated in response to Checklist Question XVIII.b, a net increase of 67,128 sf of building space would generate approximately 13,425.6 (0.0134 million) gallons of wastewater per day.[103] The Pomona WRP has a daily capacity of primary, secondary, and tertiary wastewater treatment of approximately 15 mgd and is currently managing approximately 8.57 mgd.[104,105] Therefore, the Pomona WRP maintains approximately 6.43 mgd of surplus capacity to accommodate the additional 0.0134 mgd of wastewater treatment demand anticipated through implementation of the Master Plan Update. Impacts would **less than significant** and no mitigation is required.

f) Less Than Significant Impact. The City's contractor for trash and recycling pickup is Waste Management, Inc., and there are a variety of landfills available, including Azusa Land Reclamation County Landfill, Mesquite Landfill, Bakersfield Metropolitan, California Street Landfill, Chiquita Canyon Sanitary Landfill, Colton Sanitary Landfill, El Sobrante Landfill, Lancaster Landfill and Recycling Center, Mid-Valley Sanitary Landfill, Olinda Alpha Sanitary Landfill, Puente Hills Landfill, San Timoteo Sanitary Landfill, and Victorville Sanitary Landfill, to service the City's solid waste generation. Each of these landfills has varying maximum permitted daily throughput and projected closure dates.

The nearest landfill to the project site is the Azusa Land Reclamation County Landfill located at 1211 West Gladstone Street in the City of Azusa. This facility includes 266 disposal acres, with a maximum permitted throughput of 8,000 tons per day, a maximum permitted capacity of approximately 80.57 million cubic yards, and an estimated closure date of January 2045.[106]

Landfill capacity is expected to decrease over time with future growth and development throughout Los Angeles County and surrounding areas. However, waste reduction and recycling programs and regulations are expected to reduce the demand and extend the life of existing

[102] 67,128 sf ÷ 1,000 sf × 0.46 AFY = 30.9 AFY of additional water demand.
[103] 67,128 sf ÷ 1,000 sf × 200 gallons per day = 13,425.6 gallons of wastewater per day.
[104] *Pomona Water Reclamation Plant.* Sanitation Districts of Los Angeles County. https://www.lacsd.org/wastewater/wwfacilities/joint_outfall_system_wrp/pomona.asp (Accessed September 17, 2018).
[105] *University of La Verne Facilities and Technology Master Plan Update.* Environmental Impact Report, SCH #2016071053. Page 387. City of La Verne. December 2016.
[106] *Facility/Site Summary Details: Azusa Land Reclamation Co. Landfill*. CalRecycle. http://www.calrecycle.ca.gov/SWFacilities/Directory/19-AA-0013/Detail/ (Accessed September 21, 2018).

landfills, and the City has maintained an average of 64 percent diversion of solid waste for recycling since 2007.[107]

At full buildout, the Master Plan Update proposes demolition of the existing 5,972 sf cafeteria facility and construction of four new buildings totaling approximately 73,100 sf of new building space (net increase of 67,128 sf). Based on a solid waste generation factor of 0.0013 tons per year per square foot of academic facility,[108] a net increase of 67,128 sf of building space would generate approximately 87.27 tons of additional solid waste.[109] With an average diversion rate for recycling of 64 percent, implementation of the Master Plan Update is expected to generate an additional 55.85 tons of solid waste per year (0.15 tons per day) to be transported to landfills at full build-out of the Master Plan. With a maximum permitted throughput of 8,000 tons per day, the Azusa Land Reclamation County Landfill has ample surplus capacity to serve the proposed project through build-out of the Master Plan. Therefore, potential impacts associated with landfill capacity would be **less than significant.** No mitigation is required.

g) Less Than Significant Impact. The California Integrated Waste Management Act of 1989 (AB 939), requires each city or county's source reduction and recycling element to include an implementation schedule demonstrating at least 50 percent diversion of solid waste from landfill disposal or transformation on and after January 1, 2000. SB 1016, passed in 2008, now requires the 50 percent diversion requirement to be calculated in a per capita disposal rate equivalent. The City has maintained an average of 64 percent diversion of solid waste for recycling since 2007.[110] During construction and operation, Damien High School administrators would ensure implementation of the proposed Master Plan Update occurs in accordance with waste and recycling laws and regulations, including the guidelines set forth in AB 939 and SB 1016. Therefore, impacts would be **less than significant**. No mitigation is required.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
XIX. Mandatory Findings of Significance				
a) Does the project have the potential to substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self- sustaining levels, eliminate a plant or animal community, 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?	☐	☒	☐	☐

[107] *University of La Verne Facilities and Technology Master Plan Update.* Environmental Impact Report, SCH #2016071053. Table 76: City of La Verne Per Capita Solid Waste Diversion Rates and Table 79: Estimated Solid Waste Generation. City of La Verne. December 2016.
[108] *Ibid*. Page 391 and Table 79: Estimated Solid Waste Generation. City of La Verne. December 2016.
[109] 67,128 sf × 0.0013 tons per sf per year = 87.27 tons of solid waste per year.
[110] *University of La Verne Facilities and Technology Master Plan Update.* Environmental Impact Report, SCH #2016071053. Table 76: City of La Verne Per Capita Solid Waste Diversion Rates and Table 79: Estimated Solid Waste Generation. City of La Verne. December 2016.

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)?	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Discussion

a) Potentially Significant Unless Mitigation Incorporated**.** Construction activities would occur within a developed property, which includes limited biological resources. However, mitigation measures have been identified (**Mitigation Measure BIO-1**) to reduce potential impacts to biological resources to a less than significant level. Additionally, **Standard Condition BIO-1** would ensure that even if the project is not conditioned to include a tree report, the on-site coast live oak would still be subject to protective measures detailed in Section 18.78.160 of the City Municipal Code pursuant to its definition as a "Significant Tree" under Section 18.78.020(M).

Implementation of **Mitigation Measures CUL-1** and **CUL-2** would ensure that future development projects facilitated under the Master Plan Update would be subject to site- and design-level analyses for potential impacts to historical resources in accordance with Public Resources Code 21084.1. Any potential impacts that could result in a substantial adverse change to the significance of historical resources could then be mitigated, as feasible, at the project level in accordance with *CEQA Guidelines* Section 15064.5. **Mitigation Measures CUL-3** and **CUL-4** are prescribed to mitigate any impacts associated with the discovery of previously undetected subsurface archaeological resources during excavation activities. Additionally, **Mitigation Measures CUL-5** and **CUL-6** are required in the event that unanticipated paleontological resources are unearthed during construction to ensure paleontological resources would be subject to scientific recovery and evaluation. Implementation of these mitigation measures would reduce impacts to these resources to **less than significant** levels.

b) Less Than Significant Impact. As presented in the discussion of environmental checklist Sections I through XVIII, the project would have no impact, a less than significant impact, or a less than significant impact after mitigation with respect to all environmental issues (Refer to Appendix G for a Mitigation Monitoring and Reporting Program). As stated previously, the project would result in an increase in land use density on the project site through new building construction, but Damien High School is not projecting an increase in student enrollment or faculty/staff throughout the life of the Master Plan. Therefore, no increase in land use or development intensity, and no potential cumulative overburdening of community infrastructure and service capacity, is expected to occur. Due to the limited scope of direct physical impacts to the environment associated with the proposed project, the impacts are project-specific in nature.

Consequently, the project along with other cumulative projects would result in a **less than significant** cumulative impact with respect to all environmental issues.

c) Potentially Significant Unless Mitigation Incorporated. In general, impacts to human beings are associated with air quality, geology and soils, hazards and hazardous materials, hydrology and water quality, and noise impacts. The South Coast Air Basin is currently designated as a non-attainment area for ozone, PM_{10}, and $PM_{2.5}$. Implementation of the Master Plan Update would not contribute significant amounts of air pollutant emissions on either a short-term or long-term basis. Adherence to SCAQMD dust control measures will further reduce short-term construction air quality impacts, and no project-specific mitigation is required.

Because the proposed Master Plan Update would be implemented in phases over a period of several years, construction plans would be subject to review by the City for compliance with the most current edition of the CBC at the time of construction, pursuant to Section 18.60.030 of the City Municipal Code and as modified by the City (**Standard Condition GEO-1**), and require preparation of site-specific geological, geotechnical, or structural design studies pursuant to Chapter 15.04 of the City Municipal Code (**Standard Condition GEO-2**).

Several on-site structures were constructed prior to 1978, so there is potential for demolition activities to release asbestos and or lead-based paint into the environment. With implementation of **Mitigation Measures HAZ-1** through **HAZ-3**, hazards to the public and the environment from renovation or demolition of structures containing asbestos and/or lead would be reduced to less than significant with mitigation incorporated.

Pursuant to California Public Utilities Code Section 21676 (Airport Land Use Commission), projects located within zones administered by airport land use compatibility plans must comply with project-specific conditions imposed by the ALUC. These conditions will be established through implementation of **Standard Condition HAZ-1** and will be reviewed and confirmed by the La Verne Community Development Director or designee in accordance with Chapter 18.16 (Development Review) and Chapter 18.60 (institutional Zone) of the La Verne Municipal Code so that execution of projects proposed under the Master Plan Update would occur in accordance with the BFALUCP. Through implementation of **Standard Condition HAZ-1**, the project would be consistent with the BFALUCP, and impacts related to risk to persons or property would be less than significant.

Adherence to Chapter 13.60 (Low Impact Development) of the City Municipal Code, the intent of the NPDES Permit for Los Angeles County and the incorporated cities of Los Angeles County (MS4 permit), and NPDES, SWPPP, SUSMP, and Urban Runoff Management Program requirements prepared as part of development applications under the Master Plan Update (i.e., **Standard Conditions HYD-1** through **HYD-3**) would ensure impacts related to water quality, hydrologic conditions of concern, and/or waste discharge remain less than significant.

Construction related noise levels were found to exceed applicable thresholds. With implementation of **Mitigation Measures NOI-1** through **NOI-3,** short-term (construction) noise impacts would be reduced to **less than significant** levels. Implementation of **Mitigation Measure NOI-4** would reduce construction vibration impacts to less than significant levels. With implementation of these mitigation measures, potential impacts on human beings would be reduced to **less than significant** levels.

REFERENCES

14 Code of Federal Regulations 77.9 - Construction or Alteration Requiring Notice. § 77.9(a)(1) Construction or Alteration Requiring Notice. https://www.law.cornell.edu/cfr/text/14/77.9 (Accessed June 19, 2018).

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Appendix A

Damien High School Master Plan Update (On Flash Drive)

DAMIEN
HIGH SCHOOL

DAMIEN HIGH SCHOOL MASTER PLAN

REVISED DECEMBER 2018

KALBAN ARCHITECTS

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PURPOSE

PURPOSE:

The intention of this Master Plan is to provide a comprehensive update to the Damien High School Master Plan which was last updated in 2000 to comply with the La Verne Municipal Code. The Municipal Code requires owners of properties in Institutional zones to maintain a Master Plan of development for all structures and intended improvements. Overall, the Master Plan strives to provide needed space, and areas dedicated for progressive academic activates as well as filling athletic gaps**.**

MISSION, GOALS, & OBJECTS:

Goals and Objects related to the Damien High School Master Plan are as follows:

- Create separate settings for teaching, learning, and athletics.
- Provide a separate Chapel facility which is central to the campus.
- Reinforce a "Sense of Place."
- Create a campus circulation pattern which softens pedestrian and vehicular interactions.

MISSION STATEMENT

"Damien High School promotes the intellectual, physical, and spiritual development of its students through instruction, fellowship, and prayer. Inspired by the exemplary commitment of St. Damien of Molokai, faculty and staff join parents, as primary educators, to prepare our young men for the demands of college and the challenges of adulthood."

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY
DAMIEN HIGH SCHOOL MASTER PLAN, REVISED NOVEMBER 2018

The Damien High School Master Plan (Master Plan) is being developed to address campus development for the next ten years. The Master Plan would resolve immediate needs and desires including academic facilities and internal campus circulation. Currently, there are not enough classrooms for the curriculum and the faculty, as the demand for Science, Technology, Engineering, and Mathematics (STEM) programs and pedagogy of science continue to grow. The Master Plan proposes to address the growing STEM field with a new state of the art Science and Technology building, which will include needed classrooms and allow the existing rooms to be repurposed and assigned to faculty members who currently do not have independent classrooms. The Master Plan is proposed to be completed in three phases which take advantage of underutilized facilities and maximizes the space with needed student facilities. These phases are summarized below:

Phase 1 – Entails the demolition of the existing dining shelter and removal of the portable kitchen structure. These functions will be replaced by a new 7,500 S.F. Student Center which will include food services as well as allowing a venue for formal and informal student gatherings, meetings and receptions as well as a 5000 square foot Wrestling Room. Construction for the first phase of the Master Plan is anticipated to commence in 2019.

Phase 2 – The existing underutilized tennis courts for the entire campus would be removed. Damien High School representatives have identified educational and spiritual needs to be of more importance for the land currently devoted for the tennis courts. The tennis team will not be eliminated; instead, they will take advantage of off-site tennis courts on an as-needed basis. Phase 2 will include a Science Building, a Chapel, a new building to house student services and the band program.
Additionally, a new 134 space parking lot south of the Gymnasium is proposed to address parking needs.

Phase 3 – The final phase of the Master Plan will include the removal of the parking lot to the east of the Event Center Building. The parking lot would be replaced with a 400 seat Performing Arts Center and be roughly the same height as the two-story Science and Technology Building.

EXISTING CONDITIONS

EXISTING CONDITIONS:

The Damien High School campus was established in 1904 as Bonita Union High School to serve the residents of La Verne, Lordsburg, and San Dimas. In circa 1920, the campus underwent a major expansion under the direction of John C. Austin, a well-known Los Angeles Architect. Austin's campus design stayed true to the traditional academic quadrangle, with the principal building located around a central, open rectangular-shaped area which is still present today. John C. Austin's architectural contributions include the Griffith Observatory and the Los Angeles City Hall.

In 1959, state officials determined many of the existing buildings at Bonita Union High School were not earthquake safe, which necessitated the relocation and construction of the current high school on D Street to meet this requirement. The campus was sold shortly after to the Catholic Archdiocese of Los Angeles, which brought the building up to code, and established an all boy's high school.

The existing Damien High School Campus is approximately 25.8 acres or 1,123,635 square feet, and has a campus student population of approximately 915 students with a staff of approximately 75. A breakdown of the student population is provide in a table (right), and adjusts annually with an average student population of 900. There are 415 on-site parking spaces peppered throughout the campus.

2017-18 STUDENT POPULATION	
CLASS	**SIZE**
SENIORS	250
JUNIORS	210
SOPHMORES	225
FRESHMEN	230
TOTAL	915

Approximately 18 years ago, during the last major Master Plan for the campus a parking permit system was established to address deficiencies in onsite parking. The permit parking system requires all staff and students parking on campus to have a parking permit. Student parking is restricted to the northeast lot for the Senior class and the west and south lots are reserved for all other students and faculty. Additionally, students and faculty are prohibited from parking on neighborhood streets, and limits the public use of the Gymnasium to non-school hours.

EXISTING CAMPUS LAYOUT AND SIZE CALCULATION

BUILDING AREA TABULATION

Building Name		Size	
100 BUILDING	=	8,576	S.F.
200 BUILDING	=	6,900	S.F.
300 BUILDING	=	12,300	S.F.
400 BUILDING	=	6,350	S.F.
500 BUILDING	=	3,500	S.F.
600 BUILDING	=	14,260	S.F.
LUNCH AREA	=	5,422	S.F.
SPARTAN HALL	=	4,414	S.F.
EVENT CENTER	=	14,077	S.F.
CONCESSION STAND	=	1,560	S.F.
POOL BUILDING	=	1,868	S.F.
GYMNASIUM	=	36,150	S.F.
MAINTENANCE BLDG	=	2,800	S.F.
PRIESTS GARAGE	=	400	S.F.
PRIESTS RESIDENCE	=	10,104	S.F.
LUNCH PAVILION	=	4,050	S.F.
TOTAL	=	132,731	S.F.
OVERALL CAMPUS SIZE	=	1,123,635	S.F.
EXISTING LOT COVERAGE	**=**	**11.8%**	

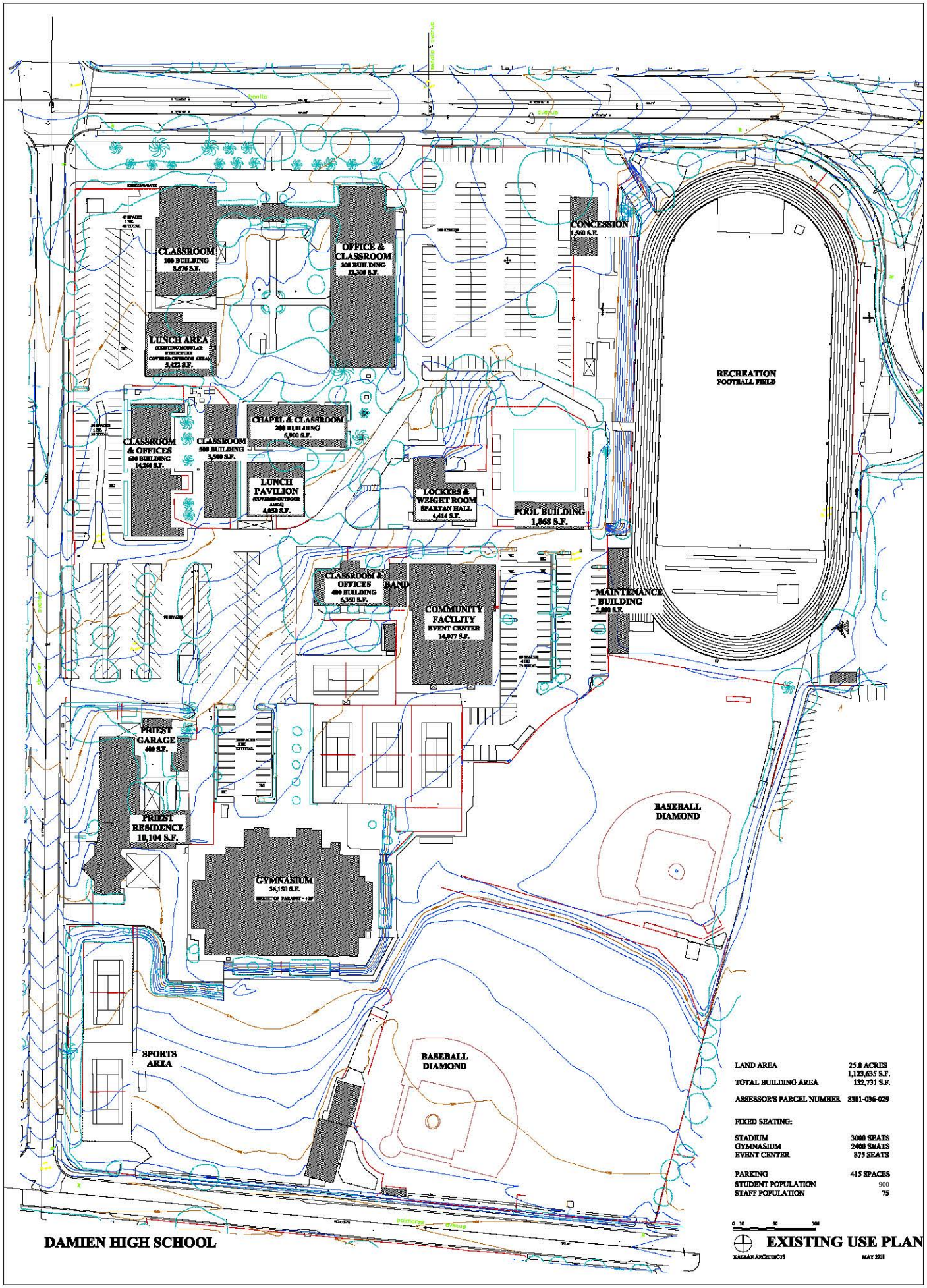
Located towards the southern portion of campus lies the Priests' Residence and Gymnasium, which provides office space for faculty, athletic opportunities, as well as office space for the campus priest.

A table (above) has been generated identifying the name of each building along with the approximate size of each building. Additionally, an aerial (right) labeling each associated building has been created as a visual component and complimentary to the existing building area tabulation table.

The existing campus consists of sixteen buildings which are used for academic, maintenance, storage, congregation, faith and athletic purposes.

The quad buildings are located towards the northwest portion of campus and include the 100, 200, 300, 500, 600 and lunch area. These buildings are used for classrooms, offices, chapel, and lunchtime congregation.

Located directly to the southeast of the quad buildings, and centralized to the Damien High School campus are the Spartan Hall, the 400 building, the Pool building, and the Event Center. These building serve academic and athletic purposes.


CLASSROOM
100 BUILDING
8,976 S.F.
OFFICE & CLASSROOM
300 BUILDING
12,300 S.F.
CONCESSION
1,560 S.F.
LUNCH AREA
(EXCLUDING REGULAR FURNITURE)
COVERED OUTDOOR AREA)
5,421 S.F.
RECREATION
FOOTBALL FIELD
CLASSROOM & OFFICES
600 BUILDING
14,946 S.F.
CLASSROOM
500 BUILDING
3,500 S.F.
CHAPEL & CLASSROOM
200 BUILDING
6,900 S.F.
LUNCH PAVILION
(COVERED OUTDOOR AREA)
4,825 S.F.
LOCKERS & WEIGHT ROOM
SPARTAN HALL
4,414 S.F.
POOL BUILDING
1,968 S.F.
CLASSROOM & OFFICES
400 BUILDING
6,350 S.F.
BAND
COMMUNITY FACILITY
EVENT CENTER
14,977 S.F.
MAINTENANCE BUILDING
2,880 S.F.
PRIEST GARAGE
400 S.F.
PRIEST RESIDENCE
10,104 S.F.
GYMNASIUM
36,150 S.F.
BASEBALL DIAMOND
BASEBALL DIAMOND
SPORTS AREA
LAND AREA 25.8 ACRES 1,123,635 S.F.
TOTAL BUILDING AREA 132,731 S.F.
ASSESSOR'S PARCEL NUMBER 8381-036-029
FIXED SEATING:
STADIUM 3000 SEATS
GYMNASIUM 2400 SEATS
EVENT CENTER 875 SEATS
PARKING 415 SPACES
STUDENT POPULATION 900
STAFF POPULATION 75
DAMIEN HIGH SCHOOL
EXISTING USE PLAN
KALMAN ARCHITECTS
MAY 2011

MASTER PLAN

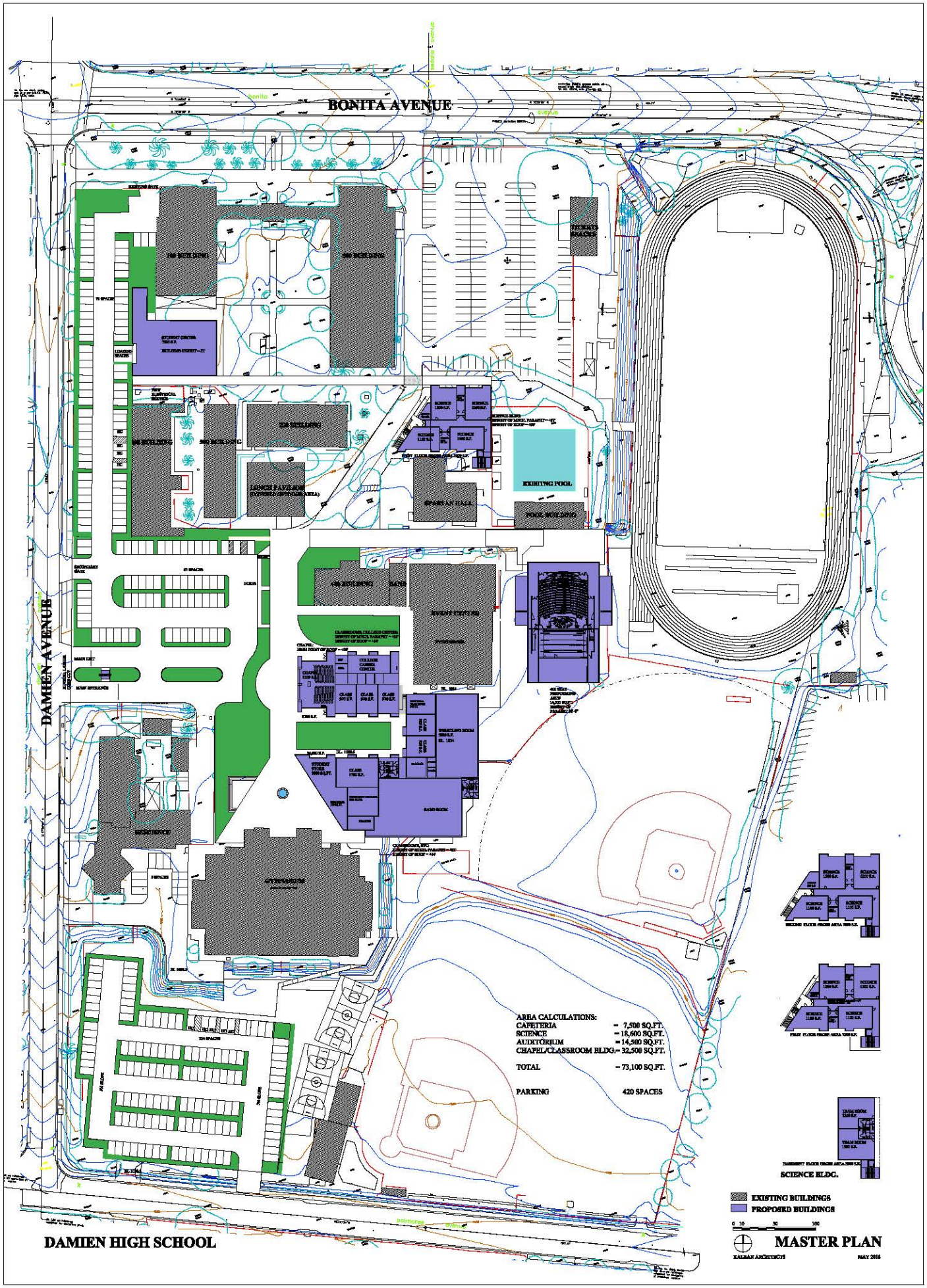
PROPOSED:

The Master Plan new construction would increase the building square-footage of the campus by approximately 73,100. The demolition of the Lunch Area of 5,972 square feet would be replaced with a Student Center approximately 7,500 square feet. The completion of all three phases of development will equate to an increase in parking of five spaces, totaling 420 parking spaces. There is no programmatic increase anticipated in the student population and no increase in faculty. A table has been generated (left) which quantifies the proposed improvements.

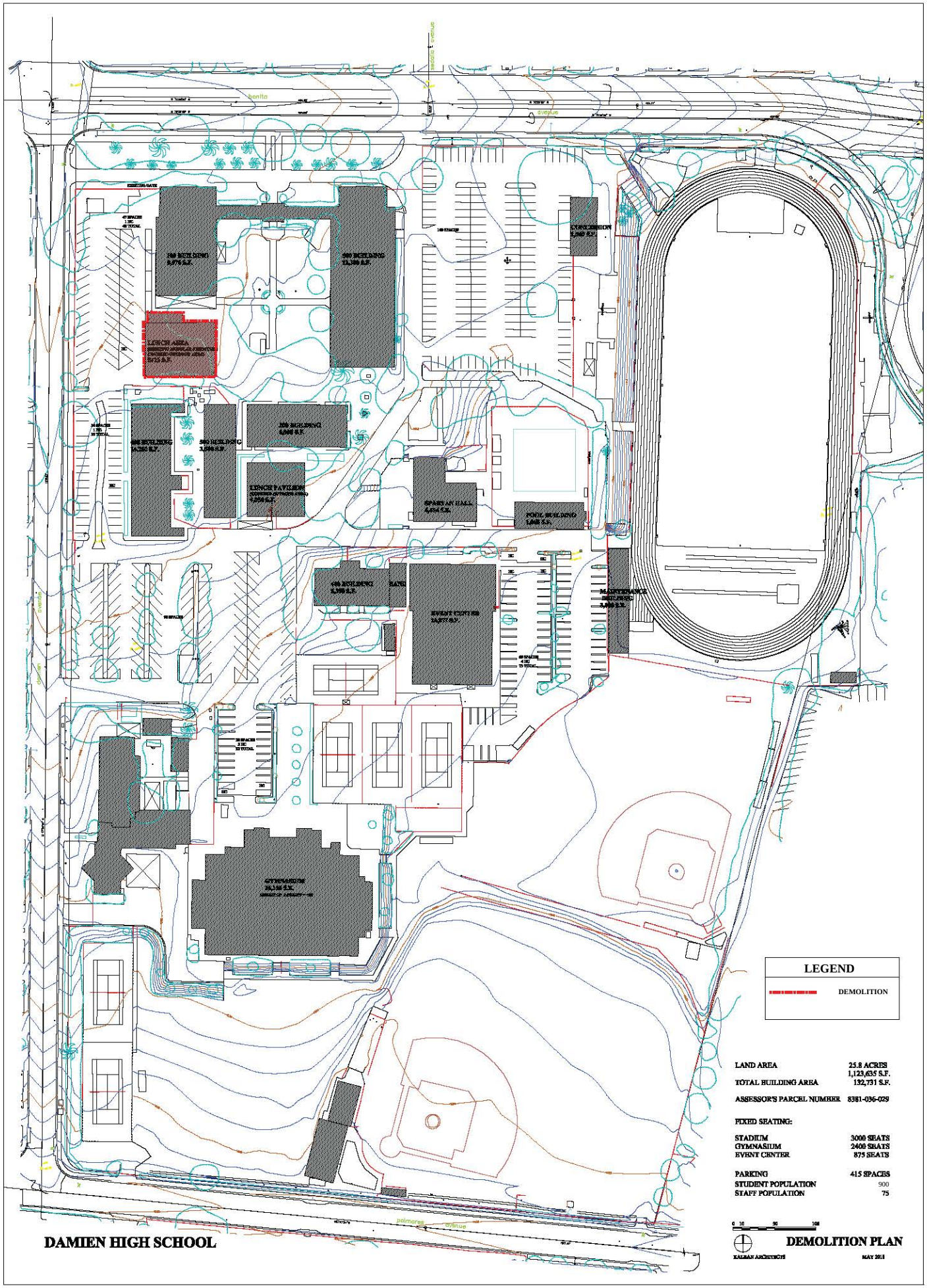
PROPOSED MASTER PLAN BUILD-OUT	
EXISTING SITE	132,731
NEW CONSTRUCTION	73,100
DEMOLITION	5,972
TOTAL	199,859
PARKING	420
PROPOSED CAMPUS COVERAGE	17.8%

TIME FRAME:

The actual time frame for the build out of the Master Plan is dependent upon funding sources and a productive fundraising campaign. Currently, the schedule for the Master Plan is anticipated to be years into the future. The first phase would commence in 2019, and take approximately nine months to complete. Phase Two of the Master Plan is anticipated to be completed in several sub phases, and would likely be dependent on funding sources. The second phase is anticipated to span a minimum of five years, and kickoff shortly after the completion of phase one construction. The third and final phase is not anticipated to start construction until all of the sub phases identified in Phase Two are complete.


BONITA AVENUE
DAMIEN AVENUE
DAMIEN HIGH SCHOOL
AREA CALCULATIONS:
CAFETERIA = 7,500 SQ.FT.
SCIENCE = 18,600 SQ.FT.
AUDITORIUM = 14,500 SQ.FT.
CHAPEL/CLASSROOM BLDG.= 32,500 SQ.FT.
TOTAL = 73,100 SQ.FT.
PARKING 420 SPACES
SCIENCE BLDG.
EXISTING BUILDINGS
PROPOSED BUILDINGS
MASTER PLAN
MAY 2016

DEMOLITION PLAN


DAMIEN HIGH SCHOOL
LEGEND
DEMOLITION
LAND AREA 25.8 ACRES
1,123,635 S.F.
TOTAL BUILDING AREA 132,731 S.F.
ASSESSOR'S PARCEL NUMBER 8381-036-029
FIXED SEATING:
STADIUM 3000 SEATS
GYMNASIUM 2400 SEATS
EVENT CENTER 875 SEATS
PARKING 415 SPACES
STUDENT POPULATION 900
STAFF POPULATION 75
DEMOLITION PLAN
KALKAN ARCHITECTS
MAY 2011

MASTER PLAN
PHASE I

PHASE 1:

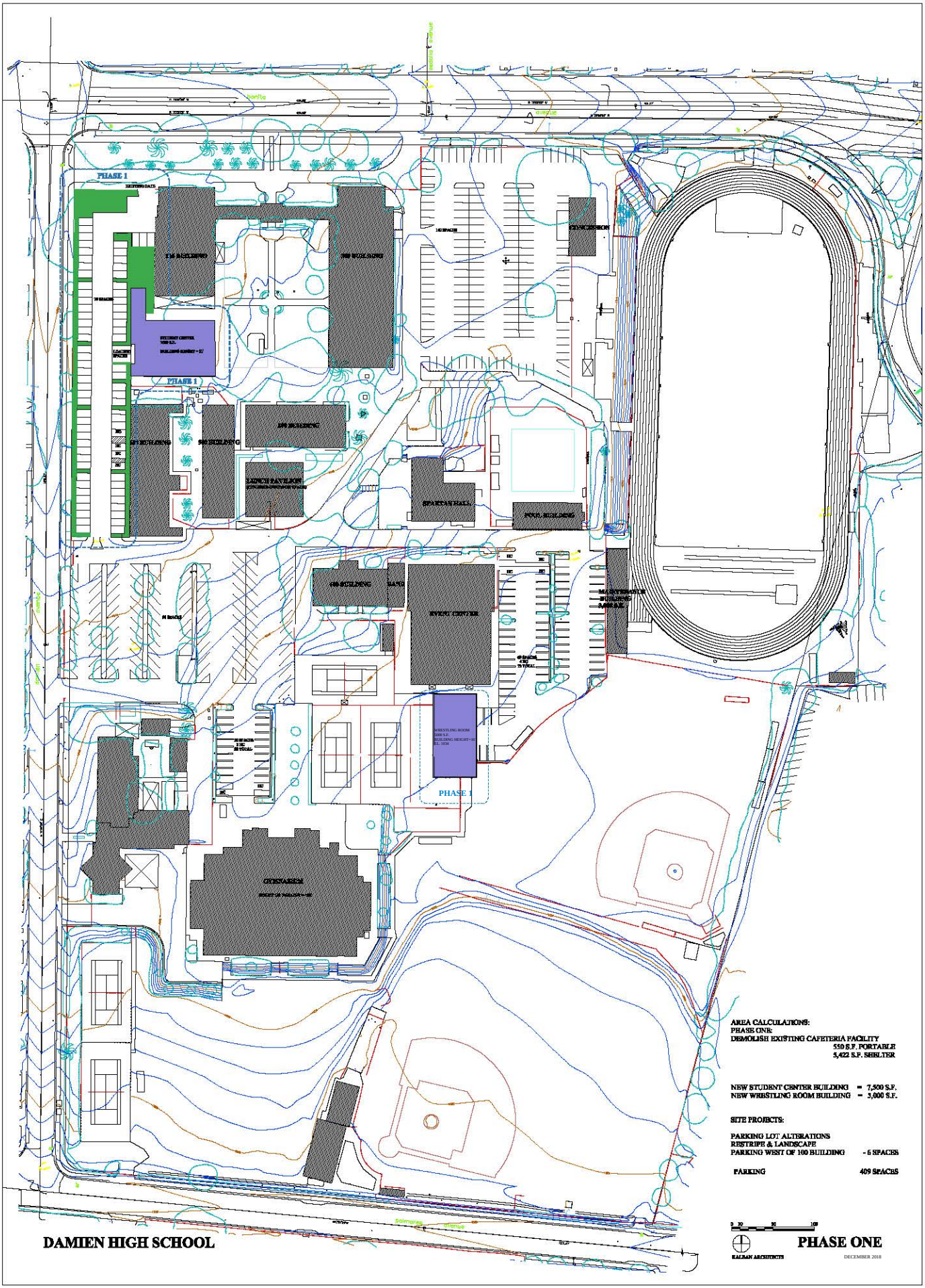
Phase one entails the demolition of the existing Lunch Area and open-air shelter, and removal of the portable kitchen structure. These functions will be replaced by a new 7,500 square feet Student Center that will have food service as well as providing a venue for formal and informal student gatherings, meetings and receptions. While construction is underway for the new Student Center, temporary provisions will be made to accommodate students during lunchtime. Phase one will include the construction of a 5,000 square foot Wrestling Room.

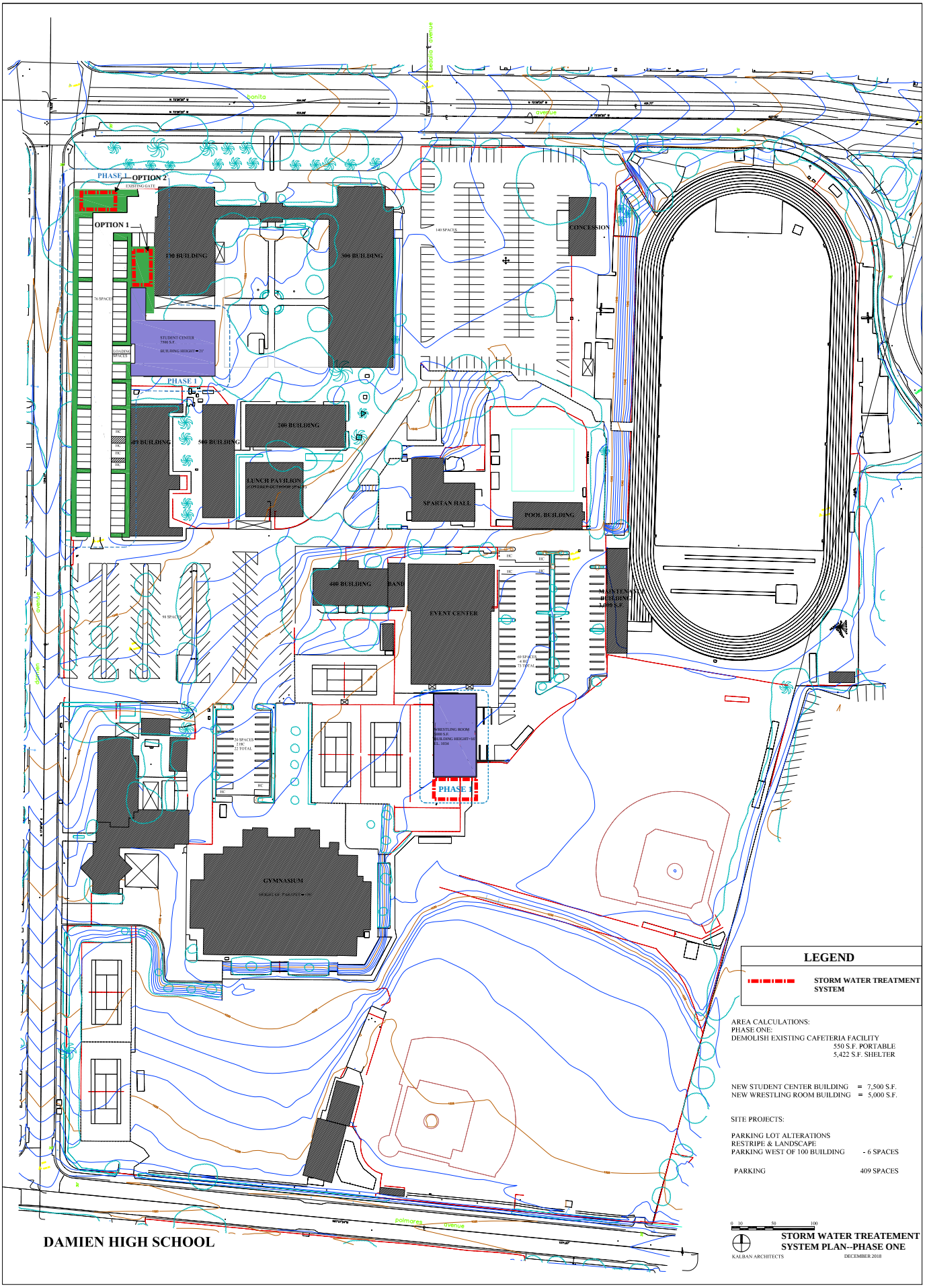
ONSITE PARKING	
PHASES	**PARKING COUNT**
EXISTING	415
PHASE 1	***409***
PHASE 2	-
PHASE 3	-
REQUIRED PARKING	575

The existing parking area west of the 100 Building will be restriped as 90 degree parking meeting the City of La Verne's development standards for parking areas. The parking lot redesign will result in a loss of six parking spaces, but provide for additional landscaped areas including a more functional parking lot layout.

The site plans on the following pages identify the phase one modifications to the Damien High School campus. The site plan titled "Phase One" highlights the areas to be modified in green, which specifies the restriping and reconfiguration of the parking lot. The blue colored box calls-out the new Student Center of approximately 7,500 square feet, with a building height of approximately 21'-0" and the approximately 5,000 square foot Wrestling Room with a building height of approximately 16 feet.

In order to meet storm water drainage requirements and surface runoff, a separate site plan titled "Storm Water Treatment System Plan – Phase One" has been included, which highlights potential areas to satisfy Storm Water Treatment requirements. The potential areas identified are illustrated with a red dashed rectangular shape. Ultimately, the final location(s) and more detailed information will be provided once construction drawings are developed.


PHASE 1
PHASE 1
PHASE 1
PHASE 1
AREA CALCULATIONS:
PHASE ONE:
DEMOLISH EXISTING CAFETERIA FACILITY
550 S.F. PORTABLE
5,422 S.F. SHELTER
NEW STUDENT CENTER BUILDING = 7,500 S.F.
NEW WRESTLING ROOM BUILDING = 5,000 S.F.
SITE PROJECTS:
PARKING LOT ALTERATIONS
RESTRIPE & LANDSCAPE
PARKING WEST OF 100 BUILDING - 6 SPACES
PARKING 409 SPACES
DAMIEN HIGH SCHOOL
PHASE ONE
DECEMBER 2018



DAMIEN HIGH SCHOOL

LEGEND

STORM WATER TREATMENT SYSTEM

AREA CALCULATIONS:
PHASE ONE:
DEMOLISH EXISTING CAFETERIA FACILITY
550 S.F. PORTABLE
5,422 S.F. SHELTER

NEW STUDENT CENTER BUILDING = 7,500 S.F.
NEW WRESTLING ROOM BUILDING = 5,000 S.F.

SITE PROJECTS:

PARKING LOT ALTERATIONS
RESTRIPE & LANDSCAPE
PARKING WEST OF 100 BUILDING - 6 SPACES

PARKING 409 SPACES

0 10 50 100

STORM WATER TREATEMENT SYSTEM PLAN--PHASE ONE

KALBAN ARCHITECTS DECEMBER 2018

MASTER PLAN
PHASE II

PHASE 2:

The second phase of the Master Plan is the major step in the reimagining of the campus. Adjustments to the inefficient circulation pattern, the addition of onsite parking spaces, the creation of a grand promenade, and the construction of a Chapel, Activities Building, and Science Building are all important campus improvements. The new buildings and improvements are necessary to sustain Damien High School as a competitive private faith-based high school. The next pages highlight the improvements proposed for the second phase with the blue colored squares representing proposed building, and the green areas identifying new parking and landscaped areas.

Onsite Parking	
Phases	**Parking Count**
Existing	415
Phase 1	409
Phase 2	***493***
Phase 3	-
Required Parking	575

Directly north of the Gymnasium is a major element in the reimagining of the campus. This is a grand promenade linking the north and south ends of the campus. Current pedestrian circulation is unclear with students having no other choice, in most cases, but to share drive isles with vehicles. The grand promenade sets the stage for the development and improvements on both sides of the pedestrian connection.

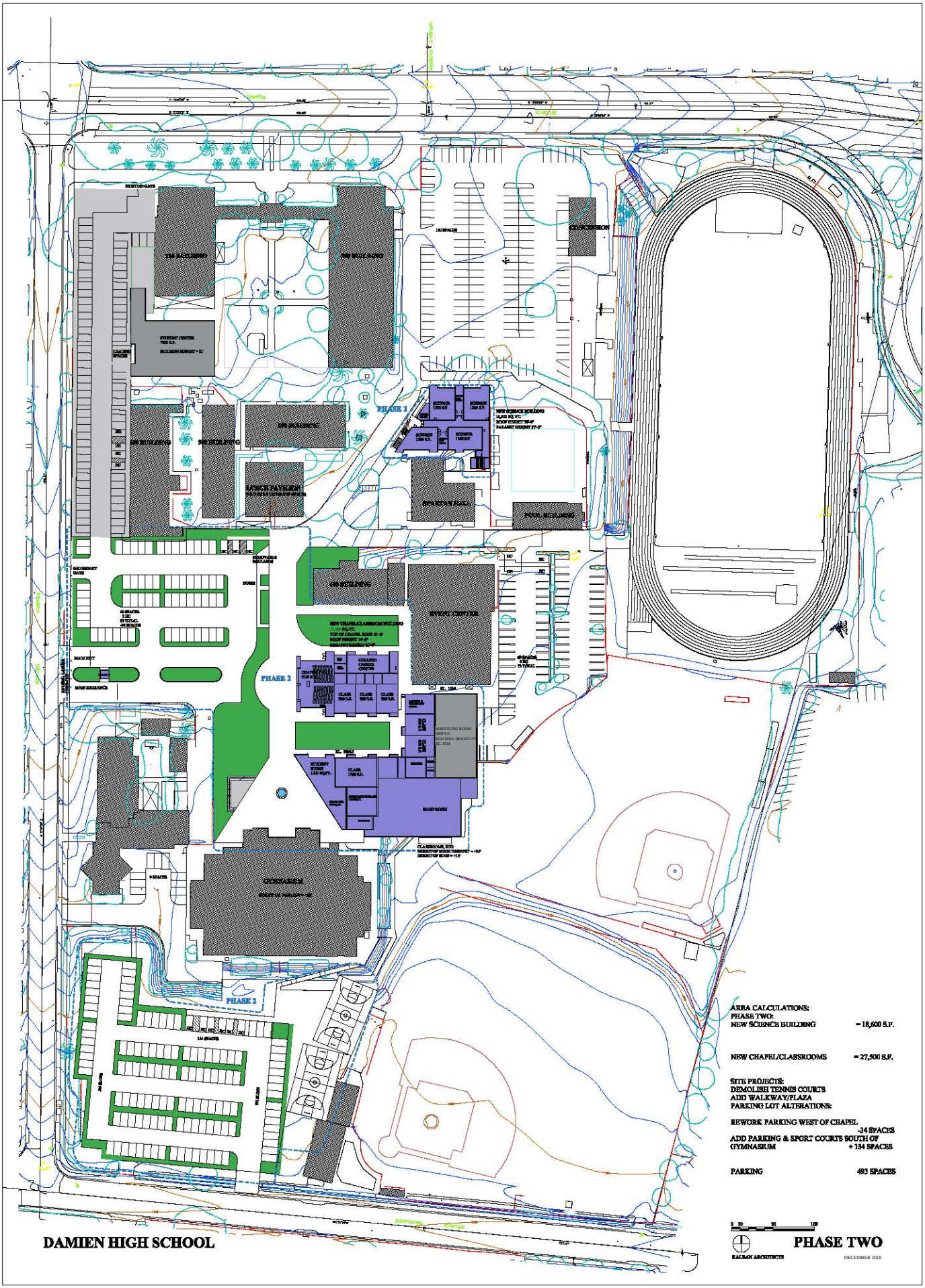
On the west side of the promenade landscaping is formed at an angle with a seating area imbedded into the new landscaped area, which replaces a parking lot of 34 spaces. The landscaped areas and pedestrian path act as the spine to the campus, and would terminate at the Lunch Pavilion. The existing parking lot to the west would be reconfigured and cut off restricting circulation to east half of the campus.

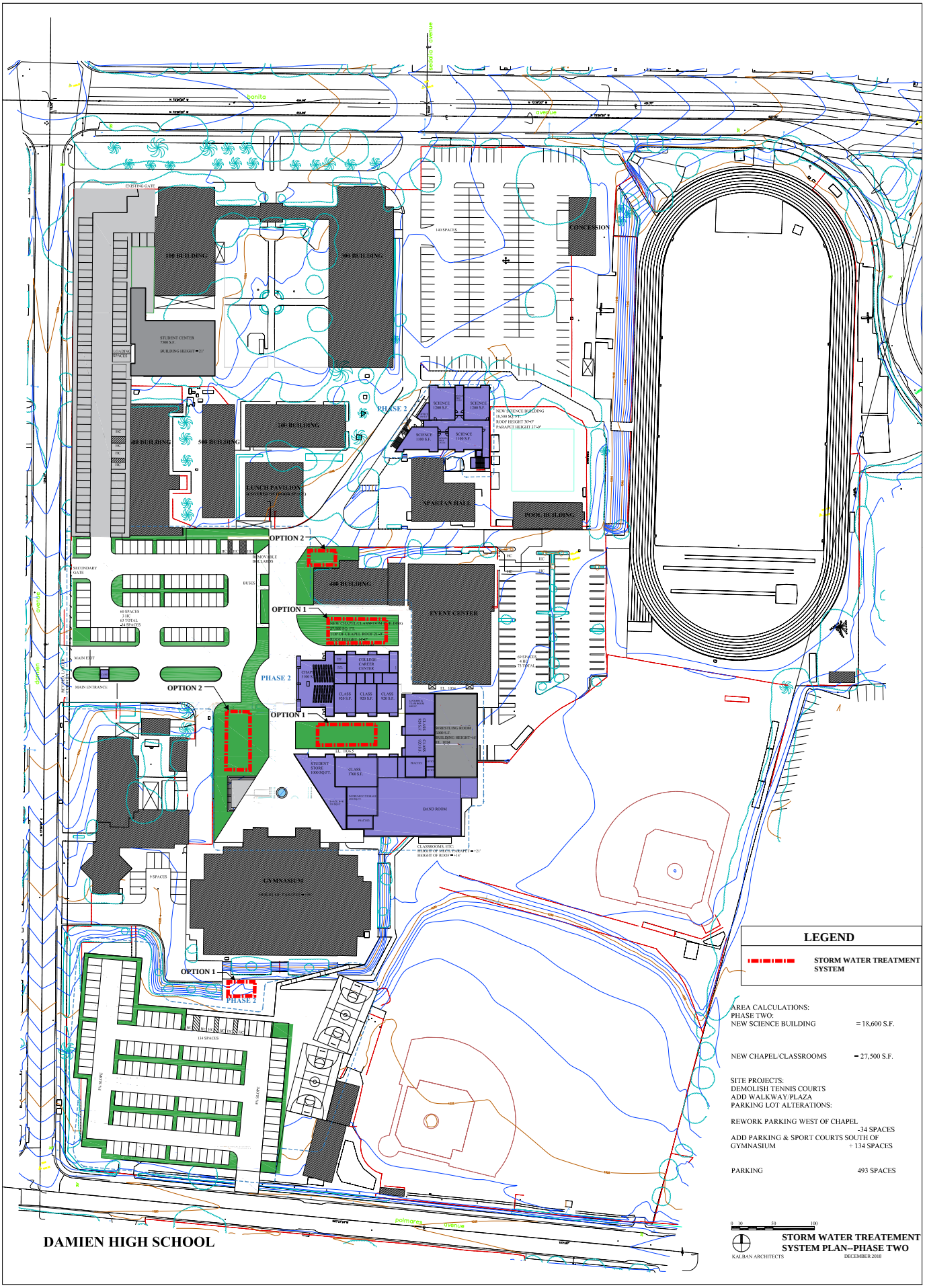
The east side of the promenade includes a new Chapel and Activities Building, and further to the northeast would be the location of the two-story Science Building. The Chapel and Activities Building includes a 220 seat Chapel, college counselling offices, academic classrooms, band room , snack bar, and student store. The Chapel would be the first dedicated Chapel on campus, as the Chapel area has been shared with other buildings and uses over the years.

A two-story Science Building would also be a part of the second phase of the Master Plan, and would include a basement. The Science Building would allow for independent access to further STEM programs implemented through the Damien High School curriculum, and include eight new science classrooms with offices and preparation rooms on the ground floor and second floor. Team meeting areas would be potentially dedicated for the basement level.

Capping off the second phase of development for the Master Plan would be the construction of a new 134 space parking lot south of the Gymnasium, and the construction of two outdoor basketball courts. The new parking lot provides additional onsite parking which is identified in the table above. Due to existing topographic conditions the new parking lot will have access from Palomares Avenue and connect to the campus via pedestrian walkways.

A separate site plan titled “Storm Water Treatment System Plan – Phase Two” has been included, which highlights potential areas to satisfy Storm Water Treatment requirements. The potential areas identified are illustrated with a red dashed hallow rectangular shape. Ultimately, the final location(s) and more detailed information will be provided once construction drawings are developed.


PHASE 1
PHASE 2
PHASE 2
AREA CALCULATIONS:
PHASE TWO:
NEW SCIENCE BUILDING = 18,600 S.F.
NEW CHAPEL/CLASSROOMS = 27,500 S.F.
SITE PROJECTS:
DEMOLISH TENNIS COURTS
ADD WALKWAY/PLAZA
PARKING LOT ALTERATIONS:
REWORK PARKING WEST OF CHAPEL -34 SPACES
ADD PARKING & SPORT COURTS SOUTH OF GYMNASIUM + 134 SPACES
PARKING 493 SPACES
DAMIEN HIGH SCHOOL
PHASE TWO
KALISAN ARCHITECTS
DECEMBER 2018



100 BUILDING
300 BUILDING
CONCESSION
STUDENT CENTER
PHASE 2
200 BUILDING
500 BUILDING
LUNCH PAVILION
SPARTAN HALL
POOL BUILDING
OPTION 2
OPTION 1
400 BUILDING
EVENT CENTER
COLLEGE CAREER CENTER
CLASS 920 S.F.
BAND ROOM
GYMNASIUM
PHASE 2
134 SPACES
LEGEND
STORM WATER TREATMENT SYSTEM
AREA CALCULATIONS:
PHASE TWO:
NEW SCIENCE BUILDING = 18,600 S.F.
NEW CHAPEL/CLASSROOMS = 27,500 S.F.
SITE PROJECTS:
DEMOLISH TENNIS COURTS
ADD WALKWAY/PLAZA
PARKING LOT ALTERATIONS:
REWORK PARKING WEST OF CHAPEL -34 SPACES
ADD PARKING & SPORT COURTS SOUTH OF GYMNASIUM + 134 SPACES
PARKING 493 SPACES
DAMIEN HIGH SCHOOL
STORM WATER TREATEMENT SYSTEM PLAN--PHASE TWO
KALBAN ARCHITECTS
DECEMBER 2018

MASTER PLAN
PHASE III

PHASE 3:

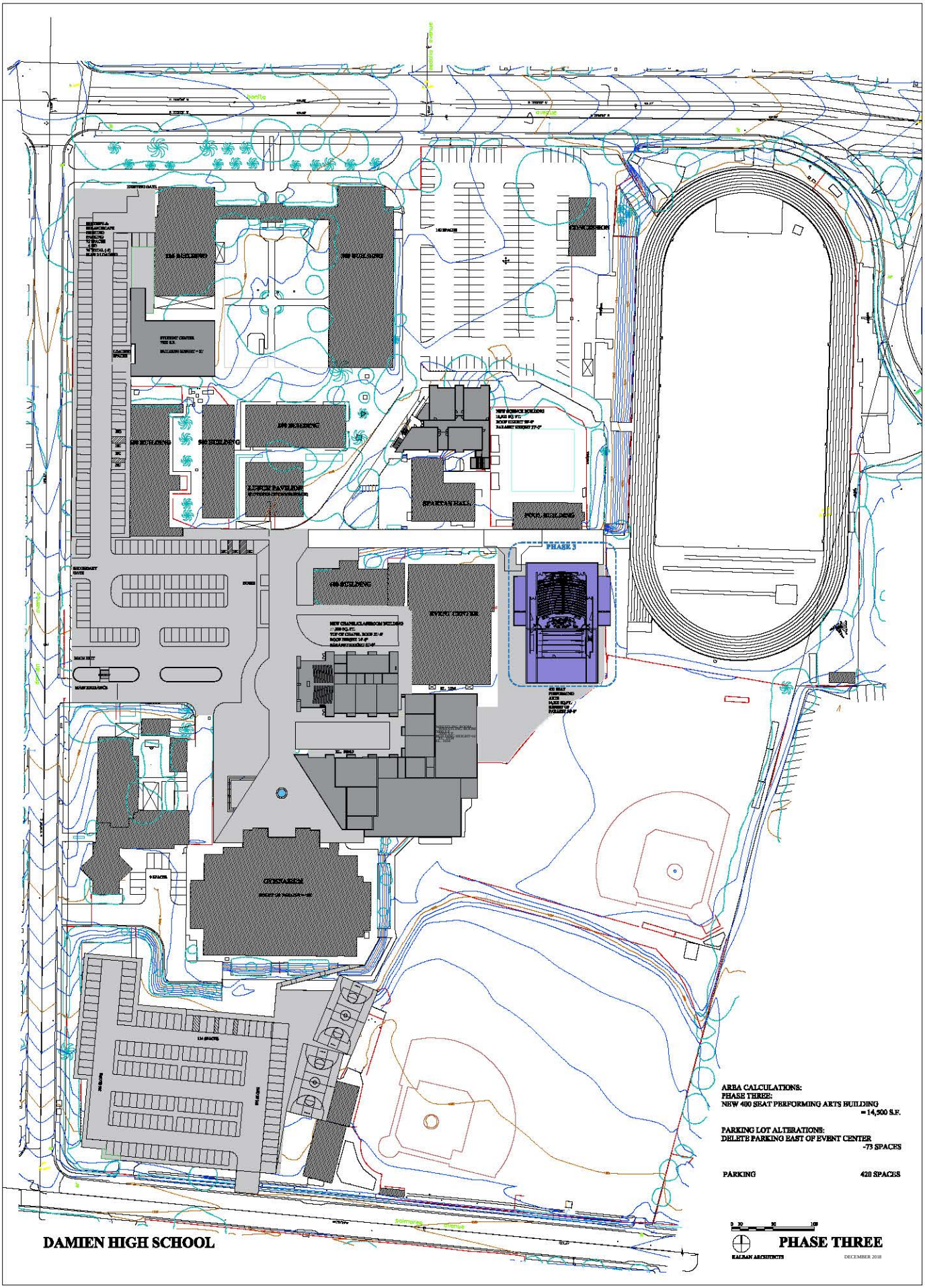
The final phase of the Damien High School Master Plan would include the removal of an existing parking lot of 73 spaces located east of the Event Center and the construction of a new Performing Arts Center. The proposed Performing Arts building would be approximately 14,500 square feet in area and include 400 seats.

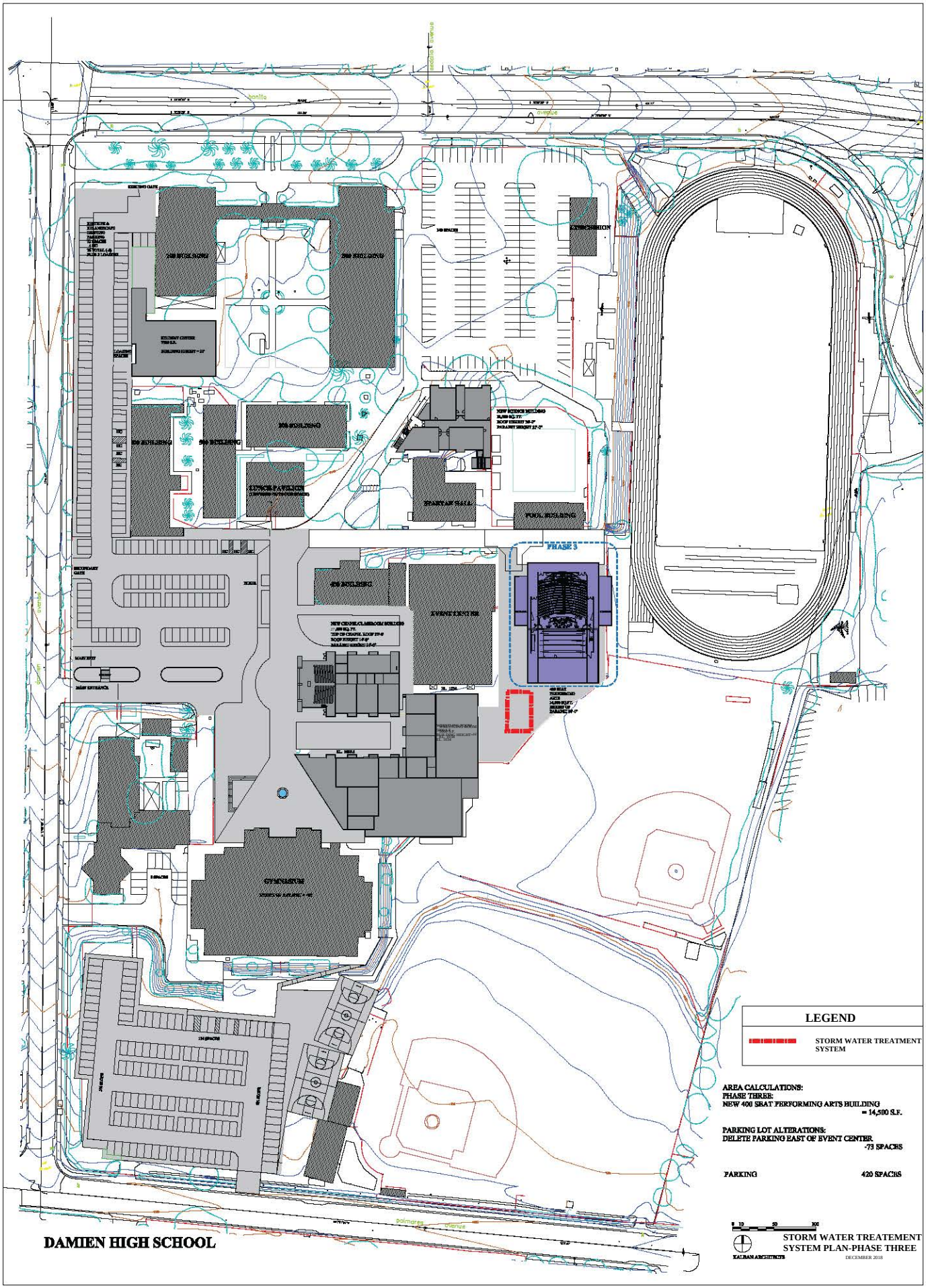
Onsite Parking	
Phases	**Parking Count**
Existing	415
Phase 1	409
Phase 2	493
Phase 3	***420***
Required Parking	575

The campus parking for the third phase would be reduced, but the overall parking would experience a slight increase. A table (left) has been generated highlighting the parking counts for all phases of development and identifies the required parking at total build out of the Master Plan.

The site plan on the following page identifies the phase three improvements to the Damien High School campus. The site plan titled "Phase Three" highlights the areas to be modified in blue. The blue colored box calls-out the new Performing Arts Center of approximately 14,500 square feet, with an overall building height of approximately 36'-0".

As mentioned in the first two phases of the Master Plan regarding storm water drainage, the third phase of campus development would also require storm water drainage compliance. A separate site plan titled "Storm Water Treatment System Plan – Phase Three" has been included, which highlights a potential area to satisfy Storm Water Treatment requirements. The potential area identified is illustrated with a red dashed hallow rectangular shape. Ultimately, the final location(s) and more detailed information will be provided once construction drawings are developed.


PHASE 3
AREA CALCULATIONS:
PHASE THREE:
NEW 400 SEAT PERFORMING ARTS BUILDING
= 14,500 S.F.
PARKING LOT ALTERATIONS:
DELETE PARKING EAST OF EVENT CENTER
-73 SPACES
PARKING
420 SPACES
DAMIEN HIGH SCHOOL
PHASE THREE
KALEAN ARCHITECTS
DECEMBER 2018


DAMIEN HIGH SCHOOL
PHASE 3
LEGEND
STORM WATER TREATMENT SYSTEM
AREA CALCULATIONS:
PHASE THREE:
NEW 400 SEAT PERFORMING ARTS BUILDING
= 14,500 S.F.
PARKING LOT ALTERATIONS:
DELETE PARKING EAST OF EVENT CENTER
-73 SPACES
PARKING
420 SPACES
STORM WATER TREATEMENT SYSTEM PLAN-PHASE THREE
KAUBAN ARCHITECTS
DECEMBER 2018

CIRCULATION & PARKING

CIRCULATION AND PARKING:

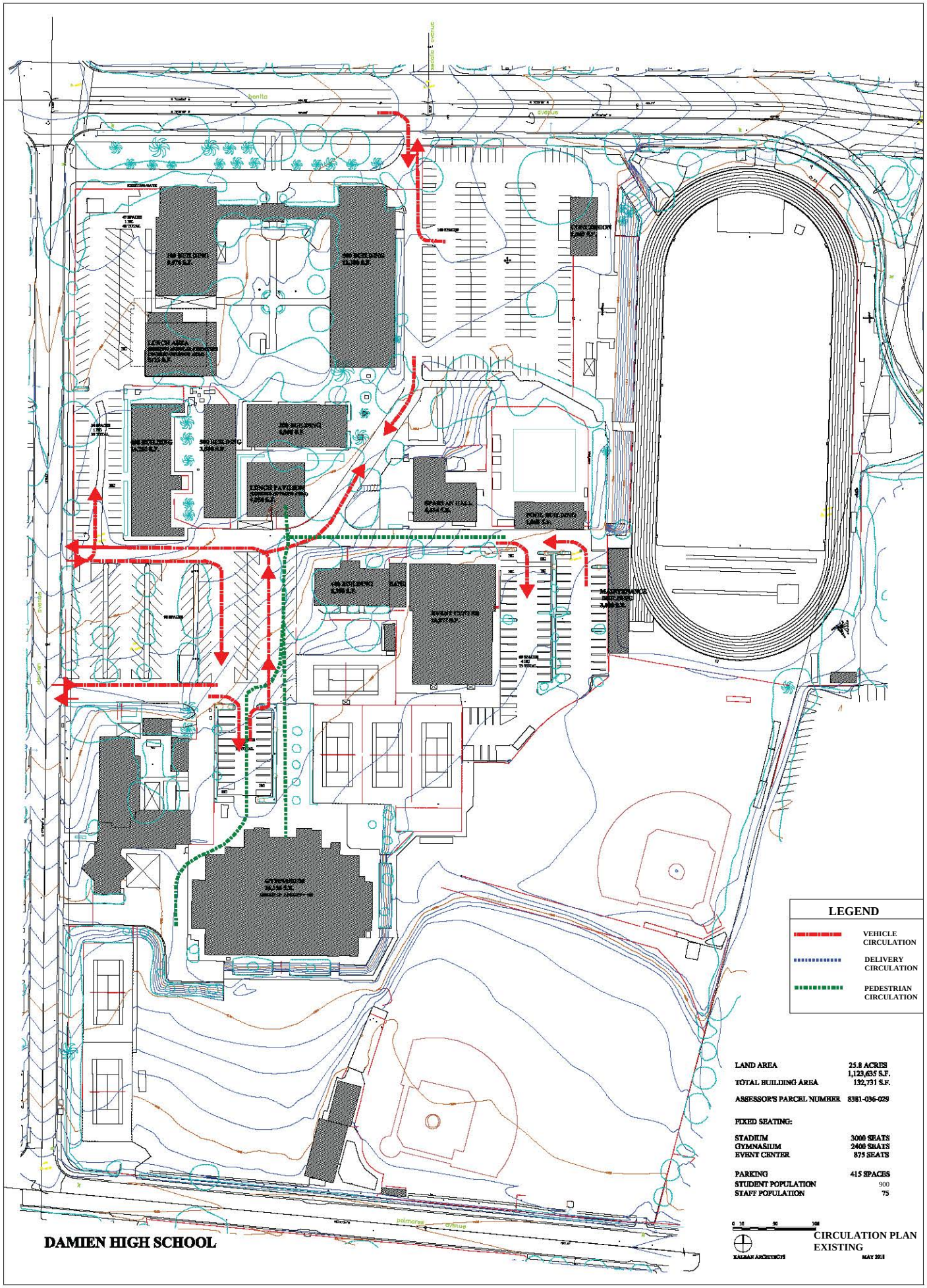
The Master Plan separates pedestrians and vehicles on campus, creating a much safer environment. A grand promenade will link the north and south ends of campus establishing gathering areas, quads and a plaza at the gymnasium.

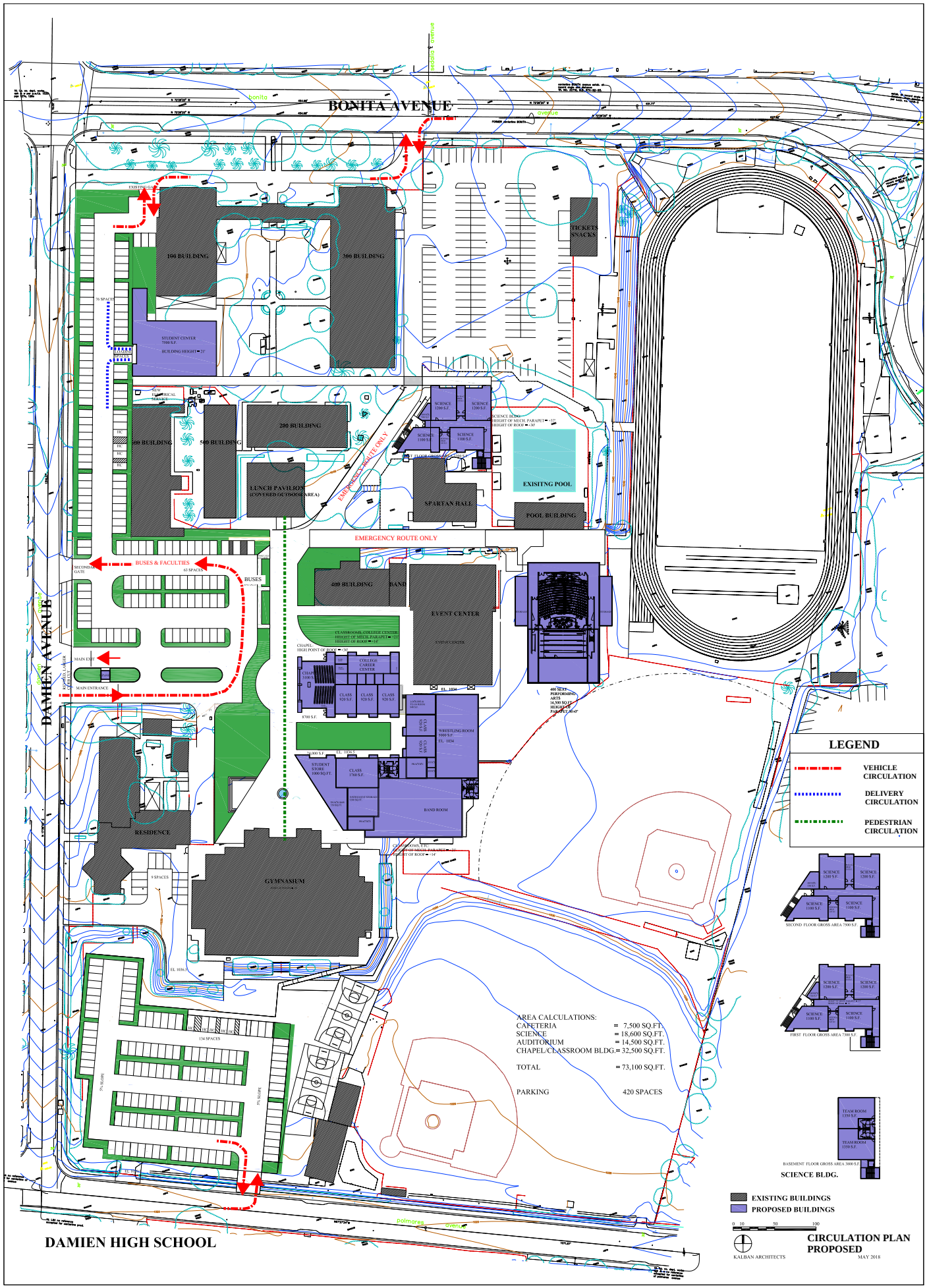
Onsite Parking	
Phases	**Parking Count**
Existing	415
Phase 1	409
Phase 2	493
Phase 3	420
Required Parking	575

The Plan reorganizes the on-site parking and brings the parking areas into compliance with the City of La Verne standard stall size (9'x19') with 25' back-up and providing handicapped accessible spaces. The area will also be landscaped to meet municipal parking lot standards.

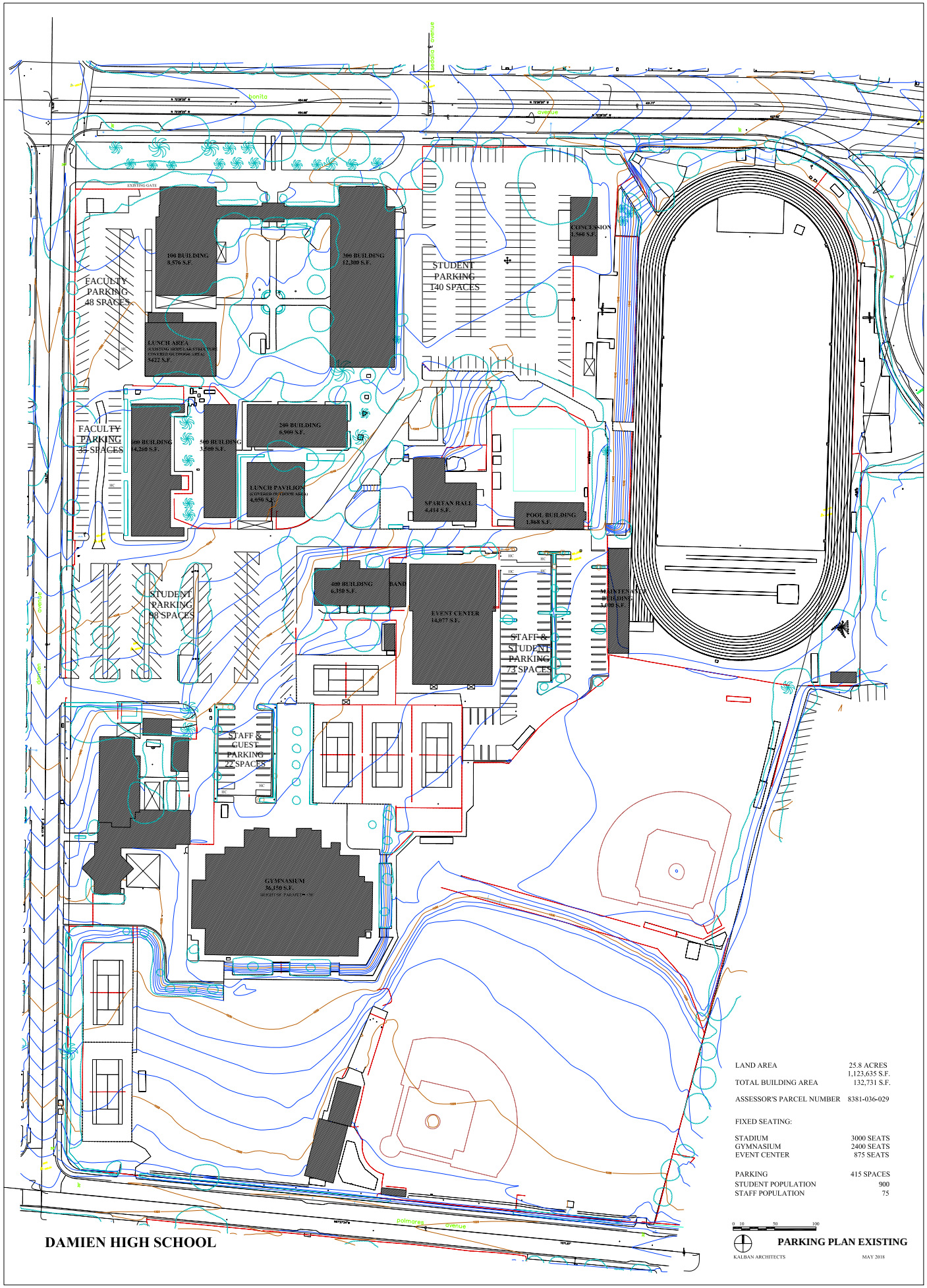
The June 5, 2000 Staff Report from the City of La Verne Community Development Department, recommended approval of 388 parking spaces on campus. Currently the Damien campus provides 415 parking spaces, and is projected to increase from 415 to 420. The proposed Master Plan foresees neither an increase in student enrollment nor an increase in the number faculty.

The organization and creativity of the Master Plan for the campus reinforces a "Sense of Place" while allowing for the formal and informal gathering of students and faculty that has become an essential element in 21st Century education.


DAMIEN HIGH SCHOOL
LEGEND
VEHICLE CIRCULATION
DELIVERY CIRCULATION
PEDESTRIAN CIRCULATION
LAND AREA 25.8 ACRES 1,123,635 S.F.
TOTAL BUILDING AREA 132,731 S.F.
ASSESSOR'S PARCEL NUMBER 8381-036-029
FIXED SEATING:
STADIUM 3000 SEATS
GYMNASIUM 2400 SEATS
EVENT CENTER 875 SEATS
PARKING 415 SPACES
STUDENT POPULATION 900
STAFF POPULATION 75
CIRCULATION PLAN EXISTING
KALMAN ARCHITECTS
MAY 2011



DAMIEN HIGH SCHOOL



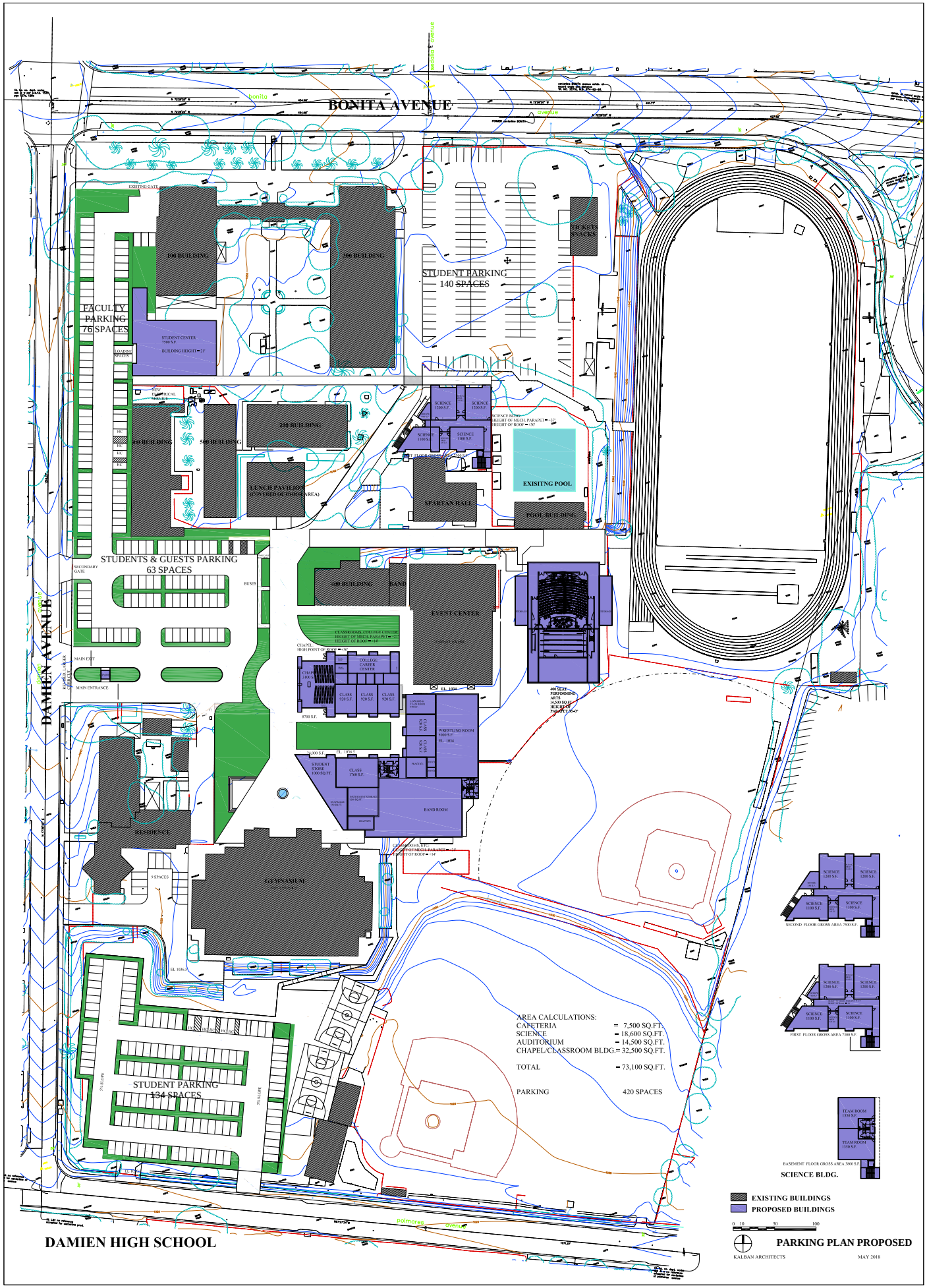
DAMIEN HIGH SCHOOL

LAND AREA	25.8 ACRES 1,123,635 S.F.
TOTAL BUILDING AREA	132,731 S.F.
ASSESSOR'S PARCEL NUMBER	8381-036-029
FIXED SEATING:	
STADIUM	3000 SEATS
GYMNASIUM	2400 SEATS
EVENT CENTER	875 SEATS
PARKING	415 SPACES
STUDENT POPULATION	900
STAFF POPULATION	75

0 10 50 100

PARKING PLAN EXISTING

KALBAN ARCHITECTS MAY 2018

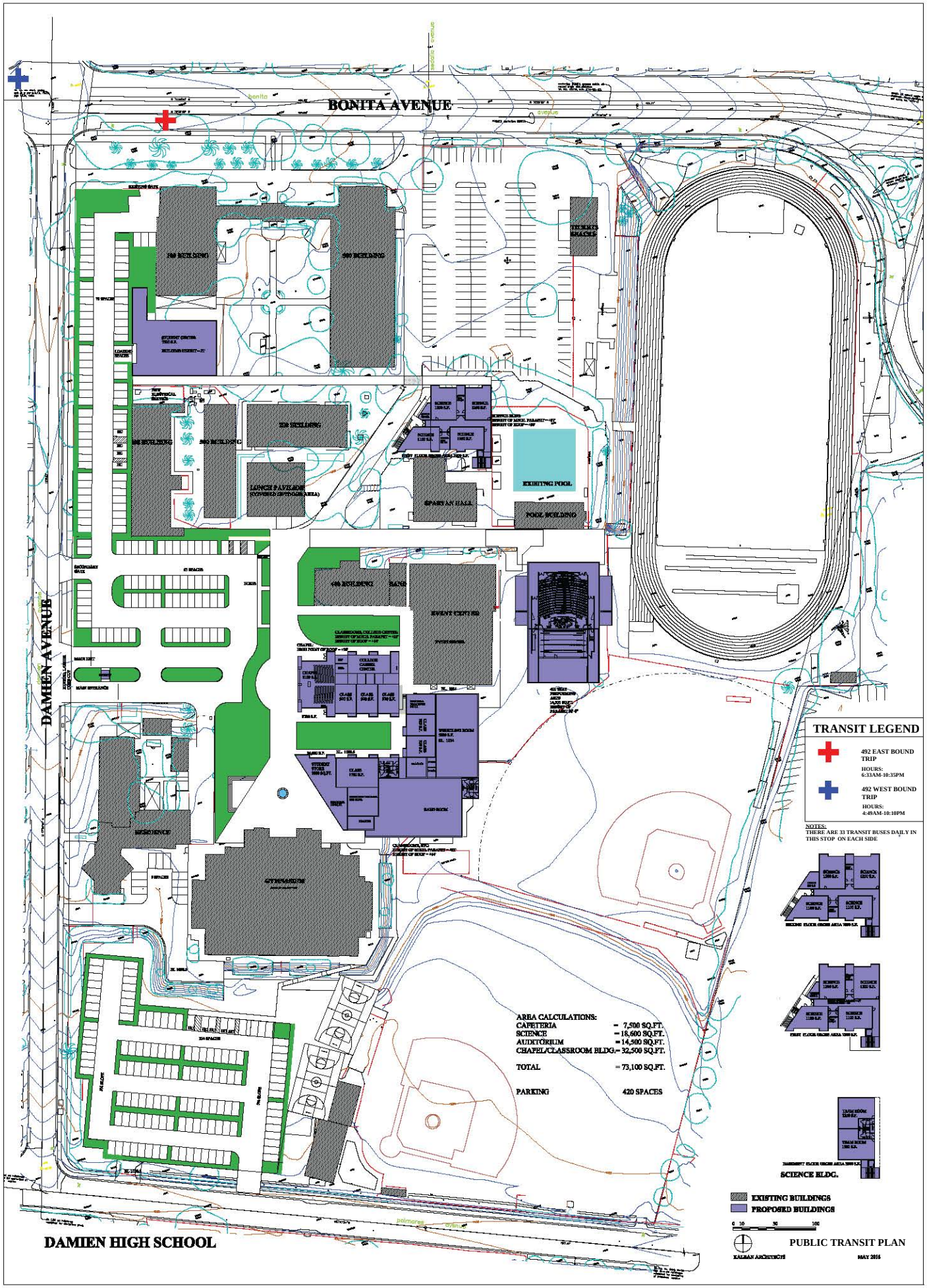

BONITA AVENUE
DAMIEN AVENUE
FACULTY PARKING 76 SPACES
STUDENT PARKING 140 SPACES
STUDENTS & GUESTS PARKING 63 SPACES
STUDENT PARKING 134 SPACES
EXISITNG POOL
EVENT CENTER
GYMNASIUM
RESIDENCE
AREA CALCULATIONS:
CAFETERIA = 7,500 SQ.FT.
SCIENCE = 18,600 SQ.FT.
AUDITORIUM = 14,500 SQ.FT.
CHAPEL/CLASSROOM BLDG. = 32,500 SQ.FT.
TOTAL = 73,100 SQ.FT.
PARKING 420 SPACES
SCIENCE BLDG.
EXISTING BUILDINGS
PROPOSED BUILDINGS
PARKING PLAN PROPOSED
KALBAN ARCHITECTS
MAY 2018
DAMIEN HIGH SCHOOL

PUBLIC TRANSIT

PUBLIC TRANSIT:

The Damien High School campus is located direct to the south of one of La Verne's Secondary Arterial roads known as Bonita Avenue. Along Bonita Avenue is a major bus route with a stop immediately abutting the campus referred to as Foothill Transit – 492 bus line. Foothill Transit provides community-oriented, environmentally friendly bus service throughout Southern California's San Gabriel and Pomona Valleys, including express bus routes directly to Pasadena and Downtown Los Angeles.

Line 492 primarily serves pedestrians traveling along Bonita Avenue and portions of Arrow Highway, which covers El Monte, Arcadia, Baldwin Park, Irwindale, Covina, Azusa, San Dimas, La Verne, Claremont, and Montclair. The 492 line bus schedule is in 20-30 minute windows dependent on the time-of-day and week. A site plan on the following page identifies the location of the east and west bound bus stops.


BONITA AVENUE
DAMIEN AVENUE
DAMIEN HIGH SCHOOL
TRANSIT LEGEND
492 EAST BOUND TRIP
HOURS:
6:33AM-10:35PM
492 WEST BOUND TRIP
HOURS:
4:49AM-10:10PM
NOTES:
THERE ARE 33 TRANSIT BUSES DAILY IN THIS STOP ON EACH SIDE
AREA CALCULATIONS:
CAFETERIA = 7,500 SQ.FT.
SCIENCE = 18,600 SQ.FT.
AUDITORIUM = 14,500 SQ.FT.
CHAPEL/CLASSROOM BLDG.= 32,500 SQ.FT.
TOTAL = 73,100 SQ.FT.
PARKING 420 SPACES
SCIENCE BLDG.
EXISTING BUILDINGS
PROPOSED BUILDINGS
PUBLIC TRANSIT PLAN
KALBAN ARCHITECTS
MAY 2016

PRELIMINARY VIEWS

PRELIMINARY PERSPECTIVE VIEW(S):

The preliminary views provided on the following pages should serve as a first look at the intended vision of the campus throughout the three phases of the Master Plan. Each of these perspective views and overall site plan views provide a workable foundation regarding massing and design for the campus. Specific design concepts will be further developed and final proposals may be dependent on fundraising efforts.

These perspectives should serve as the vision for the Master Plan. Additional details regarding the buildings will be further developed as each building is submitted for design review through the City, and construction drawings are completed, which would provide additional detail.

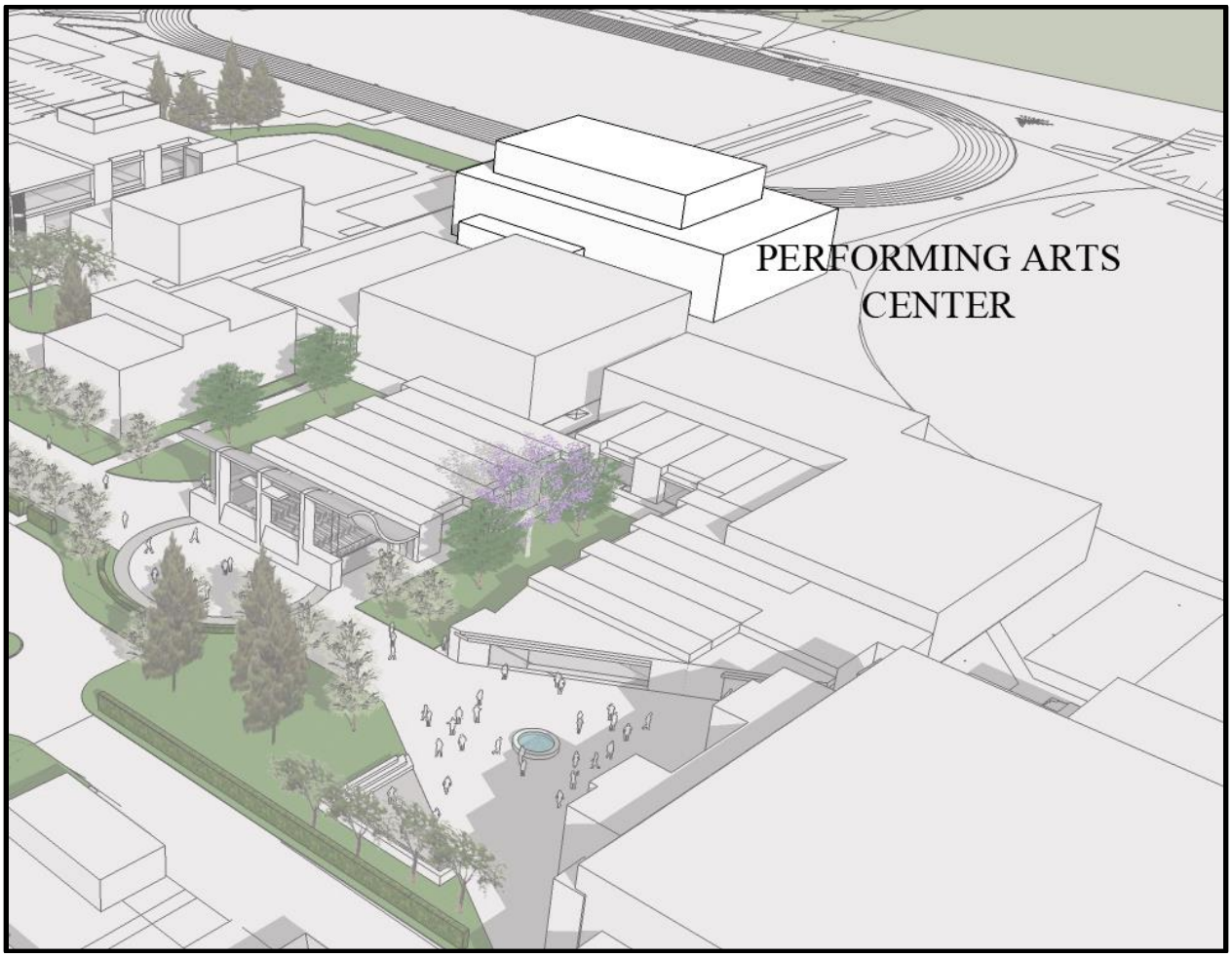
PRELIMINARY PERSPECTIVE VIEWS OF THE CHAPEL BUILDING

PRELIMINARY PERSPECTIVE VIEWS OF THE STUDENT CENTER

PRELIMINARY PERSPECTIVE VIEW OF THE SCIENCE BUILDING

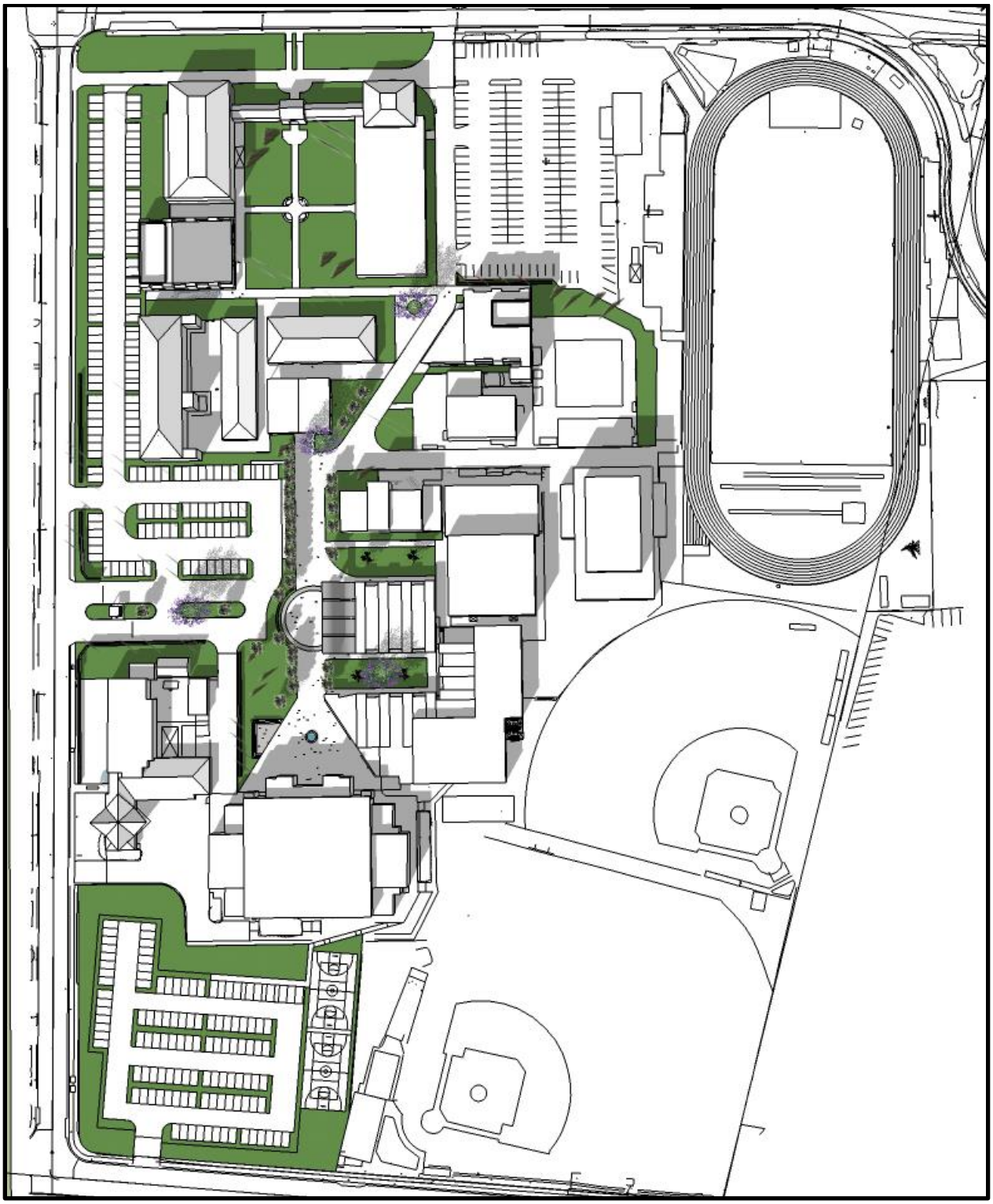
PRELIMINARY PERSPECTIVE VIEWS OF THE PEDESTRIAN PROMANADE

PRELIMINARY PERSPECTIVE VIEW OF THE PERFORMING ARTS CENTER



Note: The Performing Arts Center is a massing study only.

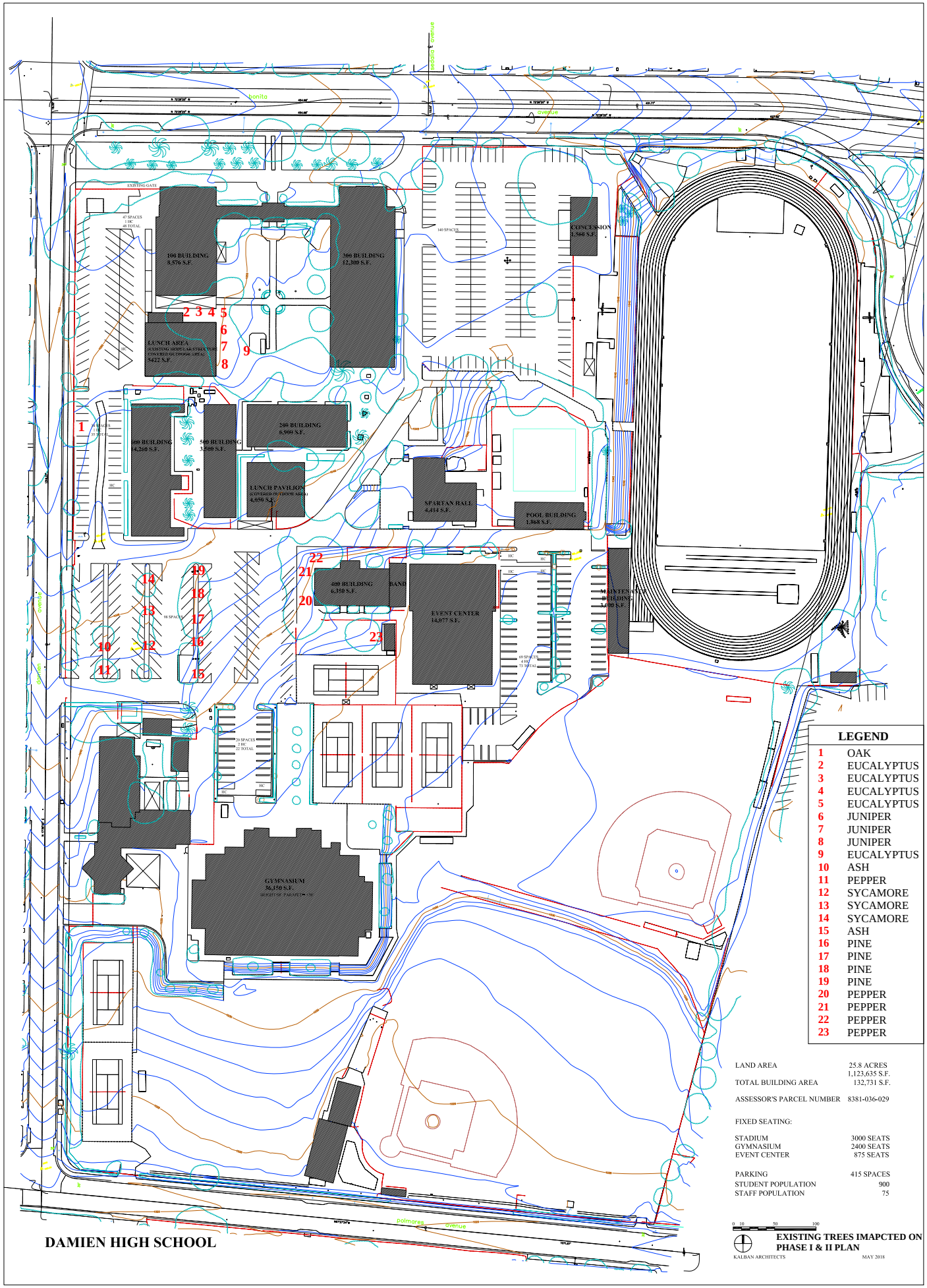
SITE PLAN PRELIMINARY VIEW OF THE MASTER PLAN



ADDENDUM TREE REPORT

DAMIEN HIGH SCHOOL

KALBAN ARCHITECTS



DAMIEN HIGH SCHOOL

LEGEND

1	OAK
2	EUCALYPTUS
3	EUCALYPTUS
4	EUCALYPTUS
5	EUCALYPTUS
6	JUNIPER
7	JUNIPER
8	JUNIPER
9	EUCALYPTUS
10	ASH
11	PEPPER
12	SYCAMORE
13	SYCAMORE
14	SYCAMORE
15	ASH
16	PINE
17	PINE
18	PINE
19	PINE
20	PEPPER
21	PEPPER
22	PEPPER
23	PEPPER

LAND AREA	25.8 ACRES 1,123,635 S.F.
TOTAL BUILDING AREA	132,731 S.F.
ASSESSOR'S PARCEL NUMBER	8381-036-029
FIXED SEATING:	
STADIUM	3000 SEATS
GYMNASIUM	2400 SEATS
EVENT CENTER	875 SEATS
PARKING	415 SPACES
STUDENT POPULATION	900
STAFF POPULATION	75

0 10 50 100

EXISTING TREES IMAPCTED ON PHASE I & II PLAN

KALBAN ARCHITECTS MAY 2018

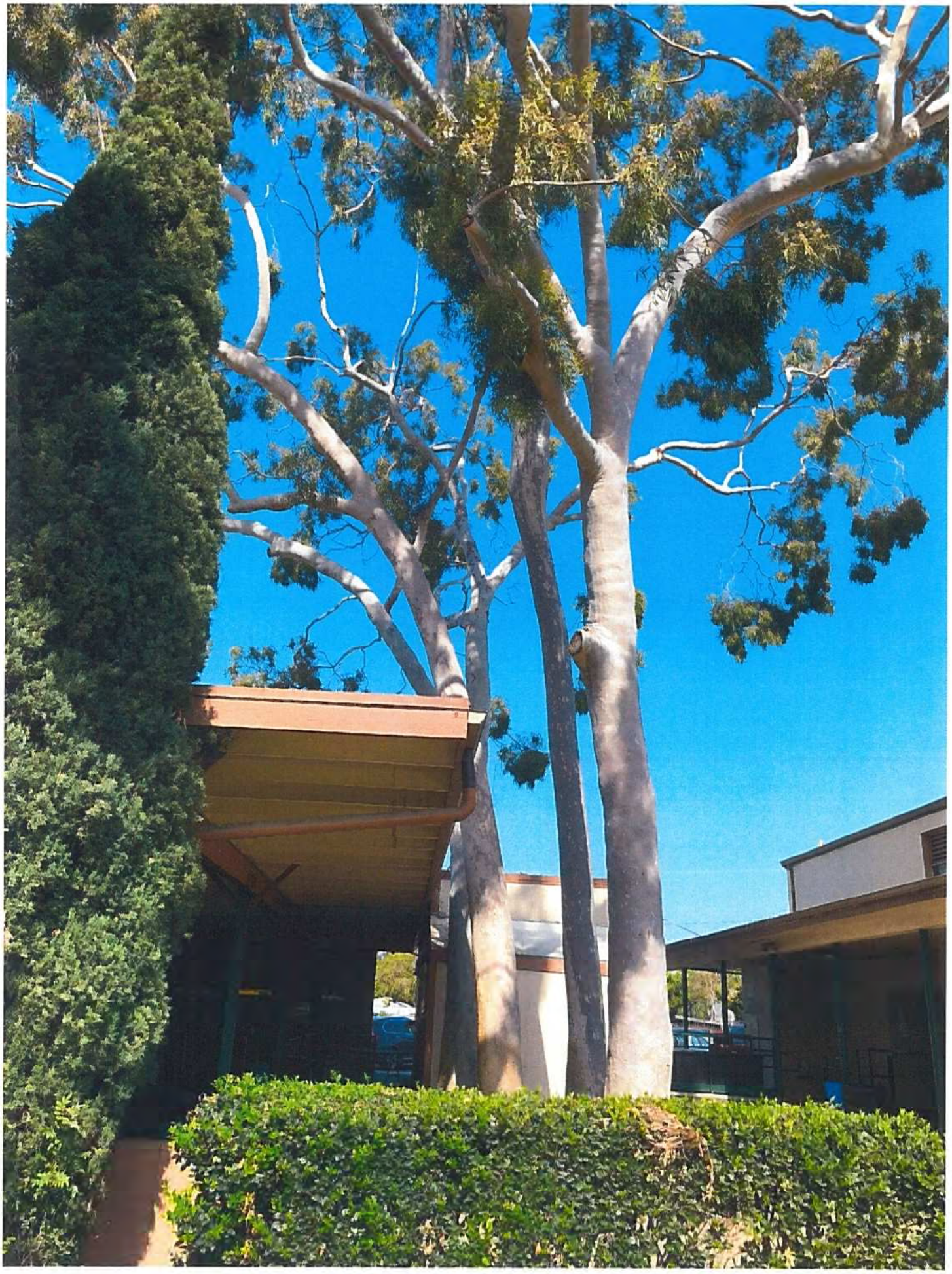
Damien High School Master Plan
Existing trees impacted in Phase I and II

	Type	4' from ground	Impact	Status	Location
1	Oak	7' Diameter	Not Touching	Protected	Staff Parking Lot
2	Eucalyptus	7' Diameter	Removing	Non Protected	Adjacent to lunch area
3	Eucalyptus	6' Diameter	Removing	Non Protected	Adjacent to lunch area
4	Eucalyptus	6' 6" Diameter	Removing	Non Protected	Adjacent to lunch area
5	Eucalyptus	7' Diameter	Removing	Non Protected	Adjacent to to lunch area
6	Juniper	2' Diameter	Removing	Non Protected	Between Quad and lunch area
7	Juniper	2' Diameter	Removing	Non Protected	Between Quad and lunch area
8	Juniper	2' Diameter	Removing	Non Protected	Between Quad and lunch area
9	Eucalyptus	6' 6" Diameter	Removing	Non Protected	In Quad
10	Ash	4' 6" Diameter	Removing	Non Protected	Student Parking Lot
11	Pepper	5' 6" Diameter	Removing	Non Protected	Student Parking Lot
12	Sycamore	3' Diameter	Removing	Non Protected	Student Parking Lot
13	Sycamore	2' Diameter	Removing	Non Protected	Student Parking Lot
14	Sycamore	2' Diameter	Removing	Non Protected	Student Parking Lot
15	Ash	2' Diameter	Removing	Non Protected	Student Parking Lot
16	Pine	4' 8" Diameter	Removing	Non Protected	Student Parking Lot
17	Pine	4' 4" Diameter	Removing	Non Protected	Student Parking Lot
18	Pine	4' 4" Diameter	Removing	Non Protected	Student Parking Lot
19	Pine	4' 4" Diameter	Removing	Non Protected	Student Parking Lot
20	Pepper	7' Diameter	Status Unsure	Non Protected	West of 400 Building
21	Pepper	6' 6" Diameter	Status Unsure	Non Protected	West of 400 Building
22	Pepper	6' Diameter	Status Unsure	Non Protected	West of 400 Building
23	Pepper	5' Diameter	Status Unsure	Non Protected	South of 400 Building

1

OAK

2, 3, 4, 5 EUCALYPTUS

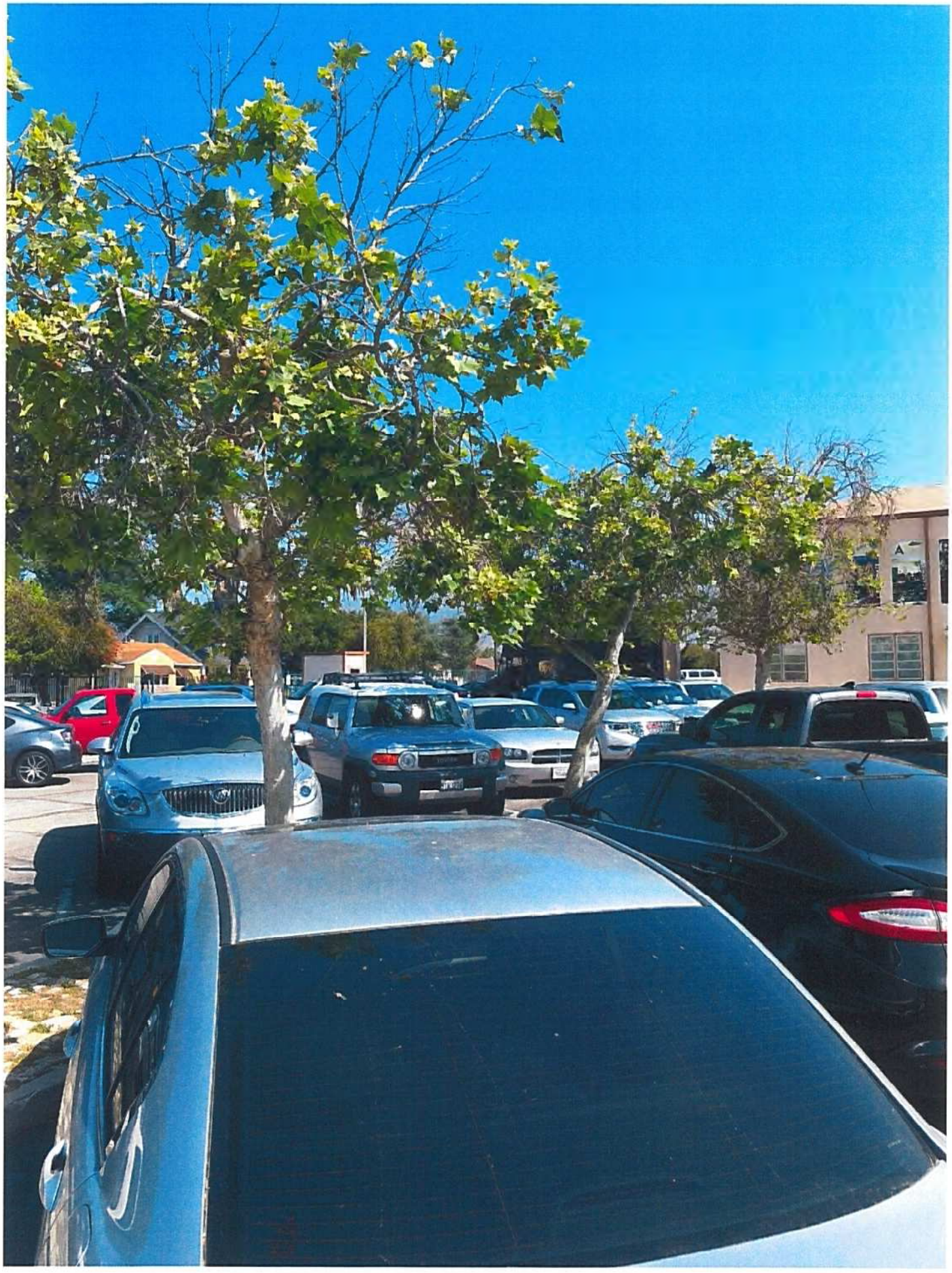


6, 7, 8 JUNIPER

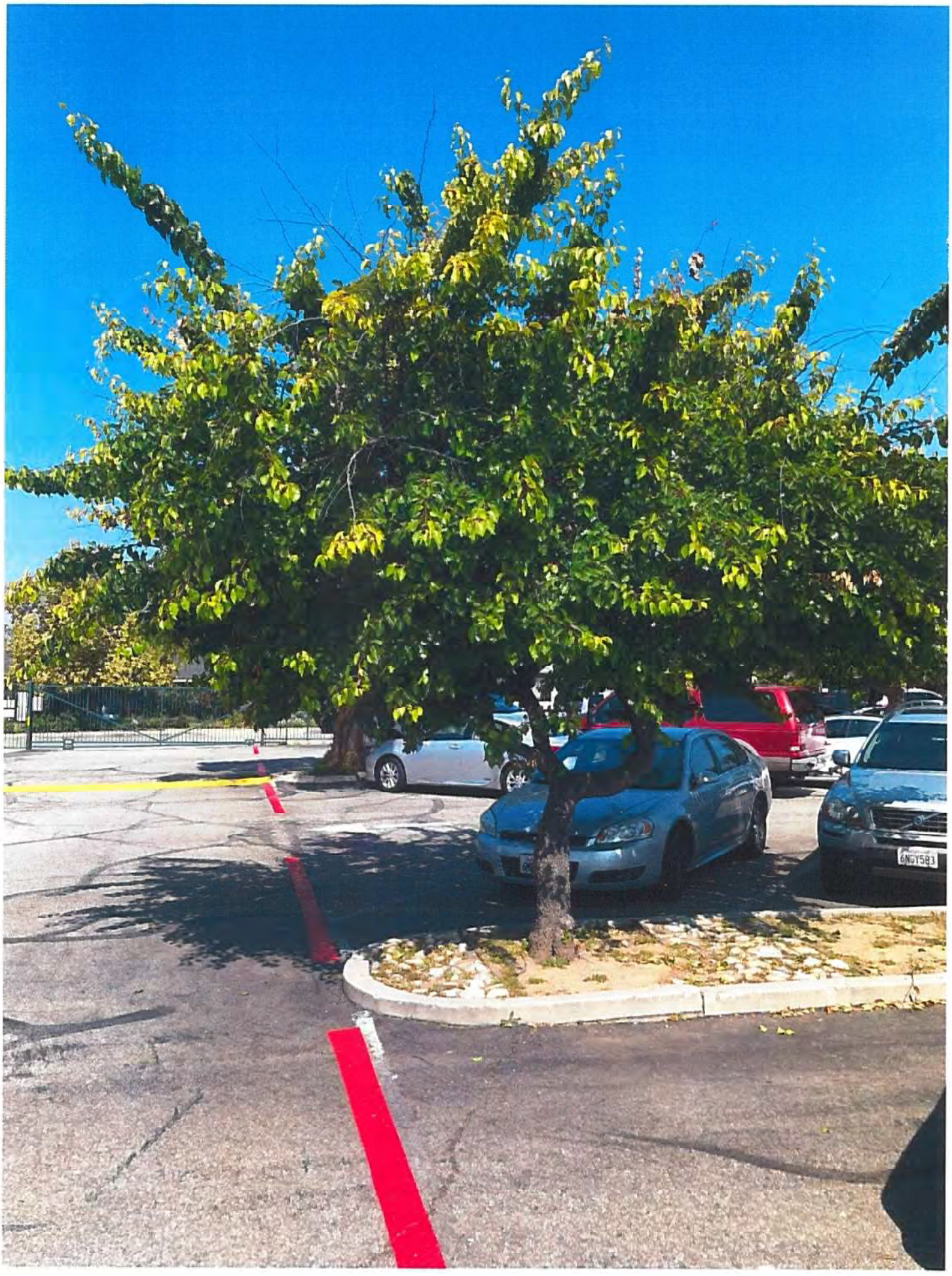
9 EUCALYPTUS

10 ASH

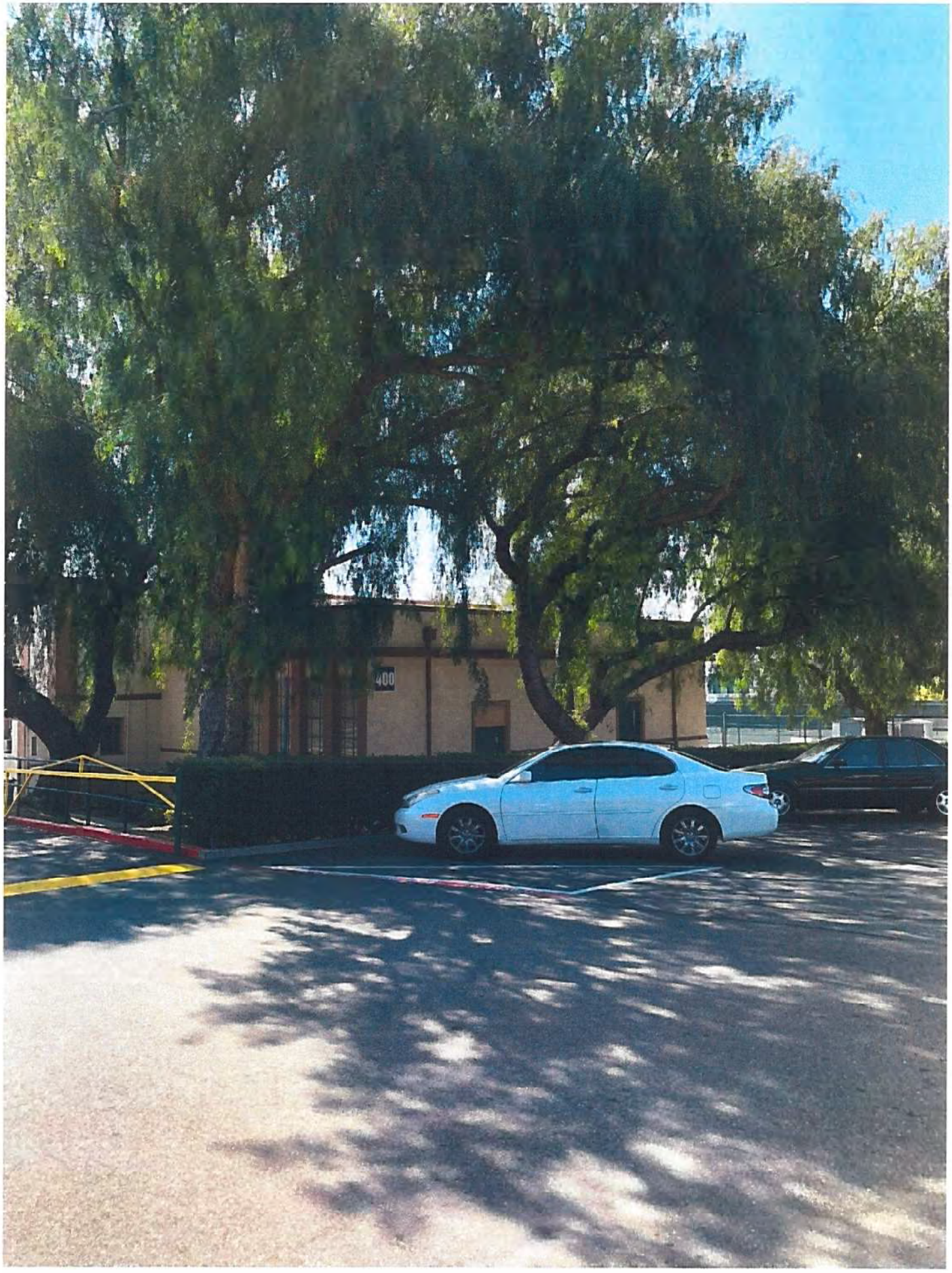
11 PEPPER



15 ASH



16, 17, 18, 19 PINE


400

23 PEPPER

Appendix B

Air Quality and Greenhouse Gas Analysis (On Flash Drive)

AIR QUALITY AND GREENHOUSE GAS ANALYSIS

DAMIEN HIGH SCHOOL MASTER PLAN UPDATE

LA VERNE, CALIFORNIA

LSA

January 2019

AIR QUALITY AND GREENHOUSE GAS ANALYSIS

DAMIEN HIGH SCHOOL MASTER PLAN UPDATE

LA VERNE, CALIFORNIA

Prepared for:

City of La Verne Community Development Department
3660 “D” Street
La Verne, California 91750-3599

Prepared by:

LSA
20 Executive Park, Suite 200
Irvine, California 92614-4731
(949) 553-0666

Project No. LVR1801

LSA

January 2019

EXECUTIVE SUMMARY

LSA has prepared this Air Quality and Greenhouse Gas (GHG) Analysis for the proposed Damien High School Master Plan Update (project) in La Verne, California.

The project proposes demolition of an existing cafeteria facility and the construction of four new buildings to fulfill a current demand for additional academic space and student services. The high school is not projecting an increase in students or faculty throughout the life of the Master Plan Update.

This Air Quality and GHG Analysis provides a discussion of the proposed project, the physical setting of the project area, and the regulatory framework for air quality and GHG. The report provides data on existing air quality and evaluates potential air quality and GHG impacts associated with the proposed project. Emissions with regional effects during project construction, calculated with the California Emissions Estimator Model (CalEEMod; Version 2016.3.2) would not exceed criteria pollutant thresholds established by the South Coast Air Quality Management District (SCAQMD 2015). Compliance with SCAQMD Rules and Regulations during construction would reduce construction-related air quality impacts from fugitive dust emissions and construction equipment emissions. Standard dust suppression measures have been identified for short-term construction. The proposed project would also not exceed the SCAQMD's localized significance thresholds (LSTs) for construction activities.

The change to pollutant emissions from the existing high school operations to the proposed project operations, also calculated with CalEEMod, would not exceed the SCAQMD daily thresholds for any criteria pollutants. Long-term emissions from project operation would not exceed operational LSTs. Historical air quality data show that existing carbon monoxide (CO) levels for the project area and the general vicinity do not exceed either State or federal ambient air quality standards. The proposed project would not result in any significant CO impact at intersections in the project vicinity.

The change to GHG emissions from the project, both construction and operations, were also calculated with CalEEMod. The change to GHG emissions from the proposed project would not exceed the SCAQMD threshold.

The proposed project is consistent with the growth assumptions in La Verne's General Plan, the 2016 Regional Transportation Plan/Sustainable Communities Strategy, and the regional Air Quality Management Plan. Thus, the proposed project would be consistent with regional plans.

This evaluation was prepared in conformance with appropriate standards, using procedures and methodologies in the SCAQMD *CEQA Air Quality Handbook* (SCAQMD 1993) and associated updates. Air quality data posted on the respective websites of the California Air Resources Board and the United States Environmental Protection Agency are included to document the local air quality environment.

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A: CALEEMOD PRINTOUTS

LIST OF ABBREVIATIONS AND ACRONYMS

°F	degrees Fahrenheit
°C	degrees Celsius
µg/m^3	micrograms per cubic meter
AAQS	ambient air quality standards
AB	Assembly Bill
AQMP	Air Quality Management Plan
Basin	South Coast Air Basin
CAA	Clean Air Act (federal)
CAAQS	California ambient air quality standards
CalEEMod	California Emissions Estimator Model
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCAA	California Clean Air Act
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CH_4	methane
City	City of La Verne
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
County	County of Los Angeles
EO	Executive Order
EPA	United States Environmental Protection Agency
ft	foot/feet
GCC	global climate change
GHG	greenhouse gas
GWP	global warming potential
H_2S	hydrogen sulfide
HFCs	hydrofluorocarbons

IPCC	Intergovernmental Panel on Climate Change
lbs/day	pounds per day
LST	localized significance threshold
m	meter(s)
mg/m^3	milligrams per cubic meter
MMT	million metric tons
MMT CO_2e	million metric tons of carbon dioxide equivalent
MPO	Metropolitan Planning Organization
MT	metric tons
MT CO_2e	metric tons of carbon dioxide equivalent
N_2O	nitrous oxide
NAAQS	national ambient air quality standards
NO	nitric oxide
NO_2	nitrogen dioxide
NO_X	nitrogen oxides (a.k.a. oxides of nitrogen)
O_3	ozone
PFCs	perfluorocarbons
PM	particulate matter
PM_{10}	particulate matter less than 10 microns in size
$PM_{2.5}$	particulate matter less than 2.5 microns in size
ppb	parts per billion
ppm	parts per million
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
sf	square foot/feet
SF_6	sulfur hexafluoride
SIP	State Implementation Plan
SO_2	sulfur dioxide
SO_X	sulfur oxides (a.k.a. oxides of sulfur)

SRA	Source Receptor Area
State	State of California
VOCs	volatile organic compounds

PROJECT DESCRIPTION

INTRODUCTION

This Air Quality and Greenhouse Gas (GHG) Analysis has been prepared to evaluate the potential air quality and climate change impacts associated with the proposed Damien High School Master Plan Update (Master Plan Update) in La Verne, California. This report provides a master-plan level air quality and climate change analysis by examining the impacts of the proposed project on nearby sensitive uses, as well as the impacts of the proposed project on the regional air quality and the climate. Guidelines identified by the South Coast Air Quality Management District (SCAQMD) in its *California Environmental Quality Act (CEQA) Air Quality Handbook* (SCAQMD 1993) and associated updates were followed in this Air Quality and GHG Analysis.

PROJECT LOCATION AND DESCRIPTION

Damien High School is located at 2280 Damien Avenue on the corner of Damien and Bonita Avenues in La Verne, California. The campus site (project site) is approximately 1 mile south of State Route 210 and approximately 2 miles north of Interstate 10. The Bracket Field Airport is approximately 0.5 mile southeast of the project site, and Puddingstone Reservoir is approximately 0.5 mile southwest of the project site. Figure 1 illustrates the regional and project location.

The Damien High School campus comprises 25.8 acres with an average annual population of 940 students and approximately 75 faculty/staff. Existing building area totals 132,731 square feet (sf) of academic, administrative, and athletic facilities, with 415 parking spaces on campus. Figure 2 illustrates the existing site plan.

The Master Plan Update is divided into three phases, each of which contains potential development projects, as listed in Table A. The Master Plan Update proposes demolition of the existing 5,972 sf cafeteria facility, construction of four new buildings totaling approximately 73,100 sf of building space, as well as several alterations to select hardscaped areas and parking lots (a net increase of 67,128 sf). The proposed development is based on the need to fulfill a current demand for additional academic space and student services, as the high school is not projecting an increase in students or faculty throughout the life of the Master Plan Update. Figure 3 illustrates the proposed Master Plan Update.

LSA

FIGURE 1

N

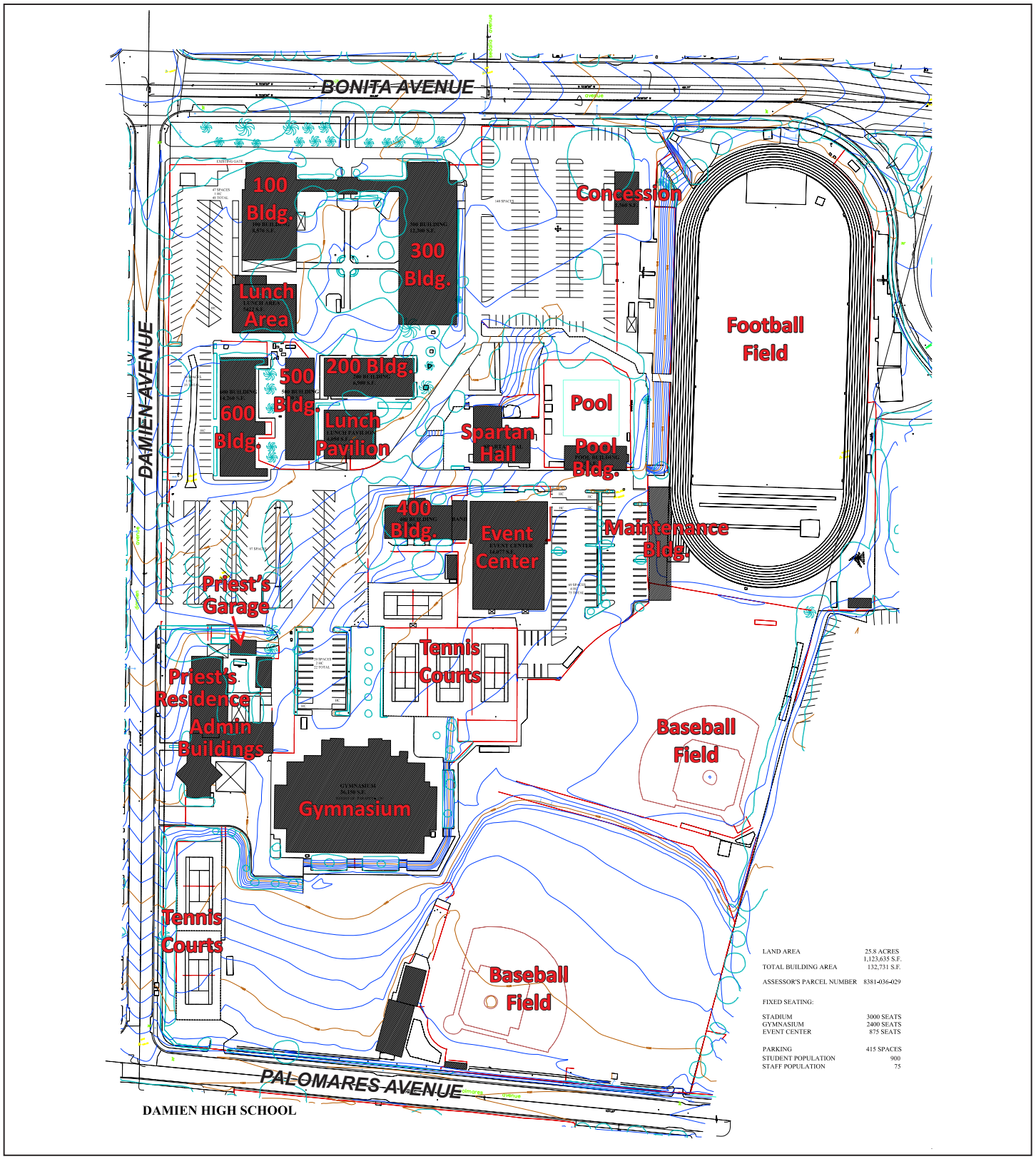
0 1000 2000
FEET

SOURCE: Google Earth, 2016; ESRI Streetmap, 2013.

I:\LVR1801\Reports\Air Quality\fig1_RegLoc.mxd (5/3/2018)

Damien High School Master Plan Update

Regional and Project Location



LSA

FIGURE 2

N

0 100 200
FEET

SOURCE: Kalban Architects, 2017

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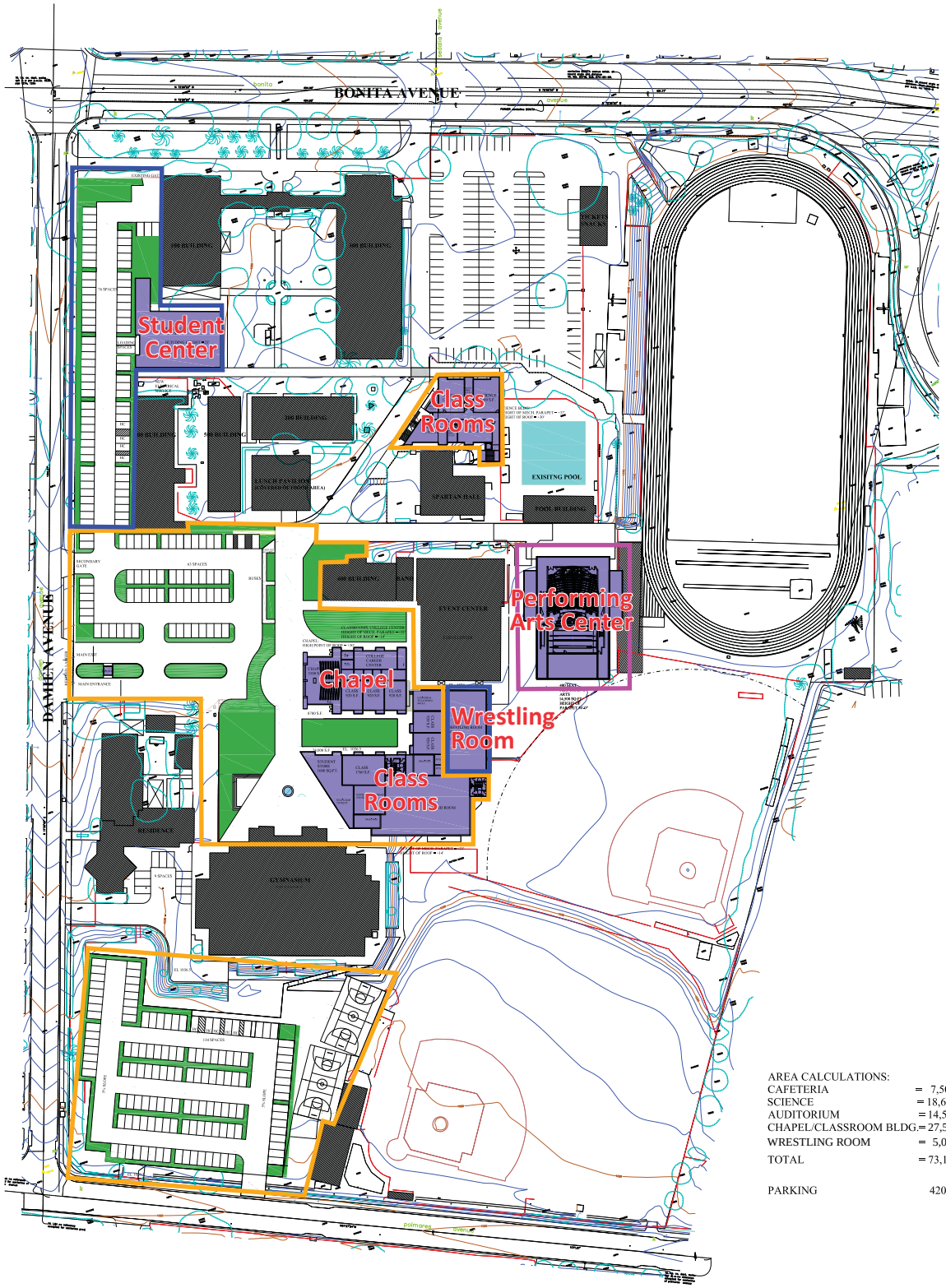
Damien High School Master Plan Update

Existing Damien High School Campus



LSA

LEGEND

- Phase 1
- Phase 2
- Phase 3
- Existing Buildings
- Proposed Buildings

N

0 100 200

FIGURE 3

Damien High School Master Plan Update

Master Plan Full Build Out

SOURCE: Kalban Architects, 2018

Q:\LVR1801\Reports\IS\fig3_ProposedMasterPlan.cdr (1/8/2019)

Table A: Demolition and Construction under Each Phase

Building/Parking Lot	Phase 1	Phase 2	Phase 3
Demolition			
5,972 sf cafeteria facility	X		
6 tennis courts	X	X	
Portion of parking lot north of Gymnasium		X	
73-space parking lot east of the Event Center			X
Construction			
7,500 sf Student Center	X		
Restripe parking lot west of the 100 Building	X		
5,000 sf of Wrestling Room	X		
18,600 sf Classrooms		X	
27,500 sf Chapel/Classroom Building		X	
Grand Promenade		X	
Reconfigure parking lot west of Grand Promenade		X	
134-space parking lot south of Gymnasium		X	
Two sports courts		X	
400-seat/14,500 sf Performing Arts Center			X

Source: Damien High School Master Plan Update (January 2018)
sf = square feet

SENSITIVE LAND USES IN THE PROJECT AREA

The project site is surrounded by residential uses to the north and west across Bonita Avenue and Damien Avenue, respectively. The project site is bordered to the east by the campus of the Joan Macy School/David and Margaret Youth and Family Services Organization, residential uses, and commercial uses. South of the project site are light industrial uses across Palomares Avenue.

PROJECT SETTING

REGIONAL AIR QUALITY

The project site is in La Verne, California, which is part of the South Coast Air Basin (Basin) and is under the jurisdiction of SCAQMD. Both the State and the federal government have established health-based ambient air quality standards (AAQS) for seven air pollutants. As detailed in Table B, these pollutants include ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter less than 10 microns in size (PM_{10}), particulate matter less than 2.5 microns in size ($PM_{2.5}$), and lead. In addition, the State has set standards for sulfates, hydrogen sulfide (H_2S), vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety. Among the pollutants, O_3 and particulate matter ($PM_{2.5}$ and PM_{10}) are considered pollutants with regional effects, while the others have more localized effects.

Table C summarizes the primary health effects and sources of common air pollutants. Because the concentration standards were set at a level that protects public health with an adequate margin of safety (SCAQMD 2017), these health effects would not occur unless the standards are exceeded by a large margin or for a prolonged period of time.

The California Clean Air Act (CCAA) provides SCAQMD and other air districts with the authority to manage transportation activities at indirect sources. Indirect sources of pollution include any facility, building, structure, or installation, or combination thereof, that attracts or generates mobile source activity that results in emissions of any pollutant. In addition, the local air districts also manage area source emissions that are generated when minor sources collectively emit a substantial amount of pollution (e.g., motor vehicles at an intersection, a mall, and on highways). SCAQMD also regulates stationary sources of pollution throughout its jurisdictional area. Direct emissions from motor vehicles are regulated by the California Air Resources Board (CARB) and the United States Environmental Protection Agency (EPA).

Climate/Meteorology

Air quality in the planning area is not only affected by various emission sources (e.g., mobile and industry), but also by atmospheric conditions (e.g., wind speed, wind direction, temperature, and rainfall). The combination of topography, low mixing height, abundant sunshine, and emissions from the second-largest urban area in the United States gives the Basin some of the worst air pollution in the nation.

Table B: Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]		National Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Ozone (O_3)[8]	1-Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	0.070 ppm (137 µg/m^3)		0.070 ppm (137 µg/m^3)		
Respirable Particulate Matter (PM_{10})[9]	24-Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		—		
Fine Particulate Matter ($PM_{2.5}$)[9]	24-Hour	—	—	35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12.0 µg/m^3	15 µg/m^3	
Carbon Monoxide (CO)	1-Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	—	Non-Dispersive Infrared Photometry (NDIR)
	8-Hour	9.0 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)	—	
	8-Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	
Nitrogen Dioxide (NO_2)[10]	1-Hour	0.18 ppm (339 µg/m^3)	Gas Phase Chemiluminescence	100 ppb (188 µg/m^3)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)		53 ppb (100 µg/m^3)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[11]	1-Hour	0.25 ppm (655 µg/m^3)	Ultraviolet Fluorescence	75 ppb (196 µg/m^3)	—	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
	3-Hour	—		—	0.5 ppm (1300 µg/m^3)	
	24-Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (for certain areas)[11]	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas)[11]	—	
Lead[12,13]	30-Day Average	1.5 µg/m^3	Atomic Absorption	—	—	High-Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m^3 (for certain areas)[13]	Same as Primary Standard	
	Rolling 3-Month Average	—		0.15 µg/m^3		
Visibility-Reducing Particles[14]	8-Hour	See footnote 14	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24-Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[12]	24-Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

Source: California Air Resources Board (CARB). Ambient Air Quality Standards (CARB 2016).

The footnotes for this table are provided on the following page.

Footnotes:

[1] California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[2] National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once per year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than 1. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact the EPA for further clarification and current national policies.

[3] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[4] Any equivalent measurement method which can be shown to the satisfaction of CARB to give equivalent results at or near the level of the air quality standard may be used.

[5] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

[6] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[7] Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.

[8] On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

[9] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m^3 to 12.0 µg/m^3. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/^{3}, as was the annual secondary standard of 15 µg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

[10] To attain the 1-hour standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards, the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

[11] On June 2, 2010, the new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.
Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard, the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

[12] The CARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[13] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 µg/m^3 as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standards are approved.

[14] In 1989, the CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

°C = degrees Celsius
µg/m^3 = micrograms per cubic meter
CARB = California Air Resources Board
EPA = United States Environmental Protection Agency
mg/m^3 = milligrams per cubic meter
ppb = parts per billion
ppm = parts per million

Table C: Summary of Health Effects of the Major Criteria Air Pollutants

Pollutant	Health Effects	Examples of Sources
Particulate matter ($PM_{2.5}$ and PM_{10}: less than or equal to 2.5 or 10 microns, respectively)	• Hospitalizations for worsened heart diseases • Emergency room visits for asthma • Premature death	• Cars and trucks (especially diesel) • Fireplaces, woodstoves • Windblown dust from roadways, agriculture, and construction
Ozone (O_3)	• Cough, chest tightness • Difficulty taking a deep breath • Worsened asthma symptoms • Lung inflammation	• Precursor sources:[1] motor vehicles, industrial emissions, and consumer products
Carbon monoxide (CO)	• Chest pain in heart patients[2] • Headaches, nausea[2] • Reduced mental alertness[2] • Death at very high levels[2]	• Any source that burns fuel, such as cars, trucks, construction and farming equipment, and residential heaters and stoves
Nitrogen dioxide (NO_2)	• Increased response to allergens	• See CO sources
Toxic air contaminants	• Cancer • Chronic eye, lung, or skin irritation • Neurological and reproductive disorders	• Cars and trucks (especially diesels) • Industrial sources, such as chrome platers • Neighborhood businesses, such as dry cleaners and service stations • Building materials and products

Source: California Air Resources Board (CARB). Fact Sheet: Air Pollution and Health. Website: http://www.arb.ca.gov/research/health/fs/fs1/fs1.htm (accessed August 2018).

[1] Ozone is not generated directly by these sources. Rather, chemicals emitted by these precursor sources react with sunlight to form ozone in the atmosphere.

[2] Health effects from CO exposures occur at levels considerably higher than ambient.

The annual average temperature varies little throughout the Basin, ranging from the low to middle 60s, measured in degrees Fahrenheit (°F). With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas. The climatological station closest to the site is the San Gabriel Canyon Station (Western Regional Climate Center). The monthly average maximum temperature recorded at this station ranged from 68.5°F in January to 91.7°F in August, with an annual average maximum of 78.2°F. The monthly average minimum temperature recorded at this station ranged from 47.2°F in January to 59.9°F in August, with an annual average minimum of 52.8°F. These levels are representative of the project area.

The majority of annual rainfall in the Basin occurs between November and April. Summer rainfall is minimal and is generally limited to scattered thundershowers in coastal regions and slightly heavier showers in the eastern portion of the Basin and along the coastal side of the mountains. Average monthly rainfall at the San Gabriel Canyon Station varied from 5.06 inches in February to 0.62 inch or less between May and September, with an annual total of 22.28 inches. Patterns in monthly and yearly rainfall totals are unpredictable due to fluctuations in the weather.

The Basin experiences a persistent temperature inversion (increasing temperature with increasing altitude) as a result of the Pacific high. This inversion limits the vertical dispersion of air contaminants, holding them relatively near the ground. As the sun warms the ground and the lower air layer, the temperature of the lower air layer approaches the temperature of the base of the inversion (upper) layer until the inversion layer finally breaks, allowing vertical mixing with the lower layer. This phenomenon is observed in mid- to late afternoon on hot summer days, when the smog appears to clear up suddenly. Winter inversions frequently break by midmorning.

Winds in the project area blow predominantly from the south-southwest, with relatively low velocities. Wind speeds in the project area average about 5 miles per hour (mph). Summer wind speeds average slightly higher than winter wind speeds. Low average wind speeds, together with a persistent temperature inversion, limit the vertical dispersion of air pollutants throughout the Basin. Strong, dry, north or northeasterly winds, known as Santa Ana winds, occur during the fall and winter months, dispersing air contaminants. The Santa Ana conditions tend to last for several days at a time.

The combination of stagnant wind conditions and low inversions produces the greatest pollutant concentrations. On days of no inversion or high wind speeds, ambient air pollutant concentrations are the lowest. During periods of low inversions and low wind speeds, air pollutants generated in urbanized areas are transported predominantly on shore into Riverside and San Bernardino Counties. In the winter, the greatest pollution problems are CO and nitrogen oxides (NO_X) because of extremely low inversions and air stagnation during the night and early morning hours. In the summer, the longer daylight hours and brighter sunshine combine to cause a reaction between hydrocarbons and NO_X to form photochemical smog.

Description of Global Climate Change and its Sources

The climate of a region or city is its typical or average weather. For example, the climate of Southern California is sunny and warm. Earth's climate is the average of all the world's regional climates. Climate change, therefore, is a change in the typical or average weather of a region or city. This could be a change in a region's average annual rainfall, for example, or it could be a change in a city's average temperature for a given month or season. Global climate change (GCC) is a change in Earth's overall climate. This could be a change in Earth's average temperature, for example, or it could be a change in Earth's typical precipitation patterns. The term “global climate change” is often used interchangeably with the term “global warming,” but “global climate change” is preferred to “global warming” because it helps convey that there are other changes in addition to rising temperatures.

Climate change refers to any change in measures of weather (e.g., temperature, precipitation, or wind) lasting for an extended period (decades or longer). Climate change may result from natural factors (e.g., changes in the sun’s intensity), natural processes within the climate system (e.g., changes in ocean circulation), or human activities (e.g., the burning of fossil fuels, land clearing, or agriculture). The primary observed effect of GCC has been a rise in the average global tropospheric[1] temperature of 0.36°F per decade, determined from meteorological measurements worldwide between 1990 and 2016. Climate change modeling shows that further warming may occur, which may induce additional changes in the global climate system. Changes to the global climate system, ecosystems, and the environment could include higher sea levels, drier or wetter weather, changes in ocean salinity, changes in wind patterns, or more energetic aspects of extreme weather including droughts, heavy precipitation, heat waves, extreme cold, and increased intensity of tropical cyclones. Specific effects in the State might include a decline in the Sierra Nevada snowpack, erosion of the State’s coastline, and seawater intrusion in the Sacramento-San Joaquin River Delta.

[1] The troposphere is the zone of the atmosphere characterized by water vapor, weather, winds, and decreasing temperature with increasing altitude.

Each of the last 3 decades has been successively warmer at the Earth's surface than any preceding decade since 1850 (IPCC 2013). The latest projections, based on state-of-the-art climate models, indicate that temperatures in the State are expected to rise 3–10.5 °F by the end of the century (California Climate Change Research 2018). The prevailing scientific opinion on climate change is that "most of the warming observed over the last 60 years is attributable to human activities" (IPCC 2013). Increased amounts of carbon dioxide (CO_2) and other GHGs are the primary causes of the human-induced component of warming. The observed warming effect associated with the presence of GHGs in the atmosphere (from either natural or human sources) is often referred to as "the greenhouse effect."[1]

GHGs are present in the atmosphere naturally, are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced GCC are:[2]

- CO_2
- Methane (CH_4)
- Nitrous oxide (N_2O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulfur hexafluoride (SF_6)

Over the last 200 years, human activities have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere and enhancing the natural greenhouse effect. While GHGs produced by human activities include naturally occurring GHGs (e.g., CO_2, CH_4, and N_2O), some gases (e.g., HFCs, PFCs, and SF_6) are completely new to the atmosphere. Certain other gases (e.g., water vapor) are short-lived in the atmosphere compared to these GHGs, which remain in the atmosphere for significant periods of time and contribute to climate change in the long term. Water vapor is generally excluded from the list of GHGs because its atmospheric concentrations are largely determined by natural processes (e.g., oceanic evaporation). For the purposes of this report, the term "GHGs" will refer collectively to the six gases identified in the bulleted list provided above. The following discussion summarizes the characteristics of these six primary GHGs.

Carbon Dioxide

In the atmosphere, carbon generally exists in its oxidized form, as CO_2. Natural sources of CO_2 include the respiration (breathing) of humans, animals, and plants; volcanic outgassing; decomposition of organic matter; and evaporation from the oceans. Human-caused sources of CO_2 include the combustion of fossil fuels and wood, waste incineration, mineral production, and

[1] The temperature on Earth is regulated by a system commonly known as the "greenhouse effect." Just as the glass in a greenhouse allows heat from sunlight in and reduces the amount of heat that escapes, GHGs like CO_2 in the atmosphere keep the Earth at a relatively even temperature. Without the greenhouse effect, the Earth would be a frozen globe; thus, the *naturally occurring* greenhouse effect is necessary to keep our planet at a comfortable temperature.

[2] The GHGs listed are consistent with the definition in Assembly Bill 32 (Government Code 38505), as discussed later in this report.

deforestation. The Earth maintains a natural carbon balance, and when concentrations of CO_2 are upset, the system gradually returns to its natural state through natural processes. Natural changes to the carbon cycle work slowly, especially compared to the rapid rate at which humans are adding CO_2 to the atmosphere. Natural removal processes (e.g., photosynthesis by land- and ocean-dwelling plant species) cannot keep pace with this extra input of human-made CO_2, and consequently the gas is building up in the atmosphere. The concentration of CO_2 in the atmosphere has risen approximately 30 percent since the late 1800s (California Environmental Protection Agency, 2010).

Methane

CH_4 is produced when organic matter decomposes in environments lacking sufficient oxygen. Natural sources of CH_4 include fires, geologic processes, and bacteria that produce CH_4 in a variety of settings (most notably, wetlands) (EPA 2010). Anthropogenic sources include rice cultivation, livestock, landfills and waste treatment, biomass burning, and fossil fuel combustion (e.g., the burning of coal, oil, and natural gas). As with CO_2, the major removal process of atmospheric CH_4—a chemical breakdown in the atmosphere—cannot keep pace with source emissions, and CH_4 concentrations in the atmosphere are increasing.

Nitrous Oxide

N_2O is produced naturally by a wide variety of biological sources, particularly microbial action in soils and water. Tropical soils and oceans account for the majority of natural source emissions. N_2O is also a product of the reaction that occurs between nitrogen and oxygen during fuel combustion. Both mobile and stationary combustion sources emit N_2O. The quantity of N_2O emitted varies according to the type of fuel, technology, and pollution control device used, as well as maintenance and operating practices. Agricultural soil management and fossil fuel combustion are the primary sources of human-generated N_2O emissions in the State.

Hydrofluorocarbons, Perfluorocarbons, and Sulfur Hexafluoride

HFCs are primarily used as substitutes for O_3-depleting substances regulated under the Montreal Protocol.[1] PFCs and SF_6 are emitted from various industrial processes, including aluminum smelting, semiconductor manufacturing, electric power transmission and distribution, and magnesium casting. There is no aluminum or magnesium production in the State; however, the semiconductor industry, which is active in the State, has led to greater use of PFCs. However, there are no known project-related emissions of these three GHGs; therefore, these substances are not discussed further in this analysis.

These GHGs vary considerably in terms of global warming potential (GWP), which is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. GWP is based on several factors, including the relative effectiveness of a gas in absorbing infrared radiation and the length of time that the gas remains in the atmosphere ("atmospheric lifetime"). The GWP of each gas is measured relative to CO_2, the most abundant GHG. The definition of GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to the ratio of

[1] The Montreal Protocol is an international treaty that was approved on January 1, 1989, and was designated to protect the O_3 layer by phasing out the production of several groups of halogenated hydrocarbons that are believed to be responsible for O_3 depletion and are also potent GHGs.

heat trapped by one unit mass of CO_2 over a specified time period. GHG emissions are typically measured in terms of metric tons[1] of "CO_2 equivalents" (MT CO_2e). For example, N_2O is from 265 to 298 times more potent at contributing to global warming than CO_2. Table D identifies the GWP for each GHG analyzed in this report. The EPA and CARB use GWP values from the 2007 IPCC Fourth Assessment Report (AR4).

Table D: Global Warming Potential for Selected Greenhouse Gases

Pollutant	Lifetime (Years)	Global Warming Potential (100-year)[1]
Carbon Dioxide (CO_2)	~100[2]	1
Methane (CH_4)	12	25–34
Nitrous Oxide (N_2O)	121	265–298

Sources: CARB. California's 2017 Climate Change Scoping Plan (2017) and IPCC 2013 Fifth Assessment Report.

[1] The 100-year global warming potential estimates are from Section 8.7.1.2 of The Global Warming Potential Concept in the IPCC 2013 Fifth Assessment Report (AR5) (Website: https://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5_Chapter08_FINAL.pdf) and Section 2.10.2 of The Direct Global Warming Potentials in the IPCC 2007 Fourth Assessment Report (AR4) (Website: https://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html) (both accessed in September 2018). The EPA and CARB use global warming potential values from the 2007 IPCC Fourth Assessment Report (AR4).

[2] CO_2 has a variable atmospheric lifetime and cannot be readily approximated as a single number.

CARB = California Air Resources Board

IPCC = Intergovernmental Panel on Climate Change

Emissions Sources and Inventories

An emissions inventory that identifies and quantifies the primary human-generated sources and sinks of GHGs is a well-recognized and useful tool for addressing climate change. This section summarizes the latest information on national, State, and local GHG emission inventories. However, because GHGs persist for a long time in the atmosphere (Table D), accumulate over time, and are generally well mixed, their impact on the atmosphere and climate cannot be tied to a specific point of emission.

United States Emissions

In 2016, the United States emitted 6.5 billion MT CO_2e, down from 7.4 billion MT in 2007. Total United States emissions increased by 2.4 percent from 1990 to 2016, and emissions decreased from 2015 to 2016 by 1.9 percent. Of the six major sectors nationwide—the electric power industry, transportation, industry, agriculture, commercial, and residential—the electric power industry and transportation sectors combined account for approximately 70 percent of the GHG emissions; the majority of the electric power industry and all of the transportation emissions are generated from direct fossil fuel combustion. GHG emissions in 2016 were 11.1 percent below 2005 levels (EPA 2018).

[1] A metric ton is equivalent to 1.1 tons.

State of California Emissions

According to CARB emission inventory estimates, the State produced 429.4 million metric tons of CO_2e (MMT CO_2e) emissions in 2016. This is a decrease of 12 MMT CO_2e from 2015. This puts total emissions just below the 2020 target of 431 MMT CO_2e (CARB 2018).

CARB estimates that transportation was the source of 41 percent of the State's GHG emissions in 2016, followed by industrial sources at 23 percent and electricity generation (from in State and out) at 16 percent. The remaining sources of GHG emissions were residential at 7 percent, commercial activities at 5 percent, agriculture at 8 percent, and other sources at <1 percent (CARB 2018).

Air Pollution Constituents and Attainment Status

CARB coordinates and oversees both State and federal air pollution control programs in the State. CARB oversees activities of local air quality management agencies and maintains air quality monitoring stations throughout the State in conjunction with the EPA and local air districts. CARB has divided the State into 15 air basins based on meteorological and topographical factors of air pollution. CARB and the EPA use data collected at these stations to classify air basins as attainment, nonattainment, nonattainment-transitional, or unclassified, based on air quality data for the most recent 3 calendar years compared with the AAQS.

Attainment areas may be:

- Attainment/unclassified ("unclassifiable" in some lists), which have never violated the air quality standard of interest or do not have enough monitoring data to establish attainment or nonattainment status;

- Attainment-maintenance (national ambient air quality standards [NAAQS] only), which violated a NAAQS that is currently in use (was nonattainment) in or after 1990, but now attains the standard and is officially re-designated as attainment by the EPA with a maintenance State Implementation Plan (SIP); or

- Attainment (usually only for California ambient air quality standards [CAAQS], but sometimes for NAAQS), which have adequate monitoring data to show attainment, have never been nonattainment, or, for NAAQS, have completed the official maintenance period.

Nonattainment areas are imposed with additional restrictions as required by the EPA. The air quality data are also used to monitor progress in attaining air quality standards. Table E lists the attainment status for the criteria pollutants in the Basin.

Ozone

O_3 is formed by photochemical reactions between NO_X and volatile organic compounds (VOCs) rather than being directly emitted. O_3 is a pungent, colorless gas that is a major component of Southern California smog. Elevated O_3 concentrations result in reduced lung function, particularly during vigorous physical activity. This health problem is particularly acute in sensitive receptors (e.g., the sick, the elderly, and young children). O_3 levels peak during summer and early fall. The entire Basin is designated as a nonattainment area for the State 1-hour and 8-hour O_3 standards. The EPA has officially designated the status for most of the Basin regarding the 8-hour O_3 standard as

"extreme nonattainment," which means the Basin has until 2024 to attain the federal 8-hour O_3 standard.

Table E: Attainment Status of Criteria Pollutants in the South Coast Air Basin

Pollutant	State	Federal
O_3 1-hour	Nonattainment	N/A
O_3 8-hour	Nonattainment	Extreme Nonattainment
PM_{10}	Nonattainment	Attainment/Maintenance
$PM_{2.5}$	Nonattainment	Nonattainment
CO	Attainment	Attainment/Maintenance
NO_2	Attainment	Unclassified/Attainment (1-hour) Attainment/Maintenance (Annual)
SO_2	Attainment	Unclassified/Attainment
Lead	Nonattainment[1]	Nonattainment[1]
All Others	Attainment/Unclassified	Attainment/Unclassified

Source 1: South Coast Air Quality Management District. National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) Attainment Status for South Coast Air Basin Website: www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/naaqs-caaqs-feb2016.pdf (accessed in September 2018).
Source 2: United States Environmental Protection Agency. Nonattainment Areas for Criteria Pollutants (Green Book). Website: https://www.epa.gov/green-book (accessed in September 2018).
[1] The Los Angeles County portion of the Basin is in Nonattainment for Lead.
CO = carbon monoxide
N/A = not applicable
NO_2 = nitrogen dioxide
O_3 = ozone
PM_{10} = particulate matter less than 10 microns in diameter
$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter
ppm = parts per million
SO_2 = sulfur dioxide

Carbon Monoxide

CO is formed by the incomplete combustion of fossil fuels, almost entirely from automobiles. CO is a colorless, odorless gas that can cause dizziness, fatigue, and impairments to central nervous system functions. The entire Basin is in attainment for the State standards for CO. The Basin is designated as an "attainment/maintenance" area under the federal CO standards.

Nitrogen Oxides

NO_2, a reddish brown gas, and nitric oxide (NO), a colorless, odorless gas, are formed from fuel combustion under high temperature or pressure. These compounds are referred to as nitrogen oxides, or NO_X. NO_X is a primary component of the photochemical smog reaction. NO_X also contributes to other pollution problems, including a high concentration of fine particulate matter ($PM_{2.5}$), poor visibility, and acid deposition (i.e., acid rain). NO_x decreases lung function and may reduce resistance to infection. The entire Basin is designated as attainment for the State NO_2 standard and as an "attainment/maintenance" area under the federal NO_2 standard.

Sulfur Dioxide

SO_2 is a colorless, irritating gas formed primarily from incomplete combustion of fuels containing sulfur. Industrial facilities also contribute to gaseous SO_2 levels. SO_2 irritates the respiratory tract, can injure lung tissue when combined with fine particulate matter, and reduces visibility and the level of sunlight. The entire Basin is in attainment with both federal and State SO_2 standards.

Lead

Lead is found in old paints and coatings, plumbing, and a variety of other materials. Once in the bloodstream, lead can cause damage to the brain, nervous system, and other body systems. Children are highly susceptible to the effects of lead. The Los Angeles County portion of the Basin is in nonattainment for both federal and State lead standards.

Particulate Matter

Particulate matter is the term used for a mixture of solid particles and liquid droplets found in the air. Coarse particles (PM_{10}) derive from a variety of sources, including windblown dust and grinding operations. Fuel combustion and resultant exhaust from power plants and diesel buses and trucks are primarily responsible for $PM_{2.5}$ levels. Fine particles can also be formed in the atmosphere through chemical reactions. PM_{10} can accumulate in the respiratory system and aggravate health problems (e.g., asthma). The EPA's scientific review concluded that $PM_{2.5}$, which penetrates deeply into the lungs, is more likely than PM_{10} to contribute to the health effects listed in a number of recently published community epidemiological studies at concentrations that extend well below those allowed by the current PM_{10} standards. These health effects include premature death and increased hospital admissions and emergency room visits (primarily among the elderly and individuals with cardiopulmonary disease); increased respiratory symptoms and disease (children and individuals with cardiopulmonary disease [e.g., asthma]); decreased lung function (particularly in children and individuals with asthma); and alterations in lung tissue and structure and in respiratory tract defense mechanisms. The Basin is designated nonattainment for the federal and State $PM_{2.5}$ standards and State PM_{10} standard, and attainment/maintenance for the federal PM_{10} standard.

Volatile Organic Compounds

VOCs (also known as reactive organic gases and reactive organic compounds) are formed from the combustion of fuels and the evaporation of organic solvents. VOCs are not defined as criteria pollutants, however, because VOCs accumulate in the atmosphere more quickly during the winter, when sunlight is limited and photochemical reactions are slower, they are a prime component of the photochemical smog reaction. There are no attainment designations for VOCs.

Sulfates

Sulfates occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to SO_2 during the combustion process and subsequently is converted to sulfate compounds in the atmosphere. The conversion of SO_2 to sulfates takes place comparatively rapidly and completely in urban areas of the State due to regional meteorological features. The entire Basin is in attainment for the State standard for sulfates.

Hydrogen Sulfide

H_2S is a colorless gas with the odor of rotten eggs. H_2S forms during bacterial decomposition of sulfur-containing organic substances. In addition, H_2S can be present in sewer gas and some natural gas and can be emitted as the result of geothermal energy exploitation. In 1984, a CARB committee

concluded that the ambient standard for H_2S is adequate to protect public health and to significantly reduce odor annoyance. The entire Basin is unclassified for the State standard for H_2S.

Visibility-Reducing Particles

Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size, and chemical composition, and can be made up of many different materials (e.g., metals, soot, soil, dust, and salt). The Statewide standard is intended to limit the frequency and severity of visibility impairment due to regional haze. The entire Basin is unclassified for the State standard for visibility-reducing particles.

LOCAL AIR QUALITY

SCAQMD, together with CARB, maintains ambient air quality monitoring stations in the Basin. The air quality monitoring station closest to the project site is the Pomona Station, monitoring CO, O_3, and NO_2. The closest station monitoring PM_{10} is the Glendora Monitoring Station and the closest station monitoring $PM_{2.5}$ is the Azuza Monitoring Station. The Pomona Station is 3.4 miles to the southeast of the project site, the Glendora Station is 3.5 miles northwest of the project site, and the Azuza Station is 8 miles to the northwest of the project site. The air quality trends from these three stations are used to represent the ambient air quality in the project area. Table F lists the ambient air quality data monitored at these stations in the past 3 years.

APPLICABLE REGULATIONS AND STANDARDS

Federal Agencies, Regulations, and Standards

Pursuant to the federal Clean Air Act (CAA) of 1970, the EPA established the NAAQS. The NAAQS were established for six major pollutants, termed “criteria” pollutants. Criteria pollutants are defined as those pollutants for which the federal and State governments have established AAQS, or criteria, for outdoor concentrations in order to protect public health.

The EPA has designated the Southern California Association of Governments (SCAG) as the Metropolitan Planning Organization (MPO) responsible for ensuring compliance with the requirements of the CAA for the Basin.

The United States has historically had a voluntary approach to reducing GHG emissions. However, on April 2, 2007, the United States Supreme Court ruled that the EPA has the authority to regulate CO_2 emissions under the CAA. On December 7, 2009, the EPA Administrator signed a final action under the CAA, finding that six GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) constitute a threat to public health and welfare, and that the combined emissions from motor vehicles cause and contribute to GCC.

State Agencies, Regulations, and Standards

In 1967, the State Legislature passed the Mulford-Carrell Act, which combined two Department of Health bureaus (i.e., the Bureau of Air Sanitation and the Motor Vehicle Pollution Control Board), to establish CARB. Since its formation, CARB has worked with the public, the business sector, and local governments to find solutions to the State’s air pollution problems.

Table F: Ambient Air Quality Monitored in the Project Vicinity

Pollutant	Standard	2015	2016	2017
Carbon Monoxide (CO) –Pomona Monitoring Station				
Maximum 1-hour concentration (ppm)		1.8	1.7	2.0
Number of days exceeded:	State: > 20 ppm	0	0	0
	Federal: > 35 ppm	0	0	0
Maximum 8-hour concentration (ppm)		1.6	1.3	1.6
Number of days exceeded:	State: ≥ 9.0 ppm	0	0	0
	Federal: ≥ 9 ppm	0	0	0
Ozone (O_3) – Pomona Monitoring Station				
Maximum 1-hour concentration (ppm)		0.136	0.127	0.147
Number of days exceeded:	State: > 0.09 ppm	30	20	18
Maximum 8-hour concentration (ppm)		0.098	0.092	0.114
Number of days exceeded:	State: > 0.07 ppm	53	26	35
	Federal: > 0.07 ppm	53	26	35
Coarse Particulates (PM_{10}) – Glendora Monitoring Station				
Maximum 24-hour concentration (µg/m^3)		100	74	140
Number of days exceeded:	State: > 50 µg/m^3	N/A	N/A	N/A
	Federal: > 150 µg/m^3	0	0	0
Annual arithmetic average concentration (µg/m^3)		29.0	29.9	32.3
Exceeded for the year:	State: > 20 µg/m^3	Yes	Yes	Yes
Fine Particulates ($PM_{2.5}$) – Azuza Monitoring Station				
Maximum 24-hour concentration (µg/m^3)		70.3	32.1	24.9
Number of days exceeded:	Federal: > 35 µg/m^3	2	0	0
Annual arithmetic average concentration (µg/m^3)		9.9	10.1	10.5
Exceeded for the year:	State: > 12 µg/m^3	No	No	No
	Federal: > 12 µg/m^3	No	No	No
Nitrogen Dioxide (NO_2) – Pomona Monitoring Station				
Maximum 1-hour concentration (ppb)		72.3	69.3	81.2
Number of days exceeded:	State: > 180 ppb	0	0	0
	Federal: > 100 ppb	0	0	0
Annual arithmetic average concentration (ppb)		21.2	20.1	20.5
Exceeded for the year:	State: > 30 ppb	No	No	No
	Federal: > 53 ppb	No	No	No

Source: EPA. Air Data Air Quality Monitors. Website: http://www.epa.gov/airdata/ad_maps.html (accessed in September 2018).
µg/m^3 = micrograms per cubic meter
EPA = United States Environmental Protection Agency
N/A = Data not available
ppm = parts per million
ppb = parts per billion

The California Air Pollution Control Officers Association (CAPCOA) is a nonprofit association of the air pollution control officers from all 35 local air quality agencies throughout California. CAPCOA was formed in 1976 to promote clean air and to provide a forum for sharing knowledge, experience, and information among the air quality regulatory agencies around the State. CAPCOA meets regularly with federal and State air quality officials to develop statewide rules and to assure consistent application of rules and regulations. CAPCOA works with specialized task forces (including regulated industry) by participating actively in the legislative process, and continuing to coordinate local efforts with those of the State and federal air agencies. The goal is to protect public health while maintaining economic vitality.

California adopted the CCAA in 1988. CARB administers the CAAQS for the 10 air pollutants designated in the CCAA. These 10 State air pollutants are the six criteria pollutants designated by the federal CAA as well as four others: visibility-reducing particulates, H_2S, sulfates, and vinyl chloride.

California Climate Action Milestones

In 1988, Assembly Bill (AB) 4420 directed the California Energy Commission (CEC) to report on "how global warming trends may affect the State's energy supply and demand, economy, environment, agriculture, and water supplies" and offer "recommendations for avoiding, reducing and addressing the impacts." This marked the first statutory direction to a State agency to address climate change.

The California Climate Action Registry was created to encourage voluntary reporting and early reductions of GHG emissions with the adoption of Senate Bill (SB) 1771 in 2000. The CEC was directed to assist by developing metrics and identifying and qualifying third-party organizations to provide technical assistance and advice to GHG emission reporters. The next year, SB 527 amended SB 1771 to emphasize third-party verification.

SB 1771 also contained several additional requirements for the CEC, including (1) updating the State's GHG inventory from an existing 1998 report and continuing to update it every 5 years; (2) acquiring, developing, and distributing information on GCC to agencies and businesses; (3) establishing a State interagency task force to ensure policy coordination; and (4) establishing a climate change advisory committee to make recommendations on the most equitable and efficient ways to implement GCC requirements. In 2006, AB 1803 transferred preparation of the inventory from the CEC to CARB. CARB updates the inventory annually.

AB 1493, authored by Assemblymember Fran Pavley in 2002, directed CARB to adopt regulations to achieve the maximum feasible and cost-effective reduction of GHG emissions from motor vehicles. CARB approved the so-called "Pavley" regulations, or Clean Car regulations, in 2004. On September 24, 2009, CARB adopted amendments to AB 1493 that reduced GHG emissions in new passenger vehicles from 2009 through 2016. AB 1493 also directed the State's Climate Action Registry to adopt protocols for reporting reductions in GHG emissions from mobile sources prior to the operative date of the regulations.

Executive Order (EO) S-3-05 (June 2005) established GHG targets for the State (e.g., returning to year 2000 emission levels by 2010, to 1990 levels by 2020, and to 80 percent below 1990 levels by 2050). EO S-3-05 directed the Secretary of the California Environmental Protection Agency to coordinate efforts to meet the targets with the heads of other State agencies. This group became the Climate Action Team.

In 2006, the State Legislature passed the California Global Warming Solutions Act of 2006 (AB 32), which created a comprehensive, multiyear program to reduce GHG emissions in California. AB 32 required the CARB to develop a Scoping Plan that describes the approach California will take to reduce GHGs to achieve the goal of reducing emissions to 1990 levels by 2020. The Scoping Plan was first approved by the CARB in 2008, updated on May 22, 2014, and again on December 14, 2017. In 2016, the State Legislature passed SB 32, which codifies a 2030 GHG emissions reduction target of 40 percent below 1990 levels. With SB 32, the State Legislature passed companion legislation

AB 197, which provides additional direction for developing the Scoping Plan. The 2017 Scoping Plan update incorporates the 2030 target set by EO B-30-15 and codified by SB 32.

The governors of California, Arizona, New Mexico, Oregon, and Washington entered into a Memorandum of Understanding in February 2007 establishing the Western Climate Initiative. The governors agreed to set a regional goal for emissions reductions consistent with state-by-state goals; develop a design for a regional market-based multisector mechanism to achieve the goals; and participate in a multistate GHG registry. The initiative has since grown to include Montana, Utah, and the Canadian provinces of British Columbia, Manitoba, Ontario, and Québec.

California is implementing the world's first Low Carbon Fuel Standard for transportation fuels, pursuant to both EO S-01-07 (signed January 2007) and AB 32. The standard requires a reduction of at least 10 percent in the CO intensity of the State's transportation fuels by 2020. This reduction is expected to reduce GHG emissions in 2020 by 17.6 MMT CO_2e. Also in 2007, AB 118 created the Alternative and Renewable Fuel and Vehicle Technology Program. The CEC and the CARB administer the program. This act provides funding for alternative fuel and vehicle technology research, development, and deployment to attain the State's climate change goals, achieve the State's petroleum reduction objectives and clean air and GHG emission reduction standards, develop public-private partnerships, and ensure a secure and reliable fuel supply.

In addition to vehicle emissions regulations and the Low Carbon Fuel Standard, the third effort to reduce GHG emissions from transportation is the reduction in the demand for personal vehicle travel (i.e., vehicle miles traveled). This measure was addressed in September 2008 through the Sustainable Communities and Climate Protection Act of 2008, or SB 375. The enactment of SB 375 initiated an important new regional land use planning process to mitigate GHG emissions by integrating and aligning planning for housing, land use, and transportation for California's 18 MPOs. The bill directed CARB to set regional GHG emission reduction targets for most areas of the State. SB 375 also contained important elements related to federally mandated regional transportation plans and the alignment of State transportation and housing planning processes.

Also codified in 2008, SB 97 required the Governor's Office of Planning and Research to develop GHG emissions criteria for use in determining project impacts under CEQA. These criteria were developed in 2009 and went into effect in 2010.

EO S-13-08 launched a major initiative for improving the State's adaptation to climate impacts from sea level rise, increased temperatures, shifting precipitation, and extreme weather events. EO S-13-08 ordered a California Sea Level Rise Assessment Report request from the National Academy of Sciences. The order also ordered the development of a Climate Adaptation Strategy. The strategy, published in December 2009, assesses the State's vulnerability to climate change impacts, and outlines possible solutions that can be implemented within and across State agencies to promote resiliency. The Strategy focused on seven areas: public health, biodiversity and habitat, ocean and coastal resources, water management, agriculture, forestry, and transportation and energy infrastructure.

The initiatives, EOs, and statutes outlined above comprise the major milestones in California's efforts to address climate change through coordinated action on climate research, GHG mitigation, and climate change adaptation. Numerous other related efforts have been undertaken by State

agencies and departments to address specific questions and programmatic needs. The Climate Action Team coordinates these efforts and others, which constitute the California Climate Adaptation Strategy (State of California 2018).

Regional Air Quality Planning Framework

The 1976 Lewis Air Quality Management Act established SCAQMD and other air districts throughout the State. The federal CAA Amendments of 1977 required that each state adopt an implementation plan outlining pollution control measures to attain the federal standards in nonattainment areas of the State.

CARB is responsible for incorporating air quality management plans for local air basins into a SIP for EPA approval. Significant authority for air quality control within them has been given to local air districts that regulate stationary-source emissions and develop local nonattainment plans.

Regional Air Quality Management Plan

SCAQMD and SCAG are responsible for formulating and implementing the Air Quality Management Plan (AQMP) for the Basin. The main purpose of an AQMP is to bring the area into compliance with federal and State air quality standards. SCAQMD prepares a new AQMP every 3 years, updating the previous plan and 20-year horizon.

The latest plan is the 2016 AQMP, which incorporates the latest scientific and technological information and planning assumptions, including the 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) and updated emission inventory methodologies for various source categories. The 2016 AQMP includes the integrated strategies and measures needed to meet the NAAQS, implementation of new technology measures, and demonstrations of attainment of the 1-hour and 8-hour ozone NAAQS as well as the latest 24-hour and annual $PM_{2.5}$ standards. Key elements of the 2016 AQMP include:

- Calculation and credit for cobenefits from other planning efforts (e.g., climate, energy, and transportation)
- A strategy with fair-share emission reductions at the federal, State, and local levels
- Investment in strategies and technologies meeting multiple air quality objectives
- Identification of new partnerships and significant funding for incentives to accelerate deployment of zero and near-zero technologies
- Enhanced socioeconomic assessment, including an expanded environmental justice analysis
- Attainment of the 24-hour $PM_{2.5}$ standard in 2019 with no additional measures
- Attainment of the annual $PM_{2.5}$ standard by 2025 with implementation of a portion of the ozone strategy
- Attainment of the 1-hour ozone standard by 2022 with no reliance on “black box” future technology (CAA Section 182(e)(5) measures)

THRESHOLDS OF SIGNIFICANCE

Certain air districts (e.g., SCAQMD) have created guidelines and requirements to conduct air quality analysis. SCAQMD's current guidelines, the *CEQA Air Quality Handbook* (SCAQMD 1993) with associated updates, were followed in this assessment of air quality and GCC impacts for the proposed project.

Based on the Guidelines for the Implementation of CEQA, Appendix G, Public Resources Code Sections 15000–15387, a project would normally be considered to have a significant effect on air quality if the project would violate any CAAQS, contribute substantially to an existing air quality violation, expose sensitive receptors to substantial pollutant concentrations, or conflict with adopted environmental plans and goals of the community in which it is located.

POLLUTANTS WITH REGIONAL EFFECTS

SCAQMD has established daily emissions thresholds for construction and operation of a proposed project in the Basin. The emissions thresholds were established based on the attainment status of the Basin with regard to air quality standards for specific criteria pollutants. Because the concentration standards were set at a level that protects public health with an adequate margin of safety (SCAQMD 2017), these emissions thresholds are regarded as conservative and would overstate an individual project's contribution to health risks.

Regional Emissions Thresholds

Table G lists the CEQA significance thresholds for construction and operational emissions established for the Basin.

Table G: Regional Thresholds for Construction and Operational Emissions

	Pollutant Emissions Threshold (lbs/day)					
Emissions Source	**VOC**	**NO_x**	**CO**	**PM_{10}**	**$PM_{2.5}$**	**SO_x**
Construction	75	100	550	150	55	150
Operation	55	55	550	150	55	150

Source: SCAQMD. Website: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf (accessed in September 2018).
CO = carbon monoxide
lbs/day = pounds per day
NOx = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides
VOC = volatile organic compounds

Projects in the Basin with construction-related emissions or operational-related emissions that exceed any of their respective emission thresholds would be considered significant under SCAQMD guidelines.

Local Microscale Concentration Standards

The significance of localized project impacts under CEQA depends on whether ambient CO levels in the vicinity of the project are above or below State and federal CO standards. Because ambient CO levels are below the standards throughout the Basin, a project would be considered to have a significant CO impact if project emissions result in an exceedance of one or more of the 1-hour or 8-hour standards. The following are applicable local emission concentration standards for CO:

- California State 1-hour CO standard of 20 parts per million (ppm)
- California State 8-hour CO standard of 9 ppm

Localized Impacts Analysis

SCAQMD published its *Final Localized Significance Threshold Methodology* in June 2003 and updated it in July 2008 (SCAQMD 2008b), recommending that all air quality analyses include an assessment of both construction and operational impacts on the air quality of nearby sensitive receptors. Localized significance thresholds (LSTs) represent the maximum emissions from a project site of up to 5 acres that are not expected to result in an exceedance of the NAAQS or CAAQS for CO, NO_2, PM_{10} and $PM_{2.5}$, as shown in Table B. LSTs are based on the ambient concentrations of that pollutant within the project Source Receptor Area (SRA) and the distance to the nearest sensitive receptor. For this project, the appropriate SRA is the Pomona Walnut Valley area (SRA 10). Sensitive receptors include residences, schools, hospitals, and similar uses that are sensitive to adverse air quality. As described above, the nearest sensitive receptors are the school itself and residences adjacent to the project site boundary. The SCAQMD LST methodology specifies that the when the receptor distance is less than 25 meters that thresholds for 25 meters should be used (SCAQMD 2008b).

The LST screening table lookup methodology was created for projects up to 5 acres in size. SCAQMD published the *Fact Sheet for Applying CalEEMod to Localized Significance Thresholds* (SCAQMD 2008a) to estimate a realistic disturbed area size estimate based on the amount of construction equipment planned. While this project site is 25.8 acres, there would not be any large-scale grading or other mass ground disturbing activities. The construction of the new parking lot south of the Gymnasium would result in the largest single-day ground disturbance. The disturbed area for the project would be no more than 2 acre on any one day; thus, the 2-acre LSTs have been used for construction emissions.

On-site operational emissions would occur from stationary and mobile sources. On-site vehicle emissions are the largest source of emissions, and the on-site travel routes for the proposed project would be equivalent to driving over 2 acres of surface area. Therefore, the 2-acre thresholds would apply during project operations. Table H lists the emissions thresholds that apply during project construction and operation.

Table H: SCAQMD Localized Significance Thresholds (lbs/day)

Emissions Source Category	NO_X	CO	PM_{10}	$PM_{2.5}$
Construction (2-acre, 25 meter distance)	149	885	6	4
Operations (2-acre, 25 meter distance)	149	885	2	1

Source: South Coast Air Quality Management District (SCAQMD). Final Localized Significance Threshold Methodology (2008b).
CO = carbon monoxide
lbs/day = pounds per day
NOx = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size

GLOBAL CLIMATE CHANGE

State *CEQA Guidelines* Section 15064(b) provides that the "determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data," and further states that an "ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting."

Appendix G of the *CEQA Guidelines* includes significance thresholds for GHG emissions. A project would normally have a significant effect on the environment if it would:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

Currently, there is no statewide GHG emissions threshold that has been used to determine the potential GHG emission impacts of a project. To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, SCAQMD convened a GHG CEQA Significance Threshold Stakeholder Working Group (SCAQMD 2008b). Based on the last Working Group meeting (Meeting No. 15) held in September 2010, SCAQMD proposed an analysis methodology using a tiered approach for the evaluation of GHG emissions for development projects where SCAQMD is not the lead agency. The applicable tier for this educational development project is Tier 3 (if GHG emissions are less than 3,000 metric tons of carbon dioxide equivalent per year (MT CO_2e per year), project-level and cumulative GHG emissions would be less than significant).

IMPACTS AND MITIGATION

Air pollutant emissions associated with the project would occur over the short term from construction activities (e.g., fugitive dust from site preparation and grading), and emissions from equipment exhaust. Long-term regional emissions would be associated with project-related vehicular trips and energy consumption (e.g., electricity usage) by the proposed project. The purpose of this air quality analysis is to review reasonably foreseeable worst-case air quality impacts due to construction and occupancy of the project and to develop programmatic mitigation measures to address any potential impacts.

CONSTRUCTION IMPACTS

Equipment Exhaust and Related Construction Activities

The analysis using the preliminary construction planning allows for a project-level analysis and mitigation associated with construction activities. Construction activities produce combustion emissions from various sources (e.g., large equipment, utility engines, and motor vehicles transporting the construction crew). Exhaust emissions from construction activities envisioned on site would vary daily as construction activity levels change. The use of construction equipment on site would result in localized exhaust emissions. Air pollutant emission sources during project construction would include:

- Exhaust gas and particulate emissions generated by construction equipment engines
- Fugitive dust from soil disturbance during site preparation, grading, and excavation activities and
- Volatile compounds that evaporate during site paving and architectural coating (e.g., painting) of new structures

The Master Plan Update is divided into three phases, each of which contains potential projects. At full build-out, the Master Plan Update would demolish the existing 5,972 sf cafeteria facility, construct four new buildings with a total increase of approximately 73,100 sf of building space, and include several alterations to select hardscaped areas and parking lots. Table A lists the planned development by phase.

The construction analysis includes estimating the construction equipment that would be used during each construction activity, the hours of use for that construction equipment, the quantities of earth and debris to be moved, and on-road vehicle trips (worker, soil hauling, and vendor trips). The proposed earthwork for the project assumes balanced cut-and-fill. CalEEMod data and defaults are assumed for the construction activities, off-road equipment, on-road construction fleet mix and trip lengths.

The actual time frame for the build out of the Master Plan is dependent upon funding sources and a productive fundraising campaign. Currently, the schedule for the Master Plan is anticipated to be years into the future. The first phase would commence in 2019, and take approximately nine months to complete. Phase Two of the Master Plan is anticipated to be completed in several sub phases, and would likely be dependent on funding sources. The second phase is anticipated to span a minimum of five years, and kickoff shortly after the completion of phase one construction. The third and final phase is not anticipated to start construction until all of the sub phases identified in Phase Two are

complete. Table I lists a tentative project construction schedule for the proposed project based on a probable start date in 2019 and a conservative potential completion in 2026.

Table I: Tentative Project Construction Schedule

Phase Name	Phase Start Date	Phase End Date	Number of Days
Phase 1 Demolition	6/1/2019	6/28/2019	20
Phase 1 Building Construction	6/29/2019	3/6/2020	180
Phase 1 Architectural Coating	1/1/2020	3/6/2020	48
Phase 2 Demolition	4/1/2020	4/28/2020	20
Phase 2 Building Construction	4/29/2020	5/1/2025	1,307
Phase 2 Architectural Coating	10/1/2024	5/1/2025	153
Phase 2 Parking Lot	5/1/2025	5/14/2025	10
Phase 3 Demolition	6/1/2025	6/27/2025	20
Phase 3 Building Construction	6/28/2025	5/1/2026	220
Phase 3 Architectural Coating	2/1/2026	5/1/2026	65

Source: Damien High School Master Plan Update (2018).

The most recent version of CalEEMod (Version 2016.3.2) was used to calculate the construction emissions. Table J lists the estimated construction equipment that would be used during project construction as estimated by CalEEMod. Table K shows the construction emissions. The emissions rates shown in the table are from the CalEEMod output tables listed as “Mitigated Construction”, however the only measures that have been applied to the analysis are the required construction emissions control measures, or standard conditions. Standard measures are discussed later in this report. They are also the combination of the on- and off-site emissions and only show the higher of the summer and winter emissions.

As shown in Table K, the proposed project’s regional construction emissions would all be lower than their respective SCAQMD thresholds. Appendix A includes CalEEMod output, detailing the emission factors and other assumptions.

Fugitive Dust

Fugitive dust emissions are generally associated with land clearing and exposure of soils to the air and wind, as well as cut-and-fill grading operations. Dust generated during construction varies substantially on a project-by-project basis, depending on the level of activity, the specific operations, and weather conditions at the time of construction. The proposed project would be required to comply with SCAQMD Rule 403 to control fugitive dust.

Table J: Diesel Construction Equipment Used by Construction Phase

Phase Name		Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Phase 1	Demolition	Concrete/Industrial Saws	1	8	81	0.73
	Demolition	Rubber Tired Dozers	2	8	247	0.4
	Demolition	Excavators	3	8	158	0.38
	Building Construction	Cranes	1	7	231	0.29
	Building Construction	Forklifts	3	8	89	0.2
	Building Construction	Generator Sets	1	8	84	0.74
	Building Construction	Tractors/Loaders/Backhoes	3	7	97	0.37
	Building Construction	Welders	1	8	46	0.45
	Architectural Coating	Air Compressors	1	6	78	0.48
Phase 2	Demolition	Rubber Tired Dozers	2	8	247	0.4
	Demolition	Excavators	3	8	158	0.38
	Demolition	Concrete/Industrial Saws	1	8	81	0.73
	Building Construction	Cranes	1	7	231	0.29
	Building Construction	Forklifts	3	8	89	0.2
	Building Construction	Generator Sets	1	8	84	0.74
	Building Construction	Tractors/Loaders/Backhoes	3	7	97	0.37
	Building Construction	Welders	1	8	46	0.45
	Architectural Coating	Air Compressors	1	6	78	0.48
	Parking Lot	Pavers	2	8	130	0.42
	Parking Lot	Paving Equipment	2	8	132	0.36
	Parking Lot	Rollers	2	8	80	0.38
Phase 3	Demolition	Concrete/Industrial Saws	1	8	81	0.73
	Demolition	Rubber Tired Dozers	2	8	247	0.4
	Demolition	Excavators	3	8	158	0.38
	Building Construction	Cranes	1	7	231	0.29
	Building Construction	Forklifts	3	8	89	0.2
	Building Construction	Generator Sets	1	8	84	0.74
	Building Construction	Tractors/Loaders/Backhoes	3	7	97	0.37
	Building Construction	Welders	1	8	46	0.45
	Architectural Coating	Air Compressors	1	6	78	0.48

Source: Compiled by LSA (2019).

Table K: Short-Term Regional Construction Emissions

Construction Phase		Total Regional Pollutant Emissions, lbs/day							
		VOC	NO_X	CO	SO_X	Fugitive PM_{10}	Exhaust PM_{10}	Fugitive $PM_{2.5}$	Exhaust $PM_{2.5}$
Phase 1	Demolition	4	36	23	<1	<1	2	<1	2
	Building Construction	6	46	48	<1	7	1	2	1
	Architectural Coating	10	2	6	<1	1	<1	<1	<1
Phase 2	Demolition	3	34	23	<1	<1	2	<1	2
	Building Construction	5	42	45	<1	7	1	2	1
	Architectural Coating	3	1	5	<1	1	<1	<1	<1
	Paving	2	9	15	<1	<1	<1	<1	<1
Phase 3	Demolition	2	20	20	<1	<1	<1	<1	<1
	Building Construction	4	27	35	<1	7	<1	2	<1
	Architectural Coating	2	20	20	<1	<1	<1	<1	<1
Peak Daily		**16**	**48**	**55**	**<1**	**10**		**4**	
SCAQMD Thresholds		**75**	**100**	**550**	**150**	**150**		**55**	
Emissions Exceed Threshold?		**No**	**No**	**No**	**No**	**No**		**No**	

Source: Compiled by LSA (2019).
Note: These estimates reflect control of fugitive dust required by SCAQMD Rule 403. The values shown are the maximum summer or winter daily emissions results from CalEEMod. The peak daily emissions assume that architectural coatings would be applied during building construction.
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides
VOC = volatile organic compounds

Table K lists total construction emissions (i.e., fugitive-dust emissions and construction-equipment exhausts) that have incorporated the following Rule 403 measures that would be implemented to significantly reduce PM_{10} emissions from construction. The Rule 403 measures that were incorporated in the CalEEMod analysis are as follows:

- Water active sites at least three times daily (locations where grading is to occur will be thoroughly watered prior to earthmoving).
- Cover all trucks hauling dirt, sand, soil, or other loose materials, or maintain at least 2 ft (0.6 m) of freeboard (vertical space between the top of the load and the top of the trailer) in accordance with the requirements of California Vehicle Code Section 23114.
- Reduce traffic speeds on all unpaved roads to 15 mph or less.

Localized Impacts Analysis

Table L shows that the onsite construction emissions would not exceed the LSTs for the onsite school buildings and nearby residents. Therefore, construction of the project would not result in a locally significant air quality impact.

Table L: Construction Localized Impact Analysis

Emissions Sources	Pollutant Emissions (lbs/day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
On-Site Emissions	36	22	2	2
LSTs	**149**	**885**	**6**	**4**
Emissions Exceed Threshold?	**No**	**No**	**No**	**No**

Source: Compiled by LSA (2019).
Note: Source Receptor Area: Pomona/Walnut Valley, 2 acres, 25 meter distance
CO = carbon monoxide
lbs/day = pounds per day
LST = local significance threshold
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size

Odors from Construction Activities

Heavy-duty equipment in the project area during construction would emit odors, primarily from equipment exhaust. However, the construction activity would cease when individual construction is completed. No other sources of objectionable odors have been identified for the proposed project, and no mitigation measures are required.

SCAQMD Rule 402 regarding nuisances states: "A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property." The proposed uses are not anticipated to emit any objectionable odors; therefore, objectionable odors affecting a substantial number of people would not occur as a result of the proposed project.

LONG-TERM REGIONAL AIR QUALITY IMPACTS

Long-Term Project Operational Emissions

Long-term air pollutant emission impacts are those associated with new stationary sources and mobile sources resulting from the Master Plan Update. The proposed project would address campus development needs without increasing the student or staff population from the current approximate student population of 940 and approximately 75 staff members.

The CalEEMod model was used to characterize the existing 2018 school operational emissions to document the baseline condition. CalEEMod was then used to characterize the Damien High School operational emissions with the total Master Plan Update implemented in 2021, including Phases 1, 2 and 3. Based on default CalEEMod operational parameters for a high school, the completed Damien High School with the Master Plan Update completed would generate the emissions shown in Table M. The operational emissions as a result of the Master Plan Update would essentially stay the same as existing; the reductions shown are primarily due to the vehicle improvements between the 2018 and 2021 operational years.

Table M: Opening Year Regional Operational Emissions

Source	Pollutant Emissions, lbs/day					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Operational Emissions from the Existing Damien High School						
Area	3	<1	<1	<1	<1	<1
Energy	<1	<1	<1	<1	<1	<1
Mobile	5	22	68	<1	15	4
Total Existing Emissions	**8**	**22**	**69**	**<1**	**15**	**4**
Operational Emissions from Damien High School with Master Plan Update						
Area	5	<1	<1	<1	<1	<1
Energy	<1	<1	<1	<1	<1	<1
Mobile	3	17	52	<1	15	4
Total Project Emissions	**8**	**18**	**53**	**<1**	**15**	**4**
Net New Operational Emissions	**0**	**-4**	**-16**	**<1**	**0**	**0**
SCAQMD Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Emissions Exceed Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: Compiled by LSA (2019).
CO = carbon monoxide
lbs/day = pounds per day
NO_x = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SCAQMD = South Coast Air Quality Management District
SO_x = sulfur oxides
VOC = volatile organic compounds

As shown in Table M, the net new project related criteria pollutant emissions would not exceed the corresponding SCAQMD daily emission thresholds for any criteria pollutant.

Localized Impacts Analysis

Table N shows the calculated emissions for the total future Damien High School with Master Plan Update operational activities compared with the appropriate LSTs. By design, the localized impacts analysis only includes on-site sources; however, CalEEMod does not separate on-site and off-site operational emissions. For a worst-case scenario assessment, it was assumed all area source emissions shown in Table L would occur on-site, all of the energy source emissions would occur off-site at the utility power stations, and a portion of the mobile sources would occur on-site. The average trip lengths assumed by CalEEMod are 16.6 miles (mi) for home to work, 8.4 mi for home to shopping, and 6.9 mi for other types of trips. The average on-site distance driven is estimated to be no more than 1,000 ft, which is less than 2 percent of the total miles traveled. To be conservative, 5 percent was used for this LST analysis.

Table N shows that the localized operational emissions would not exceed the LSTs for the onsite school buildings and nearby residents; therefore, the proposed operational activity would not result in a locally significant air quality impact.

Table N: Long-Term Operational Localized Impacts Analysis

Emissions Sources	Pollutant Emissions (lbs/day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
On-Site Emissions	<1	3	<1	<1
LSTs	**149**	**885**	**2**	**1**
Emissions Exceed Threshold?	**No**	**No**	**No**	**No**

Compiled by LSA (2019).
Note: Source Receptor Area: Pomona/Walnut Valley, 2 acres, 25 meter distance, on-site traffic 5 percent of total.
CO = carbon monoxide
lbs/day = pounds per day
LST = localized significance threshold
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size

Greenhouse Gas Emissions

This section evaluates potential significant impacts to GCC that could result from implementation of the proposed project. Because it is not possible to tie specific GHG emissions to actual changes in climate, this evaluation focuses on the project's emission of GHGs.

Construction and operation of the proposed project would generate GHG emissions, with the majority of energy consumption (and associated generation of GHG emissions) occurring during the project's operation (as opposed to during its construction). Overall, the following activities associated with the proposed project could directly or indirectly contribute to the generation of GHG emissions:

- **Construction Activities:** During project construction, GHGs would be emitted through the operation of construction equipment and from worker and vendor vehicles, each of which typically uses fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs (e.g., CO_2, CH_4, and N_2O). Furthermore, CH_4 is emitted during the fueling of heavy equipment.

- **Gas, Electricity, and Water Use:** Natural gas use results in the emission of two GHGs: CH_4 (the major component of natural gas) and CO_2 (from the combustion of natural gas). Electricity use can result in GHG production if the electricity is generated by combusting fossil fuel. California's water conveyance system is energy-intensive.

- **Solid Waste Disposal:** Solid waste generated by the project could contribute to GHG emissions in a variety of ways. Landfilling and other methods of disposal use energy for transporting and managing the waste, and they produce additional GHGs to varying degrees. Landfilling, the most common waste management practice, results in the release of CH_4 from the anaerobic decomposition of organic materials. However, landfill-generated CH_4 can also be a source of energy.

- **Motor Vehicle Use:** Transportation associated with Damien High School operations would result in GHG emissions from the combustion of fossil fuels in daily vehicle trips. However, the project would not result in additional students and trip generation associated with the project is expected to be the same under the with project conditions.

Table O lists the annual CO_2e emissions for each of the planned construction phases (based on the CalEEMod analysis). Per SCAQMD guidance (SCAQMD 2008b), due to the long-term nature of the GHGs in the atmosphere, instead of determining significance of construction emissions alone, the total construction emissions are amortized over 30 years (an estimate of the life of the proposed project), and are added to the operational emissions for comparison to the applicable GHG significance threshold.

Table O: Construction Greenhouse Gas Emissions

Construction Phase		Total Regional Pollutant Emissions (MT/yr)			
		CO_2	CH_4	N_2O	CO_2e
2019	Phase 1 Demolition	37	<1	0	38
	Phase 1 Building Construction	834	<1	0	836
2020	Phase 1 Building Construction	298	<1	0	298
	Phase 1 Architectural Coating	31	<1	0	31
	Phase 2 Demolition	37	<1	0	37
	Phase 2 Building Construction	1,098	<1	0	1,100
2021	Phase 2 Building Construction	1,592	<1	0	1,596
2022	Phase 2 Building Construction	1,558	<1	0	1,561
2023	Phase 2 Building Construction	1,515	<1	0	1,518
2024	Phase 2 Building Construction	1,506	<1	0	1,509
	Phase 2 Architectural Coating	38	<1	0	38
2025	Phase 2 Building Construction	491	<1	0	492
	Phase 2 Architectural Coating	49	<1	0	49
	Phase 2 Parking Lot	11	<1	0	11
	Phase 3 Demolition	37	<1	0	37
	Phase 3 Building Construction	751	<1	0	753
2026	Phase 3 Building Construction	484	<1	0	485
	Phase 3 Architectural Coating	35	<1	0	35
Total Construction Emissions		**10,401**	**<1**	**0**	**10,422**
Amortized over 30 years		**347**	**<1**	**0**	**347**

Compiled by LSA (2019).
CH_4 = methane
CO_2 = carbon dioxide
CO_2e = carbon dioxide equivalent
MT/yr = metric tons per year
N_2O = nitrous oxide

Long-term operation of the proposed project would generate GHG emissions from various source categories. Area-source emissions would be associated with activities including landscaping and maintenance of the proposed project. Energy-source emissions would occur at off-site utility providers as a result of demand for electricity and natural gas by the proposed project. Mobile-source emissions of GHGs would include project-generated vehicle trips associated with on-site energy use and staff and student vehicle trips. Waste generated by the project and water used would also result in GHG emissions. Most of these source categories would be unchanged by the proposed Master Plan Update. There would be additional building space that would require energy to cool, heat, and light.

The GHG emission estimates presented in Table P show the emissions associated with the level of Damien High School operation currently and after the Master Plan Update is fully implemented. Appendix A includes the worksheets for the GHG emissions.

Table P: Operational Greenhouse Gas Emissions

Source	Pollutant Emissions, MT/year					
	Bio- CO_2	NBio- CO_2	Total CO_2	CH_4	N_2O	CO_2e
Greenhouse Gas Emissions from the Existing Damien High School						
Area Sources	0	<1	<1	<1	0	<1
Energy Sources	0	688	688	<1	<1	690
Mobile Sources	0	2,502	2,502	<1	0	2,506
Waste Sources	34	0	34	2	0	84
Water Usage	1	93	95	<1	<1	99
Total Existing Emissions	**35**	**3,284**	**3,319**	**2**	**0**	**3,379**
Greenhouse Gas Emissions from Damien High School with Master Plan Update						
Construction emissions amortized over 30 years	0	347	347	<1	0	347
Operational Emissions						
Area Sources	0	<1	<1	<1	0	<1
Energy Sources	0	803	803	<1	<1	805
Mobile Sources	0	2,325	2,325	<1	0	2,328
Waste Sources	35	0	35	2	0	86
Water Usage	1	96	97	<1	<1	102
Total Proposed Emissions	**36**	**3,571**	**3,607**	**2**	**0**	**3,669**
Net New Operational Emissions						**290**
SCAQMD Threshold						**3,000**
Emissions Exceed Threshold?						**No**

Compiled by LSA (2019).
Note: Numbers in table may not appear to add up correctly due to rounding.
Bio-CO_2 = biologically generated CO_2 MT/yr = metric tons per year
CH_4 = methane N_2O = nitrous oxide
CO_2 = carbon dioxide NBio-CO_2 = Non-biologically generated CO_2
CO_2e = carbon dioxide equivalent

As shown in Table P, the project would result in a net increase in GHG emissions of 290 MT CO_2e per year, which is less than the SCAQMD-recommended threshold of 3,000 MT CO_2e/yr.

A contributor to these GHG emissions are the emissions from power plants producing the electricity used by the school. This would be principally building cooling, school equipment, and building and area lighting. The Damien High School buildings built for the Master Plan Update would be built to meet California Green Building standards and using high-efficiency lighting would minimize these energy-related GHG emissions.

Further, enhanced water conservation measures, such as drought-resistant landscaping, low-flow fixtures, and water efficient appliances would minimize water usage. Enhanced waste handling procedures and improved recycling would minimize waste-related GHG emissions. Therefore, the proposed Master Plan Update would not result in a significant level of GHG emissions.

LONG-TERM MICROSCALE (CARBON MONOXIDE HOT-SPOT) ANALYSIS

Vehicular trips associated with the proposed project would contribute to congestion at intersections and along roadway segments in the project vicinity. Localized air quality impacts would occur when

emissions from vehicular traffic increase as a result of the proposed project. The primary mobile-source pollutant of local concern is CO, a direct function of vehicle idling time and, thus, of traffic flow conditions. CO transport is extremely limited; under normal meteorological conditions, it disperses rapidly with distance from the source. However, under certain extreme meteorological conditions, CO concentrations near a congested roadway or intersection may reach unhealthful levels, affecting local sensitive receptors (e.g., residents, schoolchildren, the elderly, and hospital patients). Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service or with extremely high traffic volumes. In areas with high ambient background CO concentrations, modeling is recommended to determine a project's effect on local CO levels.

An assessment of project-related impacts on localized ambient air quality requires that future ambient air quality levels be projected. Existing CO concentrations in the immediate project vicinity are not available. Ambient CO levels monitored at the Pomona Monitoring Station showed a highest recorded 1-hour concentration of 2.0 ppm (the State standard is 20 ppm) and a highest 8-hour concentration of 1.6 ppm (the State standard is 9 ppm) during the past 3 years (Table F). The highest CO concentrations would normally occur during peak traffic hours; hence, CO impacts calculated under peak traffic conditions represent a worst-case analysis. Reduced speeds and vehicular congestion at intersections result in increased CO emissions.

As described in the *Traffic Assessment and Site Access Analysis- Damien High School Master Plan Update* prepared for the project (LSA 2019), the proposed project would not result in any increase in student enrollment; thus, the project is not anticipated to generate any additional trips. All study area intersections currently operate at satisfactory levels of service and are projected to continue to do so.

Therefore, the project could be implemented in an existing and buildout setting with no significant peak-hour intersection impacts. Given the extremely low level of CO concentrations in the project area and the lack of traffic impacts at any surrounding intersections, project-related vehicles are not expected to contribute significantly to CO concentrations exceeding the State or federal CO standards. Because no CO hot-spot would occur, there would be no project-related impacts on CO concentrations.

AIR QUALITY MANAGEMENT PLAN CONSISTENCY

A consistency determination plays an essential role in local agency project review by linking local planning and unique individual projects to the air quality plans. A consistency determination fulfills the CEQA goal of fully informing local agency decision-makers of the environmental costs of the project under consideration at a stage early enough to ensure that air quality concerns are addressed. Only new or amended General Plan elements, Specific Plans, and significantly unique projects need to undergo a consistency review due to the air quality plan strategy being based on projections from local General Plans. The applicable air quality plan is the 2016 AQMP.

Projects are considered consistent with, and would not conflict with or obstruct implementation of, the AQMP if the growth in socioeconomic factors (e.g., population, employment) is consistent with the underlying regional plans used to develop the AQMP. The future emissions forecasts are primarily based on demographic and economic growth projections provided by SCAG. Thus,

demographic growth forecasts for various socioeconomic categories (e.g., population, housing, employment by industry) developed by SCAG for their 2016 Regional Transportation Plan were used to estimate future emissions in the Final 2016 AQMP (SCAQMD 2017).

Pursuant to the methodology provided in Chapter 12 of the 1993 SCAQMD *CEQA Air Quality Handbook*, consistency with the Basin 2016 AQMP is affirmed when a project (1) would not increase the frequency or severity of an air quality standards violation or cause a new violation and (2) is consistent with the growth assumptions in the AQMP. Consistency review is presented as follows:

1. The project would result in short-term construction and long-term operational pollutant emissions that are all less than the CEQA significance emissions thresholds established by SCAQMD, as demonstrated above; therefore, the project would not result in an increase in the frequency or severity of an air quality standards violation or cause a new air quality standard violation.

2. The *CEQA Air Quality Handbook* indicates that consistency with AQMP growth assumptions must be analyzed for new or amended General Plan elements, Specific Plans, and significant projects. Significant projects include airports, electrical generating facilities, petroleum and gas refineries, designation of oil drilling districts, water ports, solid waste disposal sites, and offshore drilling facilities; therefore, the proposed project is not defined as significant.

The project would provide facility enhancements to accommodate the existing student population. The project would not change the land use designation for the project site. Therefore, based on the consistency analysis presented above, the proposed project would be consistent with the regional AQMP.

STANDARD CONDITIONS

Construction

The project is required to comply with regional rules that assist in reducing short-term air pollutant emissions. SCAQMD Rule 403 requires that fugitive dust be controlled with best-available control measures so the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source (SCAQMD 2005). In addition, SCAQMD Rule 403 requires implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off site. Applicable dust suppression techniques from Rule 403 are summarized below. Implementation of these dust suppression techniques can reduce the fugitive dust generation (and thus, the PM_{10} component). Compliance with these rules would reduce impacts on nearby sensitive receptors. As shown in Table K, implementation of Rule 403 measures results in fugitive PM_{10} and $PM_{2.5}$ emissions below SCAQMD thresholds.

The applicable Rule 403 measures are as follows:

- Apply nontoxic chemical soil stabilizers according to manufacturers' specifications to all inactive construction areas (previously graded areas inactive for 10 days or more).
- Water active sites at least three times daily (Locations where grading is to take place will be thoroughly watered prior to earthmoving).

- Cover all trucks hauling dirt, sand, soil, or other loose materials, or maintain at least 2 ft (0.6 m) of freeboard (vertical space between the top of the load and the top of the trailer) in accordance with the requirements of California Vehicle Code Section 23114.
- Pave construction access roads at least 100 ft (30 m) onto the site from the main road.
- Reduce traffic speeds on all unpaved roads to 15 mph or less.

The applicable CalRecycle Sustainable (Green) Building Program Measures are:

- Recycle/reuse at least 50 percent of construction materials (including, but not limited to, soil, mulch, vegetation, concrete, lumber, metal, and cardboard).
- Use “green building materials” (e.g., those materials that are rapidly renewable or resource-efficient, and recycled and manufactured in an environmentally friendly way) for at least 10 percent of the project, as specified on the CalRecycle website (California Department of Resources Recycling and Recovery).

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APPENDIX A

CALEEMOD PRINTOUTS

Damien High School Existing Condition - Los Angeles-South Coast County, Annual

Damien High School Existing Condition

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
High School	940.00	Student	2.79	132,731.00	0
Other Non-Asphalt Surfaces	19.28	Acre	19.28	839,836.80	0
Parking Lot	415.00	Space	3.73	166,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Damien HS Campus totals 25.8 acres with 940 students and 75 staff.

Construction Phase - Existing Damien High School

Off-road Equipment -

Off-road Equipment -

Trips and VMT -

Demolition - Phase 1 demo: 5,972 sq ft building and 1 tennis court. Estimated tonnage - Phase 2 demo: 5 tennis courts & portion of parking lot north of Gymnasium. Phase 3 demo: 72 space parking lot east of the Event Center

Architectural Coating - Assume all architectural coatings comply with SCAQMD Rule 1113.

Area Coating - Assume all architectural coatings comply with SCAQMD Rule 1113.

Energy Use -

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	50
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblAreaCoating	Area_EF_Parking	100	50
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	0.00
tblLandUse	LandUseSquareFeet	124,701.32	132,731.00
tblLandUse	LotAcreage	2.86	2.79

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.5841	1.7000e-004	0.0178	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0341	0.0341	9.0000e-005	0.0000	0.0365
Energy	8.4400e-003	0.0767	0.0644	4.6000e-004		5.8300e-003	5.8300e-003		5.8300e-003	5.8300e-003	0.0000	688.2664	688.2664	0.0159	4.4900e-003	690.0004
Mobile	0.6237	3.2124	9.3937	0.0272	2.0486	0.0331	2.0817	0.5493	0.0312	0.5804	0.0000	2,502.1148	2,502.1148	0.1517	0.0000	2,505.9073
Waste						0.0000	0.0000		0.0000	0.0000	33.8975	0.0000	33.8975	2.0033	0.0000	83.9795
Water						0.0000	0.0000		0.0000	0.0000	1.2787	93.3626	94.6413	0.1335	3.5600e-003	99.0398

Total	**1.2162**	**3.2893**	**9.4759**	**0.0277**	**2.0486**	**0.0390**	**2.0876**	**0.5493**	**0.0370**	**0.5863**	**35.1762**	**3,283.7778**	**3,318.9540**	**2.3045**	**8.0500e-003**	**3,378.9634**

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	0.5841	1.7000e-004	0.0178	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0341	0.0341	9.0000e-005	0.0000	0.0365
Energy	8.4400e-003	0.0767	0.0644	4.6000e-004		5.8300e-003	5.8300e-003		5.8300e-003	5.8300e-003	0.0000	688.2664	688.2664	0.0159	4.4900e-003	690.0004
Mobile	0.6237	3.2124	9.3937	0.0272	2.0486	0.0331	2.0817	0.5493	0.0312	0.5804	0.0000	2,502.1148	2,502.1148	0.1517	0.0000	2,505.9073
Waste						0.0000	0.0000		0.0000	0.0000	33.8975	0.0000	33.8975	2.0033	0.0000	83.9795
Water						0.0000	0.0000		0.0000	0.0000	1.2787	93.3626	94.6413	0.1335	3.5600e-003	99.0398
Total	**1.2162**	**3.2893**	**9.4759**	**0.0277**	**2.0486**	**0.0390**	**2.0876**	**0.5493**	**0.0370**	**0.5863**	**35.1762**	**3,283.7778**	**3,318.9540**	**2.3045**	**8.0500e-003**	**3,378.9634**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Existing Condition	Site Preparation	8/17/2018	8/16/2018	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 23.01

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Existing Condition	Rubber Tired Dozers	3	8.00	247	0.40
Existing Condition	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Existing Condition	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Existing Condition - 2018

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

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

Mitigated Construction Off-Site

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

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive 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	0.6237	3.2124	9.3937	0.0272	2.0486	0.0331	2.0817	0.5493	0.0312	0.5804	0.0000	2,502.1148	2,502.1148	0.1517	0.0000	2,505.9073
Unmitigated	0.6237	3.2124	9.3937	0.0272	2.0486	0.0331	2.0817	0.5493	0.0312	0.5804	0.0000	2,502.1148	2,502.1148	0.1517	0.0000	2,505.9073

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
High School	1,607.40	573.40	235.00	5,396,683	5,396,683
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	1,607.40	573.40	235.00	5,396,683	5,396,683

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
High School	16.60	8.40	6.90	77.80	17.20	5.00	75	19	6
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
High School	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944
Other Non-Asphalt Surfaces	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944
Parking Lot	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: Y

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive 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	604.7575	604.7575	0.0143	2.9600e-003	605.9952
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	604.7575	604.7575	0.0143	2.9600e-003	605.9952
NaturalGas Mitigated	8.4400e-003	0.0767	0.0644	4.6000e-004		5.8300e-003	5.8300e-003		5.8300e-003	5.8300e-003	0.0000	83.5089	83.5089	1.6000e-003	1.5300e-003	84.0052
NaturalGas Unmitigated	8.4400e-003	0.0767	0.0644	4.6000e-004		5.8300e-003	5.8300e-003		5.8300e-003	5.8300e-003	0.0000	83.5089	83.5089	1.6000e-003	1.5300e-003	84.0052

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					
High School	1.5649e+006	8.4400e-003	0.0767	0.0644	4.6000e-004		5.8300e-003	5.8300e-003		5.8300e-003	5.8300e-003	0.0000	83.5089	83.5089	1.6000e-003	1.5300e-003	84.0052
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**8.4400e-003**	**0.0767**	**0.0644**	**4.6000e-004**		**5.8300e-003**	**5.8300e-003**		**5.8300e-003**	**5.8300e-003**	**0.0000**	**83.5089**	**83.5089**	**1.6000e-003**	**1.5300e-003**	**84.0052**

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					
High School	1.5649e+006	8.4400e-003	0.0767	0.0644	4.6000e-004		5.8300e-003	5.8300e-003		5.8300e-003	5.8300e-003	0.0000	83.5089	83.5089	1.6000e-003	1.5300e-003	84.0052
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**8.4400e-003**	**0.0767**	**0.0644**	**4.6000e-004**		**5.8300e-003**	**5.8300e-003**		**5.8300e-003**	**5.8300e-003**	**0.0000**	**83.5089**	**83.5089**	**1.6000e-003**	**1.5300e-003**	**84.0052**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e

Land Use	kWh/yr	MT/yr			
High School	939735	523.3965	0.0124	2.5600e-003	524.4677
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	146080	81.3609	1.9200e-003	4.0000e-004	81.5275
Total		**604.7575**	**0.0143**	**2.9600e-003**	**605.9952**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
High School	939735	523.3965	0.0124	2.5600e-003	524.4677
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	146080	81.3609	1.9200e-003	4.0000e-004	81.5275
Total		**604.7575**	**0.0143**	**2.9600e-003**	**605.9952**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive 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	0.5841	1.7000e-004	0.0178	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0341	0.0341	9.0000e-005	0.0000	0.0365
Unmitigated	0.5841	1.7000e-004	0.0178	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0341	0.0341	9.0000e-005	0.0000	0.0365

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	0.0378					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5446					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.7000e-003	1.7000e-004	0.0178	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0341	0.0341	9.0000e-005	0.0000	0.0365
Total	**0.5841**	**1.7000e-004**	**0.0178**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**	**0.0000**	**0.0341**	**0.0341**	**9.0000e-005**	**0.0000**	**0.0365**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0378					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5446					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.7000e-003	1.7000e-004	0.0178	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0341	0.0341	9.0000e-005	0.0000	0.0365

Total	**0.5841**	**1.7000e-004**	**0.0178**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**	**0.0000**	**0.0341**	**0.0341**	**9.0000e-005**	**0.0000**	**0.0365**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	94.6413	0.1335	3.5600e-003	99.0398
Unmitigated	94.6413	0.1335	3.5600e-003	99.0398

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
High School	4.03054 / 10.3642	94.6413	0.1335	3.5600e-003	99.0398
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**94.6413**	**0.1335**	**3.5600e-003**	**99.0398**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
High School	4.03054 / 10.3642	94.6413	0.1335	3.5600e-003	99.0398
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**94.6413**	**0.1335**	**3.5600e-003**	**99.0398**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	33.8975	2.0033	0.0000	83.9795
Unmitigated	33.8975	2.0033	0.0000	83.9795

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
High School	166.99	33.8975	2.0033	0.0000	83.9795
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**33.8975**	**2.0033**	**0.0000**	**83.9795**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
High School	166.99	33.8975	2.0033	0.0000	83.9795
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**33.8975**	**2.0033**	**0.0000**	**83.9795**

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

Damien High School Existing Condition - Los Angeles-South Coast County, Winter

Damien High School Existing Condition

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
High School	940.00	Student	2.79	132,731.00	0
Other Non-Asphalt Surfaces	19.28	Acre	19.28	839,836.80	0
Parking Lot	415.00	Space	3.73	166,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Damien HS Campus totals 25.8 acres with 940 students and 75 staff.

Construction Phase - Existing Damien High School

Off-road Equipment -

Off-road Equipment -

Trips and VMT -

Demolition - Phase 1 demo: 5,972 sq ft building and 1 tennis court. Estimated tonnage - Phase 2 demo: 5 tennis courts & portion of parking lot north of Gymnasium. Phase 3 demo: 72 space parking lot east of the Event Center

Architectural Coating - Assume all architectural coatings comply with SCAQMD Rule 1113.

Area Coating - Assume all architectural coatings comply with SCAQMD Rule 1113.

Energy Use -

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	50
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblAreaCoating	Area_EF_Parking	100	50
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	0.00
tblLandUse	LandUseSquareFeet	124,701.32	132,731.00
tblLandUse	LotAcreage	2.86	2.79

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	0.0000	0.0000	0.0000	0.0000	0.0000	2.5787	0.0000	0.0000	2.3724	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.5787**	**0.0000**	**0.0000**	**2.3724**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	0.0000	0.0000	0.0000	0.0000	0.0000	2.5787	0.0000	0.0000	2.3724	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.5787**	**0.0000**	**0.0000**	**2.3724**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.2048	1.3300e-003	0.1423	1.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		0.3008	0.3008	8.3000e-004		0.3214
Energy	0.0462	0.4203	0.3531	2.5200e-003		0.0320	0.0320		0.0320	0.0320		504.3992	504.3992	9.6700e-003	9.2500e-003	507.3966
Mobile	4.4511	22.0226	64.6094	0.1875	14.6001	0.2322	14.8323	3.9083	0.2186	4.1269		19,018.4578	19,018.4578	1.1692		19,047.6877
Total	**7.7021**	**22.4443**	**65.1047**	**0.1900**	**14.6001**	**0.2647**	**14.8648**	**3.9083**	**0.2511**	**4.1594**		**19,523.1577**	**19,523.1577**	**1.1797**	**9.2500e-003**	**19,555.4057**

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	3.2048	1.3300e-003	0.1423	1.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		0.3008	0.3008	8.3000e-004		0.3214
Energy	0.0462	0.4203	0.3531	2.5200e-003		0.0320	0.0320		0.0320	0.0320		504.3992	504.3992	9.6700e-003	9.2500e-003	507.3966
Mobile	4.4511	22.0226	64.6094	0.1875	14.6001	0.2322	14.8323	3.9083	0.2186	4.1269		19,018.4578	19,018.4578	1.1692		19,047.6877
Total	**7.7021**	**22.4443**	**65.1047**	**0.1900**	**14.6001**	**0.2647**	**14.8648**	**3.9083**	**0.2511**	**4.1594**		**19,523.1577**	**19,523.1577**	**1.1797**	**9.2500e-003**	**19,555.4057**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Existing Condition	Site Preparation	8/17/2018	8/16/2018	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 23.01

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Existing Condition	Rubber Tired Dozers	3	8.00	247	0.40
Existing Condition	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Existing Condition	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Existing Condition - 2018

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

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

Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

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

Mitigated Construction Off-Site

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	4.4511	22.0226	64.6094	0.1875	14.6001	0.2322	14.8323	3.9083	0.2186	4.1269		19,018.4578	19,018.4578	1.1692		19,047.6877
Unmitigated	4.4511	22.0226	64.6094	0.1875	14.6001	0.2322	14.8323	3.9083	0.2186	4.1269		19,018.4578	19,018.4578	1.1692		19,047.6877

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
High School	1,607.40	573.40	235.00	5,396,683	5,396,683
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	1,607.40	573.40	235.00	5,396,683	5,396,683

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-...	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
High School	16.60	8.40	6.90	77.80	17.20	5.00	75	19	6
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
High School	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

Other Non-Asphalt Surfaces	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944
Parking Lot	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: Y

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.0462	0.4203	0.3531	2.5200e-003		0.0320	0.0320		0.0320	0.0320		504.3992	504.3992	9.6700e-003	9.2500e-003	507.3966
NaturalGas Unmitigated	0.0462	0.4203	0.3531	2.5200e-003		0.0320	0.0320		0.0320	0.0320		504.3992	504.3992	9.6700e-003	9.2500e-003	507.3966

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					
High School	4287.39	0.0462	0.4203	0.3531	2.5200e-003		0.0320	0.0320		0.0320	0.0320		504.3992	504.3992	9.6700e-003	9.2500e-003	507.3966
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Total		**0.0462**	**0.4203**	**0.3531**	**2.5200e-003**		**0.0320**	**0.0320**		**0.0320**	**0.0320**		**504.3992**	**504.3992**	**9.6700e-003**	**9.2500e-003**	**507.3966**

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					
High School	4.28739	0.0462	0.4203	0.3531	2.5200e-003		0.0320	0.0320		0.0320	0.0320		504.3992	504.3992	9.6700e-003	9.2500e-003	507.3966
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0462**	**0.4203**	**0.3531**	**2.5200e-003**		**0.0320**	**0.0320**		**0.0320**	**0.0320**		**504.3992**	**504.3992**	**9.6700e-003**	**9.2500e-003**	**507.3966**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.2048	1.3300e-003	0.1423	1.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		0.3008	0.3008	8.3000e-004		0.3214
Unmitigated	3.2048	1.3300e-003	0.1423	1.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		0.3008	0.3008	8.3000e-004		0.3214

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	0.2069					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.9843					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0136	1.3300e-003	0.1423	1.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		0.3008	0.3008	8.3000e-004		0.3214
Total	**3.2048**	**1.3300e-003**	**0.1423**	**1.0000e-005**		**5.1000e-004**	**5.1000e-004**		**5.1000e-004**	**5.1000e-004**		**0.3008**	**0.3008**	**8.3000e-004**		**0.3214**

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	0.2069					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.9843					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0136	1.3300e-003	0.1423	1.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		0.3008	0.3008	8.3000e-004		0.3214
Total	**3.2048**	**1.3300e-003**	**0.1423**	**1.0000e-005**		**5.1000e-004**	**5.1000e-004**		**5.1000e-004**	**5.1000e-004**		**0.3008**	**0.3008**	**8.3000e-004**		**0.3214**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

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

Damien High School Existing Condition - Los Angeles-South Coast County, Summer

Damien High School Existing Condition

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
High School	940.00	Student	2.79	132,731.00	0
Other Non-Asphalt Surfaces	19.28	Acre	19.28	839,836.80	0
Parking Lot	415.00	Space	3.73	166,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Damien HS Campus totals 25.8 acres with 940 students and 75 staff.

Construction Phase - Existing Damien High School

Off-road Equipment -

Off-road Equipment -

Trips and VMT -

Demolition - Phase 1 demo: 5,972 sq ft building and 1 tennis court. Estimated tonnage - Phase 2 demo: 5 tennis courts & portion of parking lot north of Gymnasium. Phase 3 demo: 72 space parking lot east of the Event Center

Architectural Coating - Assume all architectural coatings comply with SCAQMD Rule 1113.

Area Coating - Assume all architectural coatings comply with SCAQMD Rule 1113.

Energy Use -

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	50
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblAreaCoating	Area_EF_Parking	100	50
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	0.00
tblLandUse	LandUseSquareFeet	124,701.32	132,731.00
tblLandUse	LotAcreage	2.86	2.79

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	0.0000	0.0000	0.0000	0.0000	0.0000	2.5787	0.0000	0.0000	2.3724	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.5787**	**0.0000**	**0.0000**	**2.3724**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	0.0000	0.0000	0.0000	0.0000	0.0000	2.5787	0.0000	0.0000	2.3724	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.5787**	**0.0000**	**0.0000**	**2.3724**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.2048	1.3300e-003	0.1423	1.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		0.3008	0.3008	8.3000e-004		0.3214
Energy	0.0462	0.4203	0.3531	2.5200e-003		0.0320	0.0320		0.0320	0.0320		504.3992	504.3992	9.6700e-003	9.2500e-003	507.3966
Mobile	4.5528	21.2526	68.3834	0.1972	14.6001	0.2311	14.8311	3.9083	0.2175	4.1258		19,991.3547	19,991.3547	1.1827		20,020.9219
Total	**7.8038**	**21.6742**	**68.8787**	**0.1998**	**14.6001**	**0.2635**	**14.8636**	**3.9083**	**0.2500**	**4.1582**		**20,496.0547**	**20,496.0547**	**1.1932**	**9.2500e-003**	**20,528.6399**

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	3.2048	1.3300e-003	0.1423	1.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		0.3008	0.3008	8.3000e-004		0.3214
Energy	0.0462	0.4203	0.3531	2.5200e-003		0.0320	0.0320		0.0320	0.0320		504.3992	504.3992	9.6700e-003	9.2500e-003	507.3966
Mobile	4.5528	21.2526	68.3834	0.1972	14.6001	0.2311	14.8311	3.9083	0.2175	4.1258		19,991.3547	19,991.3547	1.1827		20,020.9219
Total	**7.8038**	**21.6742**	**68.8787**	**0.1998**	**14.6001**	**0.2635**	**14.8636**	**3.9083**	**0.2500**	**4.1582**		**20,496.0547**	**20,496.0547**	**1.1932**	**9.2500e-003**	**20,528.6399**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Existing Condition	Site Preparation	8/17/2018	8/16/2018	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 23.01

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Existing Condition	Rubber Tired Dozers	3	8.00	247	0.40
Existing Condition	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Existing Condition	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Existing Condition - 2018

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

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

Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

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

Mitigated Construction Off-Site

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	4.5528	21.2526	68.3834	0.1972	14.6001	0.2311	14.8311	3.9083	0.2175	4.1258		19,991.3547	19,991.3547	1.1827		20,020.9219
Unmitigated	4.5528	21.2526	68.3834	0.1972	14.6001	0.2311	14.8311	3.9083	0.2175	4.1258		19,991.3547	19,991.3547	1.1827		20,020.9219

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
High School	1,607.40	573.40	235.00	5,396,683	5,396,683
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	1,607.40	573.40	235.00	5,396,683	5,396,683

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
High School	16.60	8.40	6.90	77.80	17.20	5.00	75	19	6
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
High School	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944
Other Non-Asphalt Surfaces	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

Parking Lot	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: Y

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.0462	0.4203	0.3531	2.5200e-003		0.0320	0.0320		0.0320	0.0320		504.3992	504.3992	9.6700e-003	9.2500e-003	507.3966
NaturalGas Unmitigated	0.0462	0.4203	0.3531	2.5200e-003		0.0320	0.0320		0.0320	0.0320		504.3992	504.3992	9.6700e-003	9.2500e-003	507.3966

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					
High School	4287.39	0.0462	0.4203	0.3531	2.5200e-003		0.0320	0.0320		0.0320	0.0320		504.3992	504.3992	9.6700e-003	9.2500e-003	507.3966
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Total		**0.0462**	**0.4203**	**0.3531**	**2.5200e-003**		**0.0320**	**0.0320**		**0.0320**	**0.0320**		**504.3992**	**504.3992**	**9.6700e-003**	**9.2500e-003**	**507.3966**

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					
High School	4.28739	0.0462	0.4203	0.3531	2.5200e-003		0.0320	0.0320		0.0320	0.0320		504.3992	504.3992	9.6700e-003	9.2500e-003	507.3966
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0462**	**0.4203**	**0.3531**	**2.5200e-003**		**0.0320**	**0.0320**		**0.0320**	**0.0320**		**504.3992**	**504.3992**	**9.6700e-003**	**9.2500e-003**	**507.3966**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.2048	1.3300e-003	0.1423	1.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		0.3008	0.3008	8.3000e-004		0.3214
Unmitigated	3.2048	1.3300e-003	0.1423	1.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		0.3008	0.3008	8.3000e-004		0.3214

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	0.2069					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.9843					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0136	1.3300e-003	0.1423	1.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		0.3008	0.3008	8.3000e-004		0.3214
Total	**3.2048**	**1.3300e-003**	**0.1423**	**1.0000e-005**		**5.1000e-004**	**5.1000e-004**		**5.1000e-004**	**5.1000e-004**		**0.3008**	**0.3008**	**8.3000e-004**		**0.3214**

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	0.2069					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.9843					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0136	1.3300e-003	0.1423	1.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		0.3008	0.3008	8.3000e-004		0.3214
Total	**3.2048**	**1.3300e-003**	**0.1423**	**1.0000e-005**		**5.1000e-004**	**5.1000e-004**		**5.1000e-004**	**5.1000e-004**		**0.3008**	**0.3008**	**8.3000e-004**		**0.3214**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

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

Damien High School Master Plan Update

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
High School	940.00	Student	2.79	199,859.00	0
Other Non-Asphalt Surfaces	19.23	Acre	19.23	837,658.80	0
Parking Lot	420.00	Space	3.78	168,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2021
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Campus is 25.8 acres, with 940 students and 75 staff members. The Master Plan total building area is 199,859 sf.

Construction Phase - Schedule based on project plans and assumes architectural coatings would be applied during the latter portions of the building construction phase.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT -

Demolition - Phase 1 demo: 5,972 sq ft building and 1 tennis court. Estimated tonnage - Phase 2 demo: 5 tennis courts & portion of parking lot north of Gymnasium. Phase 2 demo: 72 space parking lot east of the Event Center

Architectural Coating - Assume all architectural coatings comply with SCAQMD Rule 1113. Phase 1 includes 12,500sf new bldg, Phase 2 includes 46,100sf new bldg, and Phase 3 includes 14,500sf new bldg

Vehicle Trips -

Area Coating - Assume all architectural coatings comply with SCAQMD Rule 1113.

Water And Wastewater -

Construction Off-road Equipment Mitigation - Dust control measures as required by SCAQMD Rule 403.

Area Mitigation - Area Coating - Assume all architectural coatings comply with SCAQMD Rule 1113.

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	99,930.00	7,250.00
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	99,930.00	6,250.00
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	99,930.00	23,050.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	299,789.00	21,750.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	299,789.00	18,750.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	299,789.00	69,150.00
tblArchitecturalCoating	ConstArea_Parking	60,340.00	0.00
tblArchitecturalCoating	ConstArea_Parking	60,340.00	163,600.00
tblArchitecturalCoating	ConstArea_Parking	60,340.00	53,600.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00

tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	50
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblAreaCoating	Area_EF_Parking	100	50
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	35.00	65.00
tblConstructionPhase	NumDays	35.00	48.00
tblConstructionPhase	NumDays	35.00	153.00
tblConstructionPhase	NumDays	440.00	180.00
tblConstructionPhase	NumDays	440.00	1,307.00
tblConstructionPhase	NumDays	440.00	220.00
tblConstructionPhase	NumDays	30.00	20.00
tblConstructionPhase	NumDays	30.00	20.00
tblConstructionPhase	NumDays	30.00	20.00
tblConstructionPhase	NumDays	35.00	10.00
tblLandUse	LandUseSquareFeet	124,701.32	199,859.00
tblLandUse	LotAcreage	2.86	2.79

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

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

Year	tons/yr										MT/yr					
2019	0.4144	3.4369	3.2994	9.4700e-003	0.4534	0.1160	0.5695	0.1220	0.1090	0.2310	0.0000	870.9899	870.9899	0.0815	0.0000	873.0266
2020	0.8516	5.1721	5.2608	0.0159	0.7986	0.1617	0.9603	0.2148	0.1521	0.3669	0.0000	1,463.2919	1,463.2919	0.1281	0.0000	1,466.4935
2021	0.6124	5.0461	5.3515	0.0173	0.8864	0.1363	1.0226	0.2392	0.1281	0.3672	0.0000	1,592.2207	1,592.2207	0.1312	0.0000	1,595.5011
2022	0.5622	4.6425	5.0709	0.0169	0.8830	0.1155	0.9984	0.2383	0.1086	0.3468	0.0000	1,557.7952	1,557.7952	0.1270	0.0000	1,560.9707
2023	0.5097	3.8735	4.8040	0.0165	0.8830	0.0987	0.9817	0.2383	0.0928	0.3310	0.0000	1,515.2425	1,515.2425	0.1205	0.0000	1,518.2537
2024	0.5766	3.8056	4.8259	0.0168	0.9263	0.0903	1.0166	0.2498	0.0850	0.3348	0.0000	1,543.7318	1,543.7318	0.1204	0.0000	1,546.7406
2025	0.5352	3.3207	4.2525	0.0146	0.8034	0.0776	0.8810	0.2161	0.0729	0.2890	0.0000	1,338.2519	1,338.2519	0.1126	0.0000	1,341.0664
2026	0.1986	1.2298	1.5939	5.6400e-003	0.3314	0.0273	0.3587	0.0893	0.0258	0.1150	0.0000	519.1096	519.1096	0.0394	0.0000	520.0941
Maximum	**0.8516**	**5.1721**	**5.3515**	**0.0173**	**0.9263**	**0.1617**	**1.0226**	**0.2498**	**0.1521**	**0.3672**	**0.0000**	**1,592.2207**	**1,592.2207**	**0.1312**	**0.0000**	**1,595.5011**

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					
2019	0.4144	3.4369	3.2994	9.4700e-003	0.4514	0.1160	0.5675	0.1217	0.1090	0.2307	0.0000	870.9897	870.9897	0.0815	0.0000	873.0264
2020	0.8516	5.1721	5.2608	0.0159	0.7960	0.1617	0.9577	0.2144	0.1521	0.3666	0.0000	1,463.2916	1,463.2916	0.1281	0.0000	1,466.4931
2021	0.6124	5.0461	5.3515	0.0173	0.8864	0.1363	1.0226	0.2392	0.1281	0.3672	0.0000	1,592.2204	1,592.2204	0.1312	0.0000	1,595.5007
2022	0.5622	4.6425	5.0709	0.0169	0.8830	0.1155	0.9984	0.2383	0.1086	0.3468	0.0000	1,557.7948	1,557.7948	0.1270	0.0000	1,560.9703
2023	0.5097	3.8735	4.8040	0.0165	0.8830	0.0987	0.9817	0.2383	0.0928	0.3310	0.0000	1,515.2421	1,515.2421	0.1205	0.0000	1,518.2533
2024	0.5766	3.8056	4.8259	0.0168	0.9263	0.0903	1.0166	0.2498	0.0850	0.3348	0.0000	1,543.7314	1,543.7314	0.1204	0.0000	1,546.7403

2025	0.5352	3.3207	4.2525	0.0146	0.8012	0.0776	0.8787	0.2158	0.0729	0.2886	0.0000	1,338.2515	1,338.2515	0.1126	0.0000	1,341.0660
2026	0.1986	1.2298	1.5939	5.6400e-003	0.3314	0.0273	0.3587	0.0893	0.0258	0.1150	0.0000	519.1095	519.1095	0.0394	0.0000	520.0939
Maximum	**0.8516**	**5.1721**	**5.3515**	**0.0173**	**0.9263**	**0.1617**	**1.0226**	**0.2498**	**0.1521**	**0.3672**	**0.0000**	**1,592.2204**	**1,592.2204**	**0.1312**	**0.0000**	**1,595.5007**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.12**	**0.00**	**0.10**	**0.06**	**0.00**	**0.04**	**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)
4	**5-17-2019**	**8-16-2019**	1.3009	1.3009
5	**8-17-2019**	**11-16-2019**	1.7033	1.7033
6	**11-17-2019**	**2-16-2020**	1.8350	1.8350
7	**2-17-2020**	**5-16-2020**	1.0780	1.0780
8	**5-17-2020**	**8-16-2020**	1.5462	1.5462
9	**8-17-2020**	**11-16-2020**	1.5539	1.5539
10	**11-17-2020**	**2-16-2021**	1.4890	1.4890
11	**2-17-2021**	**5-16-2021**	1.3671	1.3671
12	**5-17-2021**	**8-16-2021**	1.4069	1.4069
13	**8-17-2021**	**11-16-2021**	1.4135	1.4135
14	**11-17-2021**	**2-16-2022**	1.3643	1.3643
15	**2-17-2022**	**5-16-2022**	1.2625	1.2625
16	**5-17-2022**	**8-16-2022**	1.2994	1.2994
17	**8-17-2022**	**11-16-2022**	1.3054	1.3054
18	**11-17-2022**	**2-16-2023**	1.2068	1.2068
19	**2-17-2023**	**5-16-2023**	1.0657	1.0657
20	**5-17-2023**	**8-16-2023**	1.0966	1.0966
21	**8-17-2023**	**11-16-2023**	1.1019	1.1019
22	**11-17-2023**	**2-16-2024**	1.0846	1.0846
23	**2-17-2024**	**5-16-2024**	1.0352	1.0352
24	**5-17-2024**	**8-16-2024**	1.0534	1.0534

25	**8-17-2024**	**11-16-2024**	1.1299	1.1299
26	**11-17-2024**	**2-16-2025**	1.1774	1.1774
27	**2-17-2025**	**5-16-2025**	0.9763	0.9763
28	**5-17-2025**	**8-16-2025**	0.7565	0.7565
29	**8-17-2025**	**11-16-2025**	1.0124	1.0124
30	**11-17-2025**	**2-16-2026**	1.0286	1.0286
31	**2-17-2026**	**5-16-2026**	0.8835	0.8835
		Highest	1.8350	1.8350

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	0.8422	1.6000e-004	0.0177	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0342	0.0342	9.0000e-005	0.0000	0.0365
Energy	0.0112	0.1019	0.0856	6.1000e-004		7.7400e-003	7.7400e-003		7.7400e-003	7.7400e-003	0.0000	802.6454	802.6454	0.0185	5.4100e-003	804.7202
Mobile	0.4738	2.5395	7.1214	0.0252	2.0483	0.0214	2.0697	0.5491	0.0200	0.5691	0.0000	2,325.4109	2,325.4109	0.1217	0.0000	2,328.4522
Waste						0.0000	0.0000		0.0000	0.0000	34.8231	0.0000	34.8231	2.0580	0.0000	86.2728
Water						0.0000	0.0000		0.0000	0.0000	1.3136	95.9134	97.2271	0.1372	3.6500e-003	101.7459
Total	**1.3271**	**2.6415**	**7.2246**	**0.0258**	**2.0483**	**0.0292**	**2.0775**	**0.5491**	**0.0278**	**0.5769**	**36.1367**	**3,224.0039**	**3,260.1406**	**2.3354**	**9.0600e-003**	**3,321.2275**

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	0.8422	1.6000e-004	0.0177	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0342	0.0342	9.0000e-005	0.0000	0.0365
Energy	0.0112	0.1019	0.0856	6.1000e-004		7.7400e-003	7.7400e-003		7.7400e-003	7.7400e-003	0.0000	802.6454	802.6454	0.0185	5.4100e-003	804.7202
Mobile	0.4738	2.5395	7.1214	0.0252	2.0483	0.0214	2.0697	0.5491	0.0200	0.5691	0.0000	2,325.4109	2,325.4109	0.1217	0.0000	2,328.4522
Waste						0.0000	0.0000		0.0000	0.0000	34.8231	0.0000	34.8231	2.0580	0.0000	86.2728
Water						0.0000	0.0000		0.0000	0.0000	1.3136	95.9134	97.2271	0.1372	3.6500e-003	101.7459
Total	**1.3271**	**2.6415**	**7.2246**	**0.0258**	**2.0483**	**0.0292**	**2.0775**	**0.5491**	**0.0278**	**0.5769**	**36.1367**	**3,224.0039**	**3,260.1406**	**2.3354**	**9.0600e-003**	**3,321.2275**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Phase 1 Demolition	Demolition	6/1/2019	6/28/2019	5	20	
2	Phase 1 Building Construction	Building Construction	6/29/2019	3/6/2020	5	180	
3	Phase 1 Architectural Coating	Architectural Coating	1/1/2020	3/6/2020	5	48	
4	Phase 2 Demolition	Demolition	4/1/2020	4/28/2020	5	20	
5	Phase 2 Building Construction	Building Construction	4/29/2020	5/1/2025	5	1307	
6	Phase 2 Architectural Coating	Architectural Coating	10/1/2024	5/1/2025	5	153	
7	Phase 2 Parking Lot	Paving	5/1/2025	5/14/2025	5	10	
8	Phase 3 Demolition	Demolition	6/1/2025	6/27/2025	5	20	
9	Phase 3 Building Construction	Building Construction	6/28/2025	5/1/2026	5	220	
10	Phase 3 Architectural Coating	Architectural Coating	2/1/2026	5/1/2026	5	65	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 23.01

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 18,750; Non-Residential Outdoor: 6,250; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Phase 1 Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Phase 1 Demolition	Excavators	3	8.00	158	0.38
Phase 1 Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Phase 2 Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Phase 2 Demolition	Excavators	3	8.00	158	0.38
Phase 2 Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Phase 3 Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Phase 3 Demolition	Excavators	3	8.00	158	0.38
Phase 3 Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Phase 1 Building Construction	Cranes	1	7.00	231	0.29
Phase 1 Building Construction	Forklifts	3	8.00	89	0.20
Phase 1 Building Construction	Generator Sets	1	8.00	84	0.74
Phase 1 Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Phase 1 Building Construction	Welders	1	8.00	46	0.45
Phase 2 Building Construction	Cranes	1	7.00	231	0.29
Phase 2 Building Construction	Forklifts	3	8.00	89	0.20
Phase 2 Building Construction	Generator Sets	1	8.00	84	0.74
Phase 2 Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Phase 2 Building Construction	Welders	1	8.00	46	0.45
Phase 3 Building Construction	Cranes	1	7.00	231	0.29
Phase 3 Building Construction	Forklifts	3	8.00	89	0.20
Phase 3 Building Construction	Generator Sets	1	8.00	84	0.74
Phase 3 Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Phase 3 Building Construction	Welders	1	8.00	46	0.45

Phase 2 Parking Lot	Pavers	2	8.00	130	0.42
Phase 2 Parking Lot	Paving Equipment	2	8.00	132	0.36
Phase 2 Parking Lot	Rollers	2	8.00	80	0.38
Phase 1 Architectural Coating	Air Compressors	1	6.00	78	0.48
Phase 2 Architectural Coating	Air Compressors	1	6.00	78	0.48
Phase 3 Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Phase 1 Demolition		15.00	0.00	27.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 1 Building Construction		506.00	198.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 1 Architectural Coating		101.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 2 Demolition		15.00	0.00	40.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 2 Building Construction		506.00	198.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 2 Architectural Coating		101.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 2 Parking Lot		15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 3 Demolition		15.00	0.00	35.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 3 Building Construction		506.00	198.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 3 Architectural Coating		101.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Phase 1 Demolition - 2019

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					3.2900e-003	0.0000	3.2900e-003	5.0000e-004	0.0000	5.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0351	0.3578	0.2206	3.9000e-004		0.0180	0.0180		0.0167	0.0167	0.0000	34.6263	34.6263	9.6300e-003	0.0000	34.8672
Total	**0.0351**	**0.3578**	**0.2206**	**3.9000e-004**	**3.2900e-003**	**0.0180**	**0.0212**	**5.0000e-004**	**0.0167**	**0.0172**	**0.0000**	**34.6263**	**34.6263**	**9.6300e-003**	**0.0000**	**34.8672**

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	1.3000e-004	4.2700e-003	9.1000e-004	1.0000e-005	2.3000e-004	2.0000e-005	2.5000e-004	6.0000e-005	1.0000e-005	8.0000e-005	0.0000	1.0512	1.0512	7.0000e-005	0.0000	1.0531
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	7.5000e-004	6.3000e-004	6.8100e-003	2.0000e-005	1.6400e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.5800	1.5800	5.0000e-005	0.0000	1.5814
Total	**8.8000e-004**	**4.9000e-003**	**7.7200e-003**	**3.0000e-005**	**1.8700e-003**	**3.0000e-005**	**1.9100e-003**	**5.0000e-004**	**2.0000e-005**	**5.3000e-004**	**0.0000**	**2.6313**	**2.6313**	**1.2000e-004**	**0.0000**	**2.6345**

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					1.2800e-003	0.0000	1.2800e-003	1.9000e-004	0.0000	1.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	0.0351	0.3578	0.2206	3.9000e-004		0.0180	0.0180		0.0167	0.0167	0.0000	34.6263	34.6263	9.6300e-003	0.0000	34.8671
Total	**0.0351**	**0.3578**	**0.2206**	**3.9000e-004**	**1.2800e-003**	**0.0180**	**0.0192**	**1.9000e-004**	**0.0167**	**0.0169**	**0.0000**	**34.6263**	**34.6263**	**9.6300e-003**	**0.0000**	**34.8671**

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	1.3000e-004	4.2700e-003	9.1000e-004	1.0000e-005	2.3000e-004	2.0000e-005	2.5000e-004	6.0000e-005	1.0000e-005	8.0000e-005	0.0000	1.0512	1.0512	7.0000e-005	0.0000	1.0531
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	7.5000e-004	6.3000e-004	6.8100e-003	2.0000e-005	1.6400e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.5800	1.5800	5.0000e-005	0.0000	1.5814
Total	**8.8000e-004**	**4.9000e-003**	**7.7200e-003**	**3.0000e-005**	**1.8700e-003**	**3.0000e-005**	**1.9100e-003**	**5.0000e-004**	**2.0000e-005**	**5.3000e-004**	**0.0000**	**2.6313**	**2.6313**	**1.2000e-004**	**0.0000**	**2.6345**

3.3 Phase 1 Building Construction - 2019

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	0.1558	1.3912	1.1328	1.7800e-003		0.0851	0.0851		0.0800	0.0800	0.0000	155.1688	155.1688	0.0378	0.0000	156.1138
Total	**0.1558**	**1.3912**	**1.1328**	**1.7800e-003**		**0.0851**	**0.0851**		**0.0800**	**0.0800**	**0.0000**	**155.1688**	**155.1688**	**0.0378**	**0.0000**	**156.1138**

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	0.0553	1.5436	0.4222	3.3800e-003	0.0823	9.7100e-003	0.0920	0.0238	9.2900e-003	0.0330	0.0000	326.7843	326.7843	0.0218	0.0000	327.3296
Worker	0.1673	0.1394	1.5162	3.9000e-003	0.3660	3.2200e-003	0.3692	0.0972	2.9700e-003	0.1002	0.0000	351.7792	351.7792	0.0121	0.0000	352.0816
Total	**0.2226**	**1.6830**	**1.9383**	**7.2800e-003**	**0.4483**	**0.0129**	**0.4612**	**0.1210**	**0.0123**	**0.1332**	**0.0000**	**678.5635**	**678.5635**	**0.0339**	**0.0000**	**679.4112**

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	0.1558	1.3912	1.1328	1.7800e-003		0.0851	0.0851		0.0800	0.0800	0.0000	155.1686	155.1686	0.0378	0.0000	156.1136
Total	**0.1558**	**1.3912**	**1.1328**	**1.7800e-003**		**0.0851**	**0.0851**		**0.0800**	**0.0800**	**0.0000**	**155.1686**	**155.1686**	**0.0378**	**0.0000**	**156.1136**

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	0.0553	1.5436	0.4222	3.3800e-003	0.0823	9.7100e-003	0.0920	0.0238	9.2900e-003	0.0330	0.0000	326.7843	326.7843	0.0218	0.0000	327.3296
Worker	0.1673	0.1394	1.5162	3.9000e-003	0.3660	3.2200e-003	0.3692	0.0972	2.9700e-003	0.1002	0.0000	351.7792	351.7792	0.0121	0.0000	352.0816
Total	**0.2226**	**1.6830**	**1.9383**	**7.2800e-003**	**0.4483**	**0.0129**	**0.4612**	**0.1210**	**0.0123**	**0.1332**	**0.0000**	**678.5635**	**678.5635**	**0.0339**	**0.0000**	**679.4112**

3.3 Phase 1 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	0.0509	0.4605	0.4044	6.5000e-004		0.0268	0.0268		0.0252	0.0252	0.0000	55.5864	55.5864	0.0136	0.0000	55.9254
Total	**0.0509**	**0.4605**	**0.4044**	**6.5000e-004**		**0.0268**	**0.0268**		**0.0252**	**0.0252**	**0.0000**	**55.5864**	**55.5864**	**0.0136**	**0.0000**	**55.9254**

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	0.0172	0.5150	0.1394	1.2200e-003	0.0299	2.4000e-003	0.0323	8.6400e-003	2.2900e-003	0.0109	0.0000	118.0521	118.0521	7.5000e-003	0.0000	118.2397

Worker	0.0561	0.0452	0.4999	1.3700e-003	0.1331	1.1300e-003	0.1342	0.0353	1.0500e-003	0.0364	0.0000	124.0328	124.0328	3.9100e-003	0.0000	124.1305
Total	**0.0733**	**0.5602**	**0.6393**	**2.5900e-003**	**0.1630**	**3.5300e-003**	**0.1665**	**0.0440**	**3.3400e-003**	**0.0473**	**0.0000**	**242.0849**	**242.0849**	**0.0114**	**0.0000**	**242.3702**

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	0.0509	0.4605	0.4044	6.5000e-004		0.0268	0.0268		0.0252	0.0252	0.0000	55.5863	55.5863	0.0136	0.0000	55.9254
Total	**0.0509**	**0.4605**	**0.4044**	**6.5000e-004**		**0.0268**	**0.0268**		**0.0252**	**0.0252**	**0.0000**	**55.5863**	**55.5863**	**0.0136**	**0.0000**	**55.9254**

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	0.0172	0.5150	0.1394	1.2200e-003	0.0299	2.4000e-003	0.0323	8.6400e-003	2.2900e-003	0.0109	0.0000	118.0521	118.0521	7.5000e-003	0.0000	118.2397
Worker	0.0561	0.0452	0.4999	1.3700e-003	0.1331	1.1300e-003	0.1342	0.0353	1.0500e-003	0.0364	0.0000	124.0328	124.0328	3.9100e-003	0.0000	124.1305
Total	**0.0733**	**0.5602**	**0.6393**	**2.5900e-003**	**0.1630**	**3.5300e-003**	**0.1665**	**0.0440**	**3.3400e-003**	**0.0473**	**0.0000**	**242.0849**	**242.0849**	**0.0114**	**0.0000**	**242.3702**

3.4 Phase 1 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	0.2185					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.8100e-003	0.0404	0.0440	7.0000e-005		2.6600e-003	2.6600e-003		2.6600e-003	2.6600e-003	0.0000	6.1278	6.1278	4.7000e-004	0.0000	6.1397
Total	**0.2244**	**0.0404**	**0.0440**	**7.0000e-005**		**2.6600e-003**	**2.6600e-003**		**2.6600e-003**	**2.6600e-003**	**0.0000**	**6.1278**	**6.1278**	**4.7000e-004**	**0.0000**	**6.1397**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0112	9.0200e-003	0.0998	2.7000e-004	0.0266	2.3000e-004	0.0268	7.0500e-003	2.1000e-004	7.2600e-003	0.0000	24.7575	24.7575	7.8000e-004	0.0000	24.7770
Total	**0.0112**	**9.0200e-003**	**0.0998**	**2.7000e-004**	**0.0266**	**2.3000e-004**	**0.0268**	**7.0500e-003**	**2.1000e-004**	**7.2600e-003**	**0.0000**	**24.7575**	**24.7575**	**7.8000e-004**	**0.0000**	**24.7770**

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	0.2185					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.8100e-003	0.0404	0.0440	7.0000e-005		2.6600e-003	2.6600e-003		2.6600e-003	2.6600e-003	0.0000	6.1278	6.1278	4.7000e-004	0.0000	6.1397
Total	**0.2244**	**0.0404**	**0.0440**	**7.0000e-005**		**2.6600e-003**	**2.6600e-003**		**2.6600e-003**	**2.6600e-003**	**0.0000**	**6.1278**	**6.1278**	**4.7000e-004**	**0.0000**	**6.1397**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0112	9.0200e-003	0.0998	2.7000e-004	0.0266	2.3000e-004	0.0268	7.0500e-003	2.1000e-004	7.2600e-003	0.0000	24.7575	24.7575	7.8000e-004	0.0000	24.7770
Total	**0.0112**	**9.0200e-003**	**0.0998**	**2.7000e-004**	**0.0266**	**2.3000e-004**	**0.0268**	**7.0500e-003**	**2.1000e-004**	**7.2600e-003**	**0.0000**	**24.7575**	**24.7575**	**7.8000e-004**	**0.0000**	**24.7770**

3.5 Phase 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					4.2800e-003	0.0000	4.2800e-003	6.5000e-004	0.0000	6.5000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0331	0.3320	0.2175	3.9000e-004		0.0166	0.0166		0.0154	0.0154	0.0000	33.9986	33.9986	9.6000e-003	0.0000	34.2386

Total	**0.0331**	**0.3320**	**0.2175**	**3.9000e-004**	**4.2800e-003**	**0.0166**	**0.0209**	**6.5000e-004**	**0.0154**	**0.0161**	**0.0000**	**33.9986**	**33.9986**	**9.6000e-003**	**0.0000**	**34.2386**

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	1.8000e-004	5.9400e-003	1.3100e-003	2.0000e-005	6.0000e-004	2.0000e-005	6.2000e-004	1.6000e-004	2.0000e-005	1.8000e-004	0.0000	1.5416	1.5416	1.1000e-004	0.0000	1.5443
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	6.9000e-004	5.6000e-004	6.1700e-003	2.0000e-005	3.0700e-003	1.0000e-005	3.0800e-003	7.9000e-004	1.0000e-005	8.0000e-004	0.0000	1.5320	1.5320	5.0000e-005	0.0000	1.5332
Total	**8.7000e-004**	**6.5000e-003**	**7.4800e-003**	**4.0000e-005**	**3.6700e-003**	**3.0000e-005**	**3.7000e-003**	**9.5000e-004**	**3.0000e-005**	**9.8000e-004**	**0.0000**	**3.0736**	**3.0736**	**1.6000e-004**	**0.0000**	**3.0775**

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					1.6700e-003	0.0000	1.6700e-003	2.5000e-004	0.0000	2.5000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0331	0.3320	0.2175	3.9000e-004		0.0166	0.0166		0.0154	0.0154	0.0000	33.9986	33.9986	9.6000e-003	0.0000	34.2385
Total	**0.0331**	**0.3320**	**0.2175**	**3.9000e-004**	**1.6700e-003**	**0.0166**	**0.0183**	**2.5000e-004**	**0.0154**	**0.0157**	**0.0000**	**33.9986**	**33.9986**	**9.6000e-003**	**0.0000**	**34.2385**

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	1.8000e-004	5.9400e-003	1.3100e-003	2.0000e-005	6.0000e-004	2.0000e-005	6.2000e-004	1.6000e-004	2.0000e-005	1.8000e-004	0.0000	1.5416	1.5416	1.1000e-004	0.0000	1.5443
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	6.9000e-004	5.6000e-004	6.1700e-003	2.0000e-005	3.0700e-003	1.0000e-005	3.0800e-003	7.9000e-004	1.0000e-005	8.0000e-004	0.0000	1.5320	1.5320	5.0000e-005	0.0000	1.5332
Total	**8.7000e-004**	**6.5000e-003**	**7.4800e-003**	**4.0000e-005**	**3.6700e-003**	**3.0000e-005**	**3.7000e-003**	**9.5000e-004**	**3.0000e-005**	**9.8000e-004**	**0.0000**	**3.0736**	**3.0736**	**1.6000e-004**	**0.0000**	**3.0775**

3.6 Phase 2 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	0.1876	1.6980	1.4911	2.3800e-003		0.0989	0.0989		0.0930	0.0930	0.0000	204.9748	204.9748	0.0500	0.0000	206.2250
Total	**0.1876**	**1.6980**	**1.4911**	**2.3800e-003**		**0.0989**	**0.0989**		**0.0930**	**0.0930**	**0.0000**	**204.9748**	**204.9748**	**0.0500**	**0.0000**	**206.2250**

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	0.0636	1.8989	0.5140	4.4900e-003	0.1104	8.8300e-003	0.1192	0.0319	8.4500e-003	0.0403	0.0000	435.3172	435.3172	0.0277	0.0000	436.0088
Worker	0.2067	0.1667	1.8433	5.0600e-003	0.4907	4.1800e-003	0.4949	0.1303	3.8500e-003	0.1342	0.0000	457.3710	457.3710	0.0144	0.0000	457.7313
Total	**0.2703**	**2.0656**	**2.3574**	**9.5500e-003**	**0.6011**	**0.0130**	**0.6141**	**0.1622**	**0.0123**	**0.1745**	**0.0000**	**892.6882**	**892.6882**	**0.0421**	**0.0000**	**893.7401**

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	0.1876	1.6980	1.4911	2.3800e-003		0.0989	0.0989		0.0930	0.0930	0.0000	204.9746	204.9746	0.0500	0.0000	206.2248
Total	**0.1876**	**1.6980**	**1.4911**	**2.3800e-003**		**0.0989**	**0.0989**		**0.0930**	**0.0930**	**0.0000**	**204.9746**	**204.9746**	**0.0500**	**0.0000**	**206.2248**

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	0.0636	1.8989	0.5140	4.4900e-003	0.1104	8.8300e-003	0.1192	0.0319	8.4500e-003	0.0403	0.0000	435.3172	435.3172	0.0277	0.0000	436.0088
Worker	0.2067	0.1667	1.8433	5.0600e-003	0.4907	4.1800e-003	0.4949	0.1303	3.8500e-003	0.1342	0.0000	457.3710	457.3710	0.0144	0.0000	457.7313

Total	**0.2703**	**2.0656**	**2.3574**	**9.5500e-003**	**0.6011**	**0.0130**	**0.6141**	**0.1622**	**0.0123**	**0.1745**	**0.0000**	**892.6882**	**892.6882**	**0.0421**	**0.0000**	**893.7401**

3.6 Phase 2 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**

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	0.0802	2.5500	0.6914	6.5700e-003	0.1628	5.2000e-003	0.1680	0.0470	4.9700e-003	0.0520	0.0000	636.9225	636.9225	0.0391	0.0000	637.8992
Worker	0.2841	0.2212	2.4971	7.2300e-003	0.7236	5.9600e-003	0.7296	0.1922	5.4900e-003	0.1977	0.0000	653.0116	653.0116	0.0192	0.0000	653.4920
Total	**0.3644**	**2.7712**	**3.1885**	**0.0138**	**0.8864**	**0.0112**	**0.8975**	**0.2392**	**0.0105**	**0.2496**	**0.0000**	**1,289.9341**	**1,289.9341**	**0.0583**	**0.0000**	**1,291.3912**

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**

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	0.0802	2.5500	0.6914	6.5700e-003	0.1628	5.2000e-003	0.1680	0.0470	4.9700e-003	0.0520	0.0000	636.9225	636.9225	0.0391	0.0000	637.8992
Worker	0.2841	0.2212	2.4971	7.2300e-003	0.7236	5.9600e-003	0.7296	0.1922	5.4900e-003	0.1977	0.0000	653.0116	653.0116	0.0192	0.0000	653.4920
Total	**0.3644**	**2.7712**	**3.1885**	**0.0138**	**0.8864**	**0.0112**	**0.8975**	**0.2392**	**0.0105**	**0.2496**	**0.0000**	**1,289.9341**	**1,289.9341**	**0.0583**	**0.0000**	**1,291.3912**

3.6 Phase 2 Building Construction - 2022

Unmitigated Construction On-Site

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

Off-Road	0.2218	2.0300	2.1272	3.5000e-003		0.1052	0.1052		0.0990	0.0990	0.0000	301.2428	301.2428	0.0722	0.0000	303.0471
Total	**0.2218**	**2.0300**	**2.1272**	**3.5000e-003**		**0.1052**	**0.1052**		**0.0990**	**0.0990**	**0.0000**	**301.2428**	**301.2428**	**0.0722**	**0.0000**	**303.0471**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0750	2.4134	0.6517	6.4800e-003	0.1621	4.5300e-003	0.1667	0.0468	4.3300e-003	0.0511	0.0000	628.9094	628.9094	0.0376	0.0000	629.8485
Worker	0.2654	0.1990	2.2920	6.9400e-003	0.7208	5.7600e-003	0.7266	0.1915	5.3000e-003	0.1968	0.0000	627.6430	627.6430	0.0173	0.0000	628.0752
Total	**0.3404**	**2.6125**	**2.9436**	**0.0134**	**0.8830**	**0.0103**	**0.8932**	**0.2383**	**9.6300e-003**	**0.2479**	**0.0000**	**1,256.5524**	**1,256.5524**	**0.0549**	**0.0000**	**1,257.9236**

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	0.2218	2.0300	2.1272	3.5000e-003		0.1052	0.1052		0.0990	0.0990	0.0000	301.2425	301.2425	0.0722	0.0000	303.0467
Total	**0.2218**	**2.0300**	**2.1272**	**3.5000e-003**		**0.1052**	**0.1052**		**0.0990**	**0.0990**	**0.0000**	**301.2425**	**301.2425**	**0.0722**	**0.0000**	**303.0467**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0750	2.4134	0.6517	6.4800e-003	0.1621	4.5300e-003	0.1667	0.0468	4.3300e-003	0.0511	0.0000	628.9094	628.9094	0.0376	0.0000	629.8485
Worker	0.2654	0.1990	2.2920	6.9400e-003	0.7208	5.7600e-003	0.7266	0.1915	5.3000e-003	0.1968	0.0000	627.6430	627.6430	0.0173	0.0000	628.0752
Total	**0.3404**	**2.6125**	**2.9436**	**0.0134**	**0.8830**	**0.0103**	**0.8932**	**0.2383**	**9.6300e-003**	**0.2479**	**0.0000**	**1,256.5524**	**1,256.5524**	**0.0549**	**0.0000**	**1,257.9236**

3.6 Phase 2 Building Construction - 2023

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0557	1.8234	0.5846	6.2700e-003	0.1622	2.1300e-003	0.1643	0.0468	2.0300e-003	0.0488	0.0000	609.2206	609.2206	0.0332	0.0000	610.0505
Worker	0.2496	0.1800	2.1076	6.6900e-003	0.7208	5.5900e-003	0.7264	0.1915	5.1500e-003	0.1966	0.0000	604.6757	604.6757	0.0156	0.0000	605.0649
Total	**0.3053**	**2.0034**	**2.6923**	**0.0130**	**0.8830**	**7.7200e-003**	**0.8907**	**0.2383**	**7.1800e-003**	**0.2454**	**0.0000**	**1,213.8963**	**1,213.8963**	**0.0488**	**0.0000**	**1,215.1154**

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	0.2045	1.8700	2.1117	3.5000e-003		0.0910	0.0910		0.0856	0.0856	0.0000	301.3458	301.3458	0.0717	0.0000	303.1380
Total	**0.2045**	**1.8700**	**2.1117**	**3.5000e-003**		**0.0910**	**0.0910**		**0.0856**	**0.0856**	**0.0000**	**301.3458**	**301.3458**	**0.0717**	**0.0000**	**303.1380**

Mitigated Construction Off-Site

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

Vendor	0.0557	1.8234	0.5846	6.2700e-003	0.1622	2.1300e-003	0.1643	0.0468	2.0300e-003	0.0488	0.0000	609.2206	609.2206	0.0332	0.0000	610.0505
Worker	0.2496	0.1800	2.1076	6.6900e-003	0.7208	5.5900e-003	0.7264	0.1915	5.1500e-003	0.1966	0.0000	604.6757	604.6757	0.0156	0.0000	605.0649
Total	**0.3053**	**2.0034**	**2.6923**	**0.0130**	**0.8830**	**7.7200e-003**	**0.8907**	**0.2383**	**7.1800e-003**	**0.2454**	**0.0000**	**1,213.8963**	**1,213.8963**	**0.0488**	**0.0000**	**1,215.1154**

3.6 Phase 2 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1928	1.7611	2.1179	3.5300e-003		0.0803	0.0803		0.0756	0.0756	0.0000	303.7223	303.7223	0.0718	0.0000	305.5179
Total	**0.1928**	**1.7611**	**2.1179**	**3.5300e-003**		**0.0803**	**0.0803**		**0.0756**	**0.0756**	**0.0000**	**303.7223**	**303.7223**	**0.0718**	**0.0000**	**305.5179**

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	0.0548	1.8305	0.5711	6.2900e-003	0.1634	2.1100e-003	0.1655	0.0472	2.0200e-003	0.0492	0.0000	611.4612	611.4612	0.0330	0.0000	612.2851
Worker	0.2382	0.1654	1.9778	6.5300e-003	0.7264	5.5500e-003	0.7319	0.1929	5.1100e-003	0.1980	0.0000	590.4343	590.4343	0.0144	0.0000	590.7937
Total	**0.2930**	**1.9960**	**2.5489**	**0.0128**	**0.8898**	**7.6600e-003**	**0.8974**	**0.2401**	**7.1300e-003**	**0.2472**	**0.0000**	**1,201.8955**	**1,201.8955**	**0.0473**	**0.0000**	**1,203.0788**

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	0.1928	1.7611	2.1179	3.5300e-003		0.0803	0.0803		0.0756	0.0756	0.0000	303.7220	303.7220	0.0718	0.0000	305.5175
Total	**0.1928**	**1.7611**	**2.1179**	**3.5300e-003**		**0.0803**	**0.0803**		**0.0756**	**0.0756**	**0.0000**	**303.7220**	**303.7220**	**0.0718**	**0.0000**	**305.5175**

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	0.0548	1.8305	0.5711	6.2900e-003	0.1634	2.1100e-003	0.1655	0.0472	2.0200e-003	0.0492	0.0000	611.4612	611.4612	0.0330	0.0000	612.2851
Worker	0.2382	0.1654	1.9778	6.5300e-003	0.7264	5.5500e-003	0.7319	0.1929	5.1100e-003	0.1980	0.0000	590.4343	590.4343	0.0144	0.0000	590.7937
Total	**0.2930**	**1.9960**	**2.5489**	**0.0128**	**0.8898**	**7.6600e-003**	**0.8974**	**0.2401**	**7.1300e-003**	**0.2472**	**0.0000**	**1,201.8955**	**1,201.8955**	**0.0473**	**0.0000**	**1,203.0788**

3.6 Phase 2 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0595	0.5424	0.6997	1.1700e-003		0.0230	0.0230		0.0216	0.0216	0.0000	100.8850	100.8850	0.0237	0.0000	101.4778
Total	**0.0595**	**0.5424**	**0.6997**	**1.1700e-003**		**0.0230**	**0.0230**		**0.0216**	**0.0216**	**0.0000**	**100.8850**	**100.8850**	**0.0237**	**0.0000**	**101.4778**

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	0.0177	0.6026	0.1847	2.0800e-003	0.0543	6.9000e-004	0.0550	0.0157	6.6000e-004	0.0163	0.0000	201.9361	201.9361	0.0108	0.0000	202.2057
Worker	0.0752	0.0503	0.6095	2.0800e-003	0.2412	1.8100e-003	0.2430	0.0641	1.6600e-003	0.0657	0.0000	188.4686	188.4686	4.3500e-003	0.0000	188.5774
Total	**0.0929**	**0.6529**	**0.7943**	**4.1600e-003**	**0.2955**	**2.5000e-003**	**0.2980**	**0.0797**	**2.3200e-003**	**0.0820**	**0.0000**	**390.4047**	**390.4047**	**0.0151**	**0.0000**	**390.7831**

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	0.0595	0.5424	0.6997	1.1700e-003		0.0230	0.0230		0.0216	0.0216	0.0000	100.8848	100.8848	0.0237	0.0000	101.4777

Total	**0.0595**	**0.5424**	**0.6997**	**1.1700e-003**		**0.0230**	**0.0230**		**0.0216**	**0.0216**	**0.0000**	**100.8848**	**100.8848**	**0.0237**	**0.0000**	**101.4777**

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	0.0177	0.6026	0.1847	2.0800e-003	0.0543	6.9000e-004	0.0550	0.0157	6.6000e-004	0.0163	0.0000	201.9361	201.9361	0.0108	0.0000	202.2057
Worker	0.0752	0.0503	0.6095	2.0800e-003	0.2412	1.8100e-003	0.2430	0.0641	1.6600e-003	0.0657	0.0000	188.4686	188.4686	4.3500e-003	0.0000	188.5774
Total	**0.0929**	**0.6529**	**0.7943**	**4.1600e-003**	**0.2955**	**2.5000e-003**	**0.2980**	**0.0797**	**2.3200e-003**	**0.0820**	**0.0000**	**390.4047**	**390.4047**	**0.0151**	**0.0000**	**390.7831**

3.7 Phase 2 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0729					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.9700e-003	0.0402	0.0597	1.0000e-004		2.0100e-003	2.0100e-003		2.0100e-003	2.0100e-003	0.0000	8.4257	8.4257	4.7000e-004	0.0000	8.4376
Total	**0.0789**	**0.0402**	**0.0597**	**1.0000e-004**		**2.0100e-003**	**2.0100e-003**		**2.0100e-003**	**2.0100e-003**	**0.0000**	**8.4257**	**8.4257**	**4.7000e-004**	**0.0000**	**8.4376**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0120	8.3200e-003	0.0995	3.3000e-004	0.0365	2.8000e-004	0.0368	9.7000e-003	2.6000e-004	9.9600e-003	0.0000	29.6883	29.6883	7.2000e-004	0.0000	29.7064
Total	**0.0120**	**8.3200e-003**	**0.0995**	**3.3000e-004**	**0.0365**	**2.8000e-004**	**0.0368**	**9.7000e-003**	**2.6000e-004**	**9.9600e-003**	**0.0000**	**29.6883**	**29.6883**	**7.2000e-004**	**0.0000**	**29.7064**

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	0.0729					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.9700e-003	0.0402	0.0597	1.0000e-004		2.0100e-003	2.0100e-003		2.0100e-003	2.0100e-003	0.0000	8.4257	8.4257	4.7000e-004	0.0000	8.4376
Total	**0.0789**	**0.0402**	**0.0597**	**1.0000e-004**		**2.0100e-003**	**2.0100e-003**		**2.0100e-003**	**2.0100e-003**	**0.0000**	**8.4257**	**8.4257**	**4.7000e-004**	**0.0000**	**8.4376**

Mitigated Construction Off-Site

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

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0120	8.3200e-003	0.0995	3.3000e-004	0.0365	2.8000e-004	0.0368	9.7000e-003	2.6000e-004	9.9600e-003	0.0000	29.6883	29.6883	7.2000e-004	0.0000	29.7064
Total	**0.0120**	**8.3200e-003**	**0.0995**	**3.3000e-004**	**0.0365**	**2.8000e-004**	**0.0368**	**9.7000e-003**	**2.6000e-004**	**9.9600e-003**	**0.0000**	**29.6883**	**29.6883**	**7.2000e-004**	**0.0000**	**29.7064**

3.7 Phase 2 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0961					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.4300e-003	0.0498	0.0787	1.3000e-004		2.2400e-003	2.2400e-003		2.2400e-003	2.2400e-003	0.0000	11.1067	11.1067	6.1000e-004	0.0000	11.1218
Total	**0.1035**	**0.0498**	**0.0787**	**1.3000e-004**		**2.2400e-003**	**2.2400e-003**		**2.2400e-003**	**2.2400e-003**	**0.0000**	**11.1067**	**11.1067**	**6.1000e-004**	**0.0000**	**11.1218**

Unmitigated Construction Off-Site

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

Worker	0.0150	0.0100	0.1217	4.2000e-004	0.0481	3.6000e-004	0.0485	0.0128	3.3000e-004	0.0131	0.0000	37.6192	37.6192	8.7000e-004	0.0000	37.6409
Total	**0.0150**	**0.0100**	**0.1217**	**4.2000e-004**	**0.0481**	**3.6000e-004**	**0.0485**	**0.0128**	**3.3000e-004**	**0.0131**	**0.0000**	**37.6192**	**37.6192**	**8.7000e-004**	**0.0000**	**37.6409**

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	0.0961					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.4300e-003	0.0498	0.0787	1.3000e-004		2.2400e-003	2.2400e-003		2.2400e-003	2.2400e-003	0.0000	11.1066	11.1066	6.1000e-004	0.0000	11.1218
Total	**0.1035**	**0.0498**	**0.0787**	**1.3000e-004**		**2.2400e-003**	**2.2400e-003**		**2.2400e-003**	**2.2400e-003**	**0.0000**	**11.1066**	**11.1066**	**6.1000e-004**	**0.0000**	**11.1218**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0150	0.0100	0.1217	4.2000e-004	0.0481	3.6000e-004	0.0485	0.0128	3.3000e-004	0.0131	0.0000	37.6192	37.6192	8.7000e-004	0.0000	37.6409
Total	**0.0150**	**0.0100**	**0.1217**	**4.2000e-004**	**0.0481**	**3.6000e-004**	**0.0485**	**0.0128**	**3.3000e-004**	**0.0131**	**0.0000**	**37.6192**	**37.6192**	**8.7000e-004**	**0.0000**	**37.6409**

3.8 Phase 2 Parking Lot - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.5800e-003	0.0429	0.0729	1.1000e-004		2.0900e-003	2.0900e-003		1.9300e-003	1.9300e-003	0.0000	10.0096	10.0096	3.2400e-003	0.0000	10.0906
Paving	4.9500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.5300e-003**	**0.0429**	**0.0729**	**1.1000e-004**		**2.0900e-003**	**2.0900e-003**		**1.9300e-003**	**1.9300e-003**	**0.0000**	**10.0096**	**10.0096**	**3.2400e-003**	**0.0000**	**10.0906**

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	1.7000e-004	2.0800e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.3000e-004	2.2000e-004	1.0000e-005	2.2000e-004	0.0000	0.6422	0.6422	1.0000e-005	0.0000	0.6426
Total	**2.6000e-004**	**1.7000e-004**	**2.0800e-003**	**1.0000e-005**	**8.2000e-004**	**1.0000e-005**	**8.3000e-004**	**2.2000e-004**	**1.0000e-005**	**2.2000e-004**	**0.0000**	**0.6422**	**0.6422**	**1.0000e-005**	**0.0000**	**0.6426**

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	4.5800e-003	0.0429	0.0729	1.1000e-004		2.0900e-003	2.0900e-003		1.9300e-003	1.9300e-003	0.0000	10.0096	10.0096	3.2400e-003	0.0000	10.0906
Paving	4.9500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.5300e-003**	**0.0429**	**0.0729**	**1.1000e-004**		**2.0900e-003**	**2.0900e-003**		**1.9300e-003**	**1.9300e-003**	**0.0000**	**10.0096**	**10.0096**	**3.2400e-003**	**0.0000**	**10.0906**

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	1.7000e-004	2.0800e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.3000e-004	2.2000e-004	1.0000e-005	2.2000e-004	0.0000	0.6422	0.6422	1.0000e-005	0.0000	0.6426
Total	**2.6000e-004**	**1.7000e-004**	**2.0800e-003**	**1.0000e-005**	**8.2000e-004**	**1.0000e-005**	**8.3000e-004**	**2.2000e-004**	**1.0000e-005**	**2.2000e-004**	**0.0000**	**0.6422**	**0.6422**	**1.0000e-005**	**0.0000**	**0.6426**

3.9 Phase 3 Demolition - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.7400e-003	0.0000	3.7400e-003	5.7000e-004	0.0000	5.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0209	0.1920	0.1942	3.9000e-004		8.5300e-003	8.5300e-003		7.9200e-003	7.9200e-003	0.0000	33.9977	33.9977	9.4900e-003	0.0000	34.2350

Total	**0.0209**	**0.1920**	**0.1942**	**3.9000e-004**	**3.7400e-003**	**8.5300e-003**	**0.0123**	**5.7000e-004**	**7.9200e-003**	**8.4900e-003**	**0.0000**	**33.9977**	**33.9977**	**9.4900e-003**	**0.0000**	**34.2350**

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	9.0000e-005	2.8900e-003	1.0300e-003	1.0000e-005	5.3000e-004	1.0000e-005	5.3000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	1.2506	1.2506	8.0000e-005	0.0000	1.2527
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.1000e-004	3.4000e-004	4.1500e-003	1.0000e-005	3.0700e-003	1.0000e-005	3.0800e-003	7.9000e-004	1.0000e-005	8.0000e-004	0.0000	1.2844	1.2844	3.0000e-005	0.0000	1.2851
Total	**6.0000e-004**	**3.2300e-003**	**5.1800e-003**	**2.0000e-005**	**3.6000e-003**	**2.0000e-005**	**3.6100e-003**	**9.3000e-004**	**1.0000e-005**	**9.4000e-004**	**0.0000**	**2.5350**	**2.5350**	**1.1000e-004**	**0.0000**	**2.5378**

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					1.4600e-003	0.0000	1.4600e-003	2.2000e-004	0.0000	2.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0209	0.1920	0.1942	3.9000e-004		8.5300e-003	8.5300e-003		7.9200e-003	7.9200e-003	0.0000	33.9976	33.9976	9.4900e-003	0.0000	34.2349
Total	**0.0209**	**0.1920**	**0.1942**	**3.9000e-004**	**1.4600e-003**	**8.5300e-003**	**9.9900e-003**	**2.2000e-004**	**7.9200e-003**	**8.1400e-003**	**0.0000**	**33.9976**	**33.9976**	**9.4900e-003**	**0.0000**	**34.2349**

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	9.0000e-005	2.8900e-003	1.0300e-003	1.0000e-005	5.3000e-004	1.0000e-005	5.3000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	1.2506	1.2506	8.0000e-005	0.0000	1.2527
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.1000e-004	3.4000e-004	4.1500e-003	1.0000e-005	3.0700e-003	1.0000e-005	3.0800e-003	7.9000e-004	1.0000e-005	8.0000e-004	0.0000	1.2844	1.2844	3.0000e-005	0.0000	1.2851
Total	**6.0000e-004**	**3.2300e-003**	**5.1800e-003**	**2.0000e-005**	**3.6000e-003**	**2.0000e-005**	**3.6100e-003**	**9.3000e-004**	**1.0000e-005**	**9.4000e-004**	**0.0000**	**2.5350**	**2.5350**	**1.1000e-004**	**0.0000**	**2.5378**

3.10 Phase 3 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0909	0.8292	1.0696	1.7900e-003		0.0351	0.0351		0.0330	0.0330	0.0000	154.2264	154.2264	0.0363	0.0000	155.1328
Total	**0.0909**	**0.8292**	**1.0696**	**1.7900e-003**		**0.0351**	**0.0351**		**0.0330**	**0.0330**	**0.0000**	**154.2264**	**154.2264**	**0.0363**	**0.0000**	**155.1328**

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	0.0271	0.9212	0.2824	3.1700e-003	0.0830	1.0500e-003	0.0840	0.0239	1.0100e-003	0.0250	0.0000	308.7069	308.7069	0.0165	0.0000	309.1191
Worker	0.1150	0.0768	0.9318	3.1800e-003	0.3687	2.7600e-003	0.3715	0.0979	2.5400e-003	0.1005	0.0000	288.1186	288.1186	6.6500e-003	0.0000	288.2849
Total	**0.1421**	**0.9981**	**1.2142**	**6.3500e-003**	**0.4517**	**3.8100e-003**	**0.4555**	**0.1219**	**3.5500e-003**	**0.1254**	**0.0000**	**596.8255**	**596.8255**	**0.0231**	**0.0000**	**597.4040**

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	0.0909	0.8292	1.0696	1.7900e-003		0.0351	0.0351		0.0330	0.0330	0.0000	154.2263	154.2263	0.0363	0.0000	155.1326
Total	**0.0909**	**0.8292**	**1.0696**	**1.7900e-003**		**0.0351**	**0.0351**		**0.0330**	**0.0330**	**0.0000**	**154.2263**	**154.2263**	**0.0363**	**0.0000**	**155.1326**

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	0.0271	0.9212	0.2824	3.1700e-003	0.0830	1.0500e-003	0.0840	0.0239	1.0100e-003	0.0250	0.0000	308.7069	308.7069	0.0165	0.0000	309.1191
Worker	0.1150	0.0768	0.9318	3.1800e-003	0.3687	2.7600e-003	0.3715	0.0979	2.5400e-003	0.1005	0.0000	288.1186	288.1186	6.6500e-003	0.0000	288.2849

Total	**0.1421**	**0.9981**	**1.2142**	**6.3500e-003**	**0.4517**	**3.8100e-003**	**0.4555**	**0.1219**	**3.5500e-003**	**0.1254**	**0.0000**	**596.8255**	**596.8255**	**0.0231**	**0.0000**	**597.4040**

3.10 Phase 3 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0595	0.5424	0.6997	1.1700e-003		0.0230	0.0230		0.0216	0.0216	0.0000	100.8850	100.8850	0.0237	0.0000	101.4778
Total	**0.0595**	**0.5424**	**0.6997**	**1.1700e-003**		**0.0230**	**0.0230**		**0.0216**	**0.0216**	**0.0000**	**100.8850**	**100.8850**	**0.0237**	**0.0000**	**101.4778**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0173	0.5969	0.1810	2.0600e-003	0.0543	6.8000e-004	0.0549	0.0157	6.5000e-004	0.0163	0.0000	200.8741	200.8741	0.0106	0.0000	201.1398
Worker	0.0719	0.0463	0.5696	2.0100e-003	0.2412	1.7400e-003	0.2429	0.0641	1.6100e-003	0.0657	0.0000	181.9224	181.9224	3.9900e-003	0.0000	182.0221
Total	**0.0892**	**0.6432**	**0.7505**	**4.0700e-003**	**0.2955**	**2.4200e-003**	**0.2979**	**0.0797**	**2.2600e-003**	**0.0820**	**0.0000**	**382.7965**	**382.7965**	**0.0146**	**0.0000**	**383.1619**

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	0.0595	0.5424	0.6997	1.1700e-003		0.0230	0.0230		0.0216	0.0216	0.0000	100.8848	100.8848	0.0237	0.0000	101.4777
Total	**0.0595**	**0.5424**	**0.6997**	**1.1700e-003**		**0.0230**	**0.0230**		**0.0216**	**0.0216**	**0.0000**	**100.8848**	**100.8848**	**0.0237**	**0.0000**	**101.4777**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0173	0.5969	0.1810	2.0600e-003	0.0543	6.8000e-004	0.0549	0.0157	6.5000e-004	0.0163	0.0000	200.8741	200.8741	0.0106	0.0000	201.1398
Worker	0.0719	0.0463	0.5696	2.0100e-003	0.2412	1.7400e-003	0.2429	0.0641	1.6100e-003	0.0657	0.0000	181.9224	181.9224	3.9900e-003	0.0000	182.0221
Total	**0.0892**	**0.6432**	**0.7505**	**4.0700e-003**	**0.2955**	**2.4200e-003**	**0.2979**	**0.0797**	**2.2600e-003**	**0.0820**	**0.0000**	**382.7965**	**382.7965**	**0.0146**	**0.0000**	**383.1619**

3.11 Phase 3 Architectural Coating - 2026

Unmitigated Construction On-Site

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

Archit. Coating	0.0336					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.5500e-003	0.0372	0.0588	1.0000e-004		1.6700e-003	1.6700e-003		1.6700e-003	1.6700e-003	0.0000	8.2981	8.2981	4.5000e-004	0.0000	8.3094
Total	**0.0392**	**0.0372**	**0.0588**	**1.0000e-004**		**1.6700e-003**	**1.6700e-003**		**1.6700e-003**	**1.6700e-003**	**0.0000**	**8.2981**	**8.2981**	**4.5000e-004**	**0.0000**	**8.3094**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0107	6.9000e-003	0.0849	3.0000e-004	0.0360	2.6000e-004	0.0362	9.5500e-003	2.4000e-004	9.7900e-003	0.0000	27.1301	27.1301	5.9000e-004	0.0000	27.1450
Total	**0.0107**	**6.9000e-003**	**0.0849**	**3.0000e-004**	**0.0360**	**2.6000e-004**	**0.0362**	**9.5500e-003**	**2.4000e-004**	**9.7900e-003**	**0.0000**	**27.1301**	**27.1301**	**5.9000e-004**	**0.0000**	**27.1450**

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	0.0336					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.5500e-003	0.0372	0.0588	1.0000e-004		1.6700e-003	1.6700e-003		1.6700e-003	1.6700e-003	0.0000	8.2981	8.2981	4.5000e-004	0.0000	8.3094
Total	**0.0392**	**0.0372**	**0.0588**	**1.0000e-004**		**1.6700e-003**	**1.6700e-003**		**1.6700e-003**	**1.6700e-003**	**0.0000**	**8.2981**	**8.2981**	**4.5000e-004**	**0.0000**	**8.3094**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0107	6.9000e-003	0.0849	3.0000e-004	0.0360	2.6000e-004	0.0362	9.5500e-003	2.4000e-004	9.7900e-003	0.0000	27.1301	27.1301	5.9000e-004	0.0000	27.1450
Total	**0.0107**	**6.9000e-003**	**0.0849**	**3.0000e-004**	**0.0360**	**2.6000e-004**	**0.0362**	**9.5500e-003**	**2.4000e-004**	**9.7900e-003**	**0.0000**	**27.1301**	**27.1301**	**5.9000e-004**	**0.0000**	**27.1450**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive 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	0.4738	2.5395	7.1214	0.0252	2.0483	0.0214	2.0697	0.5491	0.0200	0.5691	0.0000	2,325.4109	2,325.4109	0.1217	0.0000	2,328.4522
Unmitigated	0.4738	2.5395	7.1214	0.0252	2.0483	0.0214	2.0697	0.5491	0.0200	0.5691	0.0000	2,325.4109	2,325.4109	0.1217	0.0000	2,328.4522

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
High School	1,607.40	573.40	235.00	5,396,683	5,396,683
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	1,607.40	573.40	235.00	5,396,683	5,396,683

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
High School	16.60	8.40	6.90	77.80	17.20	5.00	75	19	6
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
High School	0.547192	0.045177	0.202743	0.121510	0.016147	0.006143	0.019743	0.029945	0.002479	0.002270	0.005078	0.000682	0.000891
Other Non-Asphalt Surfaces	0.547192	0.045177	0.202743	0.121510	0.016147	0.006143	0.019743	0.029945	0.002479	0.002270	0.005078	0.000682	0.000891
Parking Lot	0.547192	0.045177	0.202743	0.121510	0.016147	0.006143	0.019743	0.029945	0.002479	0.002270	0.005078	0.000682	0.000891

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive 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	691.7269	691.7269	0.0163	3.3800e-003	693.1426

Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	691.7269	691.7269	0.0163	3.3800e-003	693.1426
NaturalGas Mitigated	0.0112	0.1019	0.0856	6.1000e-004		7.7400e-003	7.7400e-003		7.7400e-003	7.7400e-003	0.0000	110.9185	110.9185	2.1300e-003	2.0300e-003	111.5776
NaturalGas Unmitigated	0.0112	0.1019	0.0856	6.1000e-004		7.7400e-003	7.7400e-003		7.7400e-003	7.7400e-003	0.0000	110.9185	110.9185	2.1300e-003	2.0300e-003	111.5776

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					
High School	2.07853e+006	0.0112	0.1019	0.0856	6.1000e-004		7.7400e-003	7.7400e-003		7.7400e-003	7.7400e-003	0.0000	110.9185	110.9185	2.1300e-003	2.0300e-003	111.5776
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0112**	**0.1019**	**0.0856**	**6.1000e-004**		**7.7400e-003**	**7.7400e-003**		**7.7400e-003**	**7.7400e-003**	**0.0000**	**110.9185**	**110.9185**	**2.1300e-003**	**2.0300e-003**	**111.5776**

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					
High School	2.07853e+006	0.0112	0.1019	0.0856	6.1000e-004		7.7400e-003	7.7400e-003		7.7400e-003	7.7400e-003	0.0000	110.9185	110.9185	2.1300e-003	2.0300e-003	111.5776
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0112**	**0.1019**	**0.0856**	**6.1000e-004**		**7.7400e-003**	**7.7400e-003**		**7.7400e-003**	**7.7400e-003**	**0.0000**	**110.9185**	**110.9185**	**2.1300e-003**	**2.0300e-003**	**111.5776**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
High School	1.18317e+006	658.9776	0.0156	3.2200e-003	660.3262
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	58800	32.7493	7.7000e-004	1.6000e-004	32.8164
Total		**691.7269**	**0.0163**	**3.3800e-003**	**693.1426**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
High School	1.18317e+006	658.9776	0.0156	3.2200e-003	660.3262
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	58800	32.7493	7.7000e-004	1.6000e-004	32.8164
Total		**691.7269**	**0.0163**	**3.3800e-003**	**693.1426**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	ROG	NOx	CO	SO2	Fugitive 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	0.8422	1.6000e-004	0.0177	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0342	0.0342	9.0000e-005	0.0000	0.0365
Unmitigated	0.8422	1.6000e-004	0.0177	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0342	0.0342	9.0000e-005	0.0000	0.0365

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	0.0533					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7872					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.6500e-003	1.6000e-004	0.0177	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0342	0.0342	9.0000e-005	0.0000	0.0365
Total	**0.8422**	**1.6000e-004**	**0.0177**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**	**0.0000**	**0.0342**	**0.0342**	**9.0000e-005**	**0.0000**	**0.0365**

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	0.0533					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7872					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.6500e-003	1.6000e-004	0.0177	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0342	0.0342	9.0000e-005	0.0000	0.0365
Total	**0.8422**	**1.6000e-004**	**0.0177**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**	**0.0000**	**0.0342**	**0.0342**	**9.0000e-005**	**0.0000**	**0.0365**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	97.2271	0.1372	3.6500e-003	101.7459
Unmitigated	97.2271	0.1372	3.6500e-003	101.7459

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
High School	4.14066 / 10.6474	97.2271	0.1372	3.6500e-003	101.7459
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**97.2271**	**0.1372**	**3.6500e-003**	**101.7459**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
High School	4.14066 / 10.6474	97.2271	0.1372	3.6500e-003	101.7459
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**97.2271**	**0.1372**	**3.6500e-003**	**101.7459**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	34.8231	2.0580	0.0000	86.2728
Unmitigated	34.8231	2.0580	0.0000	86.2728

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
High School	171.55	34.8231	2.0580	0.0000	86.2728
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**34.8231**	**2.0580**	**0.0000**	**86.2728**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
High School	171.55	34.8231	2.0580	0.0000	86.2728

Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**34.8231**	**2.0580**	**0.0000**	**86.2728**

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

Damien High School Master Plan Update

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
High School	940.00	Student	2.79	199,859.00	0
Other Non-Asphalt Surfaces	19.23	Acre	19.23	837,658.80	0
Parking Lot	420.00	Space	3.78	168,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2021
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Campus is 25.8 acres, with 940 students and 75 staff members. The Master Plan total building area is 199,859 sf.

Construction Phase - Schedule based on project plans and assumes architectural coatings would be applied during the latter portions of the building construction phase.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT -

Demolition - Phase 1 demo: 5,972 sq ft building and 1 tennis court. Estimated tonnage - Phase 2 demo: 5 tennis courts & portion of parking lot north of Gymnasium. Phase 2 demo: 72 space parking lot east of the Event Center

Architectural Coating - Assume all architectural coatings comply with SCAQMD Rule 1113. Phase 1 includes 12,500sf new bldg, Phase 2 includes 46,100sf new bldg, and Phase 3 includes 14,500sf new bldg

Vehicle Trips -

Area Coating - Assume all architectural coatings comply with SCAQMD Rule 1113.

Water And Wastewater -

Construction Off-road Equipment Mitigation - Dust control measures as required by SCAQMD Rule 403.

Area Mitigation - Area Coating - Assume all architectural coatings comply with SCAQMD Rule 1113.

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	99,930.00	7,250.00
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	99,930.00	6,250.00
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	99,930.00	23,050.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	299,789.00	21,750.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	299,789.00	18,750.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	299,789.00	69,150.00
tblArchitecturalCoating	ConstArea_Parking	60,340.00	0.00
tblArchitecturalCoating	ConstArea_Parking	60,340.00	163,600.00
tblArchitecturalCoating	ConstArea_Parking	60,340.00	53,600.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00

tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	50
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblAreaCoating	Area_EF_Parking	100	50
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	35.00	65.00
tblConstructionPhase	NumDays	35.00	48.00
tblConstructionPhase	NumDays	35.00	153.00
tblConstructionPhase	NumDays	440.00	180.00
tblConstructionPhase	NumDays	440.00	1,307.00
tblConstructionPhase	NumDays	440.00	220.00
tblConstructionPhase	NumDays	30.00	20.00
tblConstructionPhase	NumDays	30.00	20.00
tblConstructionPhase	NumDays	30.00	20.00
tblConstructionPhase	NumDays	35.00	10.00
tblLandUse	LandUseSquareFeet	124,701.32	199,859.00
tblLandUse	LotAcreage	2.86	2.79

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

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

Year	lb/day										lb/day					
2019	6.0214	46.0813	46.2549	0.1353	6.9235	1.7979	8.4106	1.8649	1.6725	3.2646	0.0000	13,742.0489	13,742.0489	1.2075	0.0000	13,772.2357
2020	15.3060	44.1275	49.1075	0.1474	8.0524	1.6620	9.4378	2.1643	1.5449	3.4742	0.0000	14,891.6443	14,891.6443	1.2133	0.0000	14,921.9762
2021	4.9455	38.2664	40.7682	0.1309	6.9235	1.0449	7.9684	1.8649	0.9822	2.8471	0.0000	13,272.3958	13,272.3958	1.1174	0.0000	13,300.3307
2022	4.5654	35.3377	38.7880	0.1285	6.9235	0.8888	7.8123	1.8650	0.8359	2.7008	0.0000	13,035.6666	13,035.6666	1.0858	0.0000	13,062.8118
2023	4.1483	29.5411	36.6954	0.1250	6.9236	0.7596	7.6832	1.8650	0.7141	2.5791	0.0000	12,682.0939	12,682.0939	1.0279	0.0000	12,707.7915
2024	6.7208	29.8956	40.1289	0.1360	8.0525	0.7416	8.7942	2.1644	0.7005	2.8648	0.0000	13,763.3382	13,763.3382	1.0487	0.0000	13,789.5564
2025	8.4431	37.2210	53.6412	0.1576	8.2202	1.0649	9.2851	2.2089	0.9953	3.2042	0.0000	15,856.0305	15,856.0305	1.7448	0.0000	15,899.6510
2026	5.1978	28.3729	37.4947	0.1312	8.0526	0.6431	8.6957	2.1644	0.6072	2.7716	0.0000	13,288.2537	13,288.2537	1.0128	0.0000	13,313.5732
Maximum	**15.3060**	**46.0813**	**53.6412**	**0.1576**	**8.2202**	**1.7979**	**9.4378**	**2.2089**	**1.6725**	**3.4742**	**0.0000**	**15,856.0305**	**15,856.0305**	**1.7448**	**0.0000**	**15,899.6510**

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					
2019	6.0214	46.0813	46.2549	0.1353	6.9235	1.7979	8.4106	1.8649	1.6725	3.2646	0.0000	13,742.0489	13,742.0489	1.2075	0.0000	13,772.2357
2020	15.3060	44.1275	49.1075	0.1474	8.0524	1.6620	9.4378	2.1643	1.5449	3.4742	0.0000	14,891.6443	14,891.6443	1.2133	0.0000	14,921.9762
2021	4.9455	38.2664	40.7682	0.1309	6.9235	1.0449	7.9684	1.8649	0.9822	2.8471	0.0000	13,272.3958	13,272.3958	1.1174	0.0000	13,300.3307
2022	4.5654	35.3377	38.7880	0.1285	6.9235	0.8888	7.8123	1.8650	0.8359	2.7008	0.0000	13,035.6666	13,035.6666	1.0858	0.0000	13,062.8118
2023	4.1483	29.5411	36.6954	0.1250	6.9236	0.7596	7.6832	1.8650	0.7141	2.5791	0.0000	12,682.0939	12,682.0939	1.0279	0.0000	12,707.7915
2024	6.7208	29.8956	40.1289	0.1360	8.0525	0.7416	8.7942	2.1644	0.7005	2.8648	0.0000	13,763.3382	13,763.3382	1.0487	0.0000	13,789.5564

2025	8.4431	37.2210	53.6412	0.1576	8.2202	1.0649	9.2851	2.2089	0.9953	3.2042	0.0000	15,856.0305	15,856.0305	1.7448	0.0000	15,899.6510
2026	5.1978	28.3729	37.4947	0.1312	8.0526	0.6431	8.6957	2.1644	0.6072	2.7716	0.0000	13,288.2537	13,288.2537	1.0128	0.0000	13,313.5732
Maximum	**15.3060**	**46.0813**	**53.6412**	**0.1576**	**8.2202**	**1.7979**	**9.4378**	**2.2089**	**1.6725**	**3.4742**	**0.0000**	**15,856.0305**	**15,856.0305**	**1.7448**	**0.0000**	**15,899.6510**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.6187	1.3000e-003	0.1414	1.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		0.3019	0.3019	8.0000e-004		0.3219
Energy	0.0614	0.5583	0.4690	3.3500e-003		0.0424	0.0424		0.0424	0.0424		669.9544	669.9544	0.0128	0.0123	673.9356
Mobile	3.3765	17.4173	48.9581	0.1738	14.5976	0.1502	14.7478	3.9067	0.1402	4.0469		17,675.9784	17,675.9784	0.9389		17,699.4516
Total	**8.0567**	**17.9769**	**49.5684**	**0.1772**	**14.5976**	**0.1931**	**14.7907**	**3.9067**	**0.1832**	**4.0899**		**18,346.2346**	**18,346.2346**	**0.9526**	**0.0123**	**18,373.7091**

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	4.6187	1.3000e-003	0.1414	1.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		0.3019	0.3019	8.0000e-004		0.3219

Energy	0.0614	0.5583	0.4690	3.3500e-003		0.0424	0.0424		0.0424	0.0424		669.9544	669.9544	0.0128	0.0123	673.9356
Mobile	3.3765	17.4173	48.9581	0.1738	14.5976	0.1502	14.7478	3.9067	0.1402	4.0469		17,675.9784	17,675.9784	0.9389		17,699.4516
Total	**8.0567**	**17.9769**	**49.5684**	**0.1772**	**14.5976**	**0.1931**	**14.7907**	**3.9067**	**0.1832**	**4.0899**		**18,346.2346**	**18,346.2346**	**0.9526**	**0.0123**	**18,373.7091**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Phase 1 Demolition	Demolition	6/1/2019	6/28/2019	5	20	
2	Phase 1 Building Construction	Building Construction	6/29/2019	3/6/2020	5	180	
3	Phase 1 Architectural Coating	Architectural Coating	1/1/2020	3/6/2020	5	48	
4	Phase 2 Demolition	Demolition	4/1/2020	4/28/2020	5	20	
5	Phase 2 Building Construction	Building Construction	4/29/2020	5/1/2025	5	1307	
6	Phase 2 Architectural Coating	Architectural Coating	10/1/2024	5/1/2025	5	153	
7	Phase 2 Parking Lot	Paving	5/1/2025	5/14/2025	5	10	
8	Phase 3 Demolition	Demolition	6/1/2025	6/27/2025	5	20	
9	Phase 3 Building Construction	Building Construction	6/28/2025	5/1/2026	5	220	
10	Phase 3 Architectural Coating	Architectural Coating	2/1/2026	5/1/2026	5	65	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 23.01

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 18,750; Non-Residential Outdoor: 6,250; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Phase 1 Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Phase 1 Demolition	Excavators	3	8.00	158	0.38
Phase 1 Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Phase 2 Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Phase 2 Demolition	Excavators	3	8.00	158	0.38
Phase 2 Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Phase 3 Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Phase 3 Demolition	Excavators	3	8.00	158	0.38
Phase 3 Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Phase 1 Building Construction	Cranes	1	7.00	231	0.29
Phase 1 Building Construction	Forklifts	3	8.00	89	0.20
Phase 1 Building Construction	Generator Sets	1	8.00	84	0.74
Phase 1 Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Phase 1 Building Construction	Welders	1	8.00	46	0.45
Phase 2 Building Construction	Cranes	1	7.00	231	0.29
Phase 2 Building Construction	Forklifts	3	8.00	89	0.20
Phase 2 Building Construction	Generator Sets	1	8.00	84	0.74
Phase 2 Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Phase 2 Building Construction	Welders	1	8.00	46	0.45
Phase 3 Building Construction	Cranes	1	7.00	231	0.29
Phase 3 Building Construction	Forklifts	3	8.00	89	0.20
Phase 3 Building Construction	Generator Sets	1	8.00	84	0.74
Phase 3 Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Phase 3 Building Construction	Welders	1	8.00	46	0.45
Phase 2 Parking Lot	Pavers	2	8.00	130	0.42
Phase 2 Parking Lot	Paving Equipment	2	8.00	132	0.36
Phase 2 Parking Lot	Rollers	2	8.00	80	0.38
Phase 1 Architectural Coating	Air Compressors	1	6.00	78	0.48
Phase 2 Architectural Coating	Air Compressors	1	6.00	78	0.48

Phase 3 Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Phase 1 Demolition		15.00	0.00	27.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 1 Building Construction		506.00	198.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 1 Architectural Coating		101.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 2 Demolition		15.00	0.00	40.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 2 Building Construction		506.00	198.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 2 Architectural Coating		101.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 2 Parking Lot		15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 3 Demolition		15.00	0.00	35.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 3 Building Construction		506.00	198.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 3 Architectural Coating		101.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Phase 1 Demolition - 2019

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					0.3294	0.0000	0.3294	0.0499	0.0000	0.0499			0.0000			0.0000
Off-Road	3.5134	35.7830	22.0600	0.0388		1.7949	1.7949		1.6697	1.6697		3,816.8994	3,816.8994	1.0618		3,843.4451

Total	**3.5134**	**35.7830**	**22.0600**	**0.0388**	**0.3294**	**1.7949**	**2.1243**	**0.0499**	**1.6697**	**1.7195**		**3,816.8994**	**3,816.8994**	**1.0618**		**3,843.4451**

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	0.0130	0.4190	0.0941	1.0600e-003	0.0236	1.5500e-003	0.0252	6.4700e-003	1.4800e-003	7.9500e-003		114.7297	114.7297	8.3400e-003		114.9383
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	0.0831	0.0610	0.6637	1.7200e-003	0.1677	1.4500e-003	0.1691	0.0445	1.3300e-003	0.0458		171.3196	171.3196	5.8900e-003		171.4670
Total	**0.0961**	**0.4800**	**0.7578**	**2.7800e-003**	**0.1913**	**3.0000e-003**	**0.1943**	**0.0509**	**2.8100e-003**	**0.0538**		**286.0493**	**286.0493**	**0.0142**		**286.4053**

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					0.1285	0.0000	0.1285	0.0195	0.0000	0.0195			0.0000			0.0000
Off-Road	3.5134	35.7830	22.0600	0.0388		1.7949	1.7949		1.6697	1.6697	0.0000	3,816.8994	3,816.8994	1.0618		3,843.4451
Total	**3.5134**	**35.7830**	**22.0600**	**0.0388**	**0.1285**	**1.7949**	**1.9234**	**0.0195**	**1.6697**	**1.6891**	**0.0000**	**3,816.8994**	**3,816.8994**	**1.0618**		**3,843.4451**

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	0.0130	0.4190	0.0941	1.0600e-003	0.0236	1.5500e-003	0.0252	6.4700e-003	1.4800e-003	7.9500e-003		114.7297	114.7297	8.3400e-003		114.9383
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	0.0831	0.0610	0.6637	1.7200e-003	0.1677	1.4500e-003	0.1691	0.0445	1.3300e-003	0.0458		171.3196	171.3196	5.8900e-003		171.4670
Total	**0.0961**	**0.4800**	**0.7578**	**2.7800e-003**	**0.1913**	**3.0000e-003**	**0.1943**	**0.0509**	**2.8100e-003**	**0.0538**		**286.0493**	**286.0493**	**0.0142**		**286.4053**

3.3 Phase 1 Building Construction - 2019

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	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127		2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**		**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

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	0.8581	22.9452	6.7019	0.0504	1.2676	0.1485	1.4161	0.3650	0.1421	0.5070		5,371.2868	5,371.2868	0.3773		5,380.7200
Worker	2.8021	2.0573	22.3893	0.0581	5.6559	0.0488	5.7047	1.5000	0.0449	1.5449		5,779.1819	5,779.1819	0.1988		5,784.1522
Total	**3.6602**	**25.0025**	**29.0912**	**0.1084**	**6.9235**	**0.1973**	**7.1207**	**1.8649**	**0.1870**	**2.0519**		**11,150.4687**	**11,150.4687**	**0.5761**		**11,164.8722**

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	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127	0.0000	2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**	**0.0000**	**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

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	0.8581	22.9452	6.7019	0.0504	1.2676	0.1485	1.4161	0.3650	0.1421	0.5070		5,371.2868	5,371.2868	0.3773		5,380.7200
Worker	2.8021	2.0573	22.3893	0.0581	5.6559	0.0488	5.7047	1.5000	0.0449	1.5449		5,779.1819	5,779.1819	0.1988		5,784.1522

Total	**3.6602**	**25.0025**	**29.0912**	**0.1084**	**6.9235**	**0.1973**	**7.1207**	**1.8649**	**0.1870**	**2.0519**		**11,150.4687**	**11,150.4687**	**0.5761**		**11,164.8722**

3.3 Phase 1 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**

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	0.7362	21.0574	6.0862	0.0500	1.2676	0.1007	1.3683	0.3650	0.0963	0.4613		5,335.0915	5,335.0915	0.3568		5,344.0103
Worker	2.5858	1.8341	20.2912	0.0563	5.6559	0.0473	5.7032	1.5000	0.0436	1.5435		5,603.5472	5,603.5472	0.1766		5,607.9626
Total	**3.3220**	**22.8915**	**26.3774**	**0.1062**	**6.9235**	**0.1480**	**7.0715**	**1.8649**	**0.1399**	**2.0048**		**10,938.6386**	**10,938.6386**	**0.5334**		**10,951.9729**

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**

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	0.7362	21.0574	6.0862	0.0500	1.2676	0.1007	1.3683	0.3650	0.0963	0.4613		5,335.0915	5,335.0915	0.3568		5,344.0103
Worker	2.5858	1.8341	20.2912	0.0563	5.6559	0.0473	5.7032	1.5000	0.0436	1.5435		5,603.5472	5,603.5472	0.1766		5,607.9626
Total	**3.3220**	**22.8915**	**26.3774**	**0.1062**	**6.9235**	**0.1480**	**7.0715**	**1.8649**	**0.1399**	**2.0048**		**10,938.6386**	**10,938.6386**	**0.5334**		**10,951.9729**

3.4 Phase 1 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	9.1058					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	**9.3480**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

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	0.5161	0.3661	4.0502	0.0112	1.1289	9.4400e-003	1.1384	0.2994	8.6900e-003	0.3081		1,118.4946	1,118.4946	0.0353		1,119.3759
Total	**0.5161**	**0.3661**	**4.0502**	**0.0112**	**1.1289**	**9.4400e-003**	**1.1384**	**0.2994**	**8.6900e-003**	**0.3081**		**1,118.4946**	**1,118.4946**	**0.0353**		**1,119.3759**

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	9.1058					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	**9.3480**	**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**

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	0.5161	0.3661	4.0502	0.0112	1.1289	9.4400e-003	1.1384	0.2994	8.6900e-003	0.3081		1,118.4946	1,118.4946	0.0353		1,119.3759
Total	**0.5161**	**0.3661**	**4.0502**	**0.0112**	**1.1289**	**9.4400e-003**	**1.1384**	**0.2994**	**8.6900e-003**	**0.3081**		**1,118.4946**	**1,118.4946**	**0.0353**		**1,119.3759**

3.5 Phase 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					0.4280	0.0000	0.4280	0.0648	0.0000	0.0648			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**	**0.4280**	**1.6587**	**2.0867**	**0.0648**	**1.5419**	**1.6067**		**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

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	0.0179	0.5825	0.1354	1.5500e-003	0.0614	1.8600e-003	0.0633	0.0161	1.7800e-003	0.0179		168.2188	168.2188	0.0121		168.5207
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	0.0767	0.0544	0.6015	1.6700e-003	0.3134	1.4000e-003	0.3148	0.0802	1.2900e-003	0.0815		166.1131	166.1131	5.2400e-003		166.2440
Total	**0.0945**	**0.6369**	**0.7370**	**3.2200e-003**	**0.3748**	**3.2600e-003**	**0.3781**	**0.0963**	**3.0700e-003**	**0.0994**		**334.3319**	**334.3319**	**0.0173**		**334.7646**

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					0.1669	0.0000	0.1669	0.0253	0.0000	0.0253			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**	**0.1669**	**1.6587**	**1.8256**	**0.0253**	**1.5419**	**1.5671**	**0.0000**	**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

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	0.0179	0.5825	0.1354	1.5500e-003	0.0614	1.8600e-003	0.0633	0.0161	1.7800e-003	0.0179		168.2188	168.2188	0.0121		168.5207

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	0.0767	0.0544	0.6015	1.6700e-003	0.3134	1.4000e-003	0.3148	0.0802	1.2900e-003	0.0815		166.1131	166.1131	5.2400e-003		166.2440
Total	**0.0945**	**0.6369**	**0.7370**	**3.2200e-003**	**0.3748**	**3.2600e-003**	**0.3781**	**0.0963**	**3.0700e-003**	**0.0994**		**334.3319**	**334.3319**	**0.0173**		**334.7646**

3.6 Phase 2 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**

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	0.7362	21.0574	6.0862	0.0500	1.2676	0.1007	1.3683	0.3650	0.0963	0.4613		5,335.0915	5,335.0915	0.3568		5,344.0103
Worker	2.5858	1.8341	20.2912	0.0563	5.6559	0.0473	5.7032	1.5000	0.0436	1.5435		5,603.5472	5,603.5472	0.1766		5,607.9626
Total	**3.3220**	**22.8915**	**26.3774**	**0.1062**	**6.9235**	**0.1480**	**7.0715**	**1.8649**	**0.1399**	**2.0048**		**10,938.6386**	**10,938.6386**	**0.5334**		**10,951.9729**

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**

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	0.7362	21.0574	6.0862	0.0500	1.2676	0.1007	1.3683	0.3650	0.0963	0.4613		5,335.0915	5,335.0915	0.3568		5,344.0103
Worker	2.5858	1.8341	20.2912	0.0563	5.6559	0.0473	5.7032	1.5000	0.0436	1.5435		5,603.5472	5,603.5472	0.1766		5,607.9626
Total	**3.3220**	**22.8915**	**26.3774**	**0.1062**	**6.9235**	**0.1480**	**7.0715**	**1.8649**	**0.1399**	**2.0048**		**10,938.6386**	**10,938.6386**	**0.5334**		**10,951.9729**

3.6 Phase 2 Building Construction - 2021

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.6318	19.1840	5.5592	0.0495	1.2676	0.0406	1.3082	0.3650	0.0388	0.4038		5,293.4414	5,293.4414	0.3417		5,301.9846
Worker	2.4127	1.6503	18.6337	0.0545	5.6559	0.0457	5.7016	1.5000	0.0421	1.5421		5,425.5905	5,425.5905	0.1597		5,429.5819
Total	**3.0445**	**20.8343**	**24.1930**	**0.1040**	**6.9235**	**0.0863**	**7.0098**	**1.8649**	**0.0809**	**1.9458**		**10,719.0319**	**10,719.0319**	**0.5014**		**10,731.5665**

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**

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	0.6318	19.1840	5.5592	0.0495	1.2676	0.0406	1.3082	0.3650	0.0388	0.4038		5,293.4414	5,293.4414	0.3417		5,301.9846
Worker	2.4127	1.6503	18.6337	0.0545	5.6559	0.0457	5.7016	1.5000	0.0421	1.5421		5,425.5905	5,425.5905	0.1597		5,429.5819
Total	**3.0445**	**20.8343**	**24.1930**	**0.1040**	**6.9235**	**0.0863**	**7.0098**	**1.8649**	**0.0809**	**1.9458**		**10,719.0319**	**10,719.0319**	**0.5014**		**10,731.5665**

3.6 Phase 2 Building Construction - 2022

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.5931	18.2317	5.2622	0.0491	1.2677	0.0355	1.3031	0.3650	0.0339	0.3989		5,246.4115	5,246.4115	0.3297		5,254.6546
Worker	2.2661	1.4904	17.1623	0.0525	5.6559	0.0443	5.7002	1.5000	0.0408	1.5408		5,234.9214	5,234.9214	0.1441		5,238.5250
Total	**2.8592**	**19.7221**	**22.4246**	**0.1016**	**6.9235**	**0.0798**	**7.0033**	**1.8650**	**0.0747**	**1.9397**		**10,481.3330**	**10,481.3330**	**0.4739**		**10,493.1796**

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**

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	0.5931	18.2317	5.2622	0.0491	1.2677	0.0355	1.3031	0.3650	0.0339	0.3989		5,246.4115	5,246.4115	0.3297		5,254.6546
Worker	2.2661	1.4904	17.1623	0.0525	5.6559	0.0443	5.7002	1.5000	0.0408	1.5408		5,234.9214	5,234.9214	0.1441		5,238.5250
Total	**2.8592**	**19.7221**	**22.4246**	**0.1016**	**6.9235**	**0.0798**	**7.0033**	**1.8650**	**0.0747**	**1.9397**		**10,481.3330**	**10,481.3330**	**0.4739**		**10,493.1796**

3.6 Phase 2 Building Construction - 2023

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4407	13.8083	4.6760	0.0475	1.2677	0.0169	1.2845	0.3650	0.0161	0.3811		5,083.4779	5,083.4779	0.2903		5,090.7346

Worker	2.1349	1.3480	15.7754	0.0506	5.6559	0.0430	5.6989	1.5000	0.0396	1.5396		5,043.4061	5,043.4061	0.1298		5,046.6509
Total	**2.5755**	**15.1562**	**20.4514**	**0.0981**	**6.9236**	**0.0599**	**6.9834**	**1.8650**	**0.0557**	**1.9207**		**10,126.8840**	**10,126.8840**	**0.4201**		**10,137.3855**

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	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4407	13.8083	4.6760	0.0475	1.2677	0.0169	1.2845	0.3650	0.0161	0.3811		5,083.4779	5,083.4779	0.2903		5,090.7346
Worker	2.1349	1.3480	15.7754	0.0506	5.6559	0.0430	5.6989	1.5000	0.0396	1.5396		5,043.4061	5,043.4061	0.1298		5,046.6509
Total	**2.5755**	**15.1562**	**20.4514**	**0.0981**	**6.9236**	**0.0599**	**6.9834**	**1.8650**	**0.0557**	**1.9207**		**10,126.8840**	**10,126.8840**	**0.4201**		**10,137.3855**

3.6 Phase 2 Building Construction - 2024

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4298	13.7587	4.5342	0.0473	1.2677	0.0166	1.2843	0.3650	0.0158	0.3808		5,063.7623	5,063.7623	0.2859		5,070.9090
Worker	2.0259	1.2290	14.6863	0.0490	5.6559	0.0424	5.6983	1.5000	0.0390	1.5390		4,886.9671	4,886.9671	0.1189		4,889.9402
Total	**2.4557**	**14.9877**	**19.2205**	**0.0963**	**6.9236**	**0.0590**	**6.9826**	**1.8650**	**0.0549**	**1.9198**		**9,950.7294**	**9,950.7294**	**0.4048**		**9,960.8492**

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	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4298	13.7587	4.5342	0.0473	1.2677	0.0166	1.2843	0.3650	0.0158	0.3808		5,063.7623	5,063.7623	0.2859		5,070.9090
Worker	2.0259	1.2290	14.6863	0.0490	5.6559	0.0424	5.6983	1.5000	0.0390	1.5390		4,886.9671	4,886.9671	0.1189		4,889.9402
Total	**2.4557**	**14.9877**	**19.2205**	**0.0963**	**6.9236**	**0.0590**	**6.9826**	**1.8650**	**0.0549**	**1.9198**		**9,950.7294**	**9,950.7294**	**0.4048**		**9,960.8492**

3.6 Phase 2 Building Construction - 2025

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4188	13.6422	4.4184	0.0470	1.2677	0.0162	1.2840	0.3650	0.0155	0.3805		5,036.6101	5,036.6101	0.2816		5,043.6494
Worker	1.9297	1.1242	13.6270	0.0471	5.6559	0.0415	5.6974	1.5000	0.0382	1.5382		4,697.7892	4,697.7892	0.1084		4,700.4991
Total	**2.3485**	**14.7664**	**18.0454**	**0.0941**	**6.9236**	**0.0578**	**6.9814**	**1.8650**	**0.0537**	**1.9187**		**9,734.3994**	**9,734.3994**	**0.3900**		**9,744.1485**

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4188	13.6422	4.4184	0.0470	1.2677	0.0162	1.2840	0.3650	0.0155	0.3805		5,036.6101	5,036.6101	0.2816		5,043.6494
Worker	1.9297	1.1242	13.6270	0.0471	5.6559	0.0415	5.6974	1.5000	0.0382	1.5382		4,697.7892	4,697.7892	0.1084		4,700.4991
Total	**2.3485**	**14.7664**	**18.0454**	**0.0941**	**6.9236**	**0.0578**	**6.9814**	**1.8650**	**0.0537**	**1.9187**		**9,734.3994**	**9,734.3994**	**0.3900**		**9,744.1485**

3.7 Phase 2 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	2.2084					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**2.3892**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

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	0.4044	0.2453	2.9315	9.7800e-003	1.1289	8.4600e-003	1.1374	0.2994	7.7900e-003	0.3072		975.4618	975.4618	0.0237		976.0553
Total	**0.4044**	**0.2453**	**2.9315**	**9.7800e-003**	**1.1289**	**8.4600e-003**	**1.1374**	**0.2994**	**7.7900e-003**	**0.3072**		**975.4618**	**975.4618**	**0.0237**		**976.0553**

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	2.2084					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**2.3892**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

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	0.4044	0.2453	2.9315	9.7800e-003	1.1289	8.4600e-003	1.1374	0.2994	7.7900e-003	0.3072		975.4618	975.4618	0.0237		976.0553

Total	**0.4044**	**0.2453**	**2.9315**	**9.7800e-003**	**1.1289**	**8.4600e-003**	**1.1374**	**0.2994**	**7.7900e-003**	**0.3072**		**975.4618**	**975.4618**	**0.0237**		**976.0553**

3.7 Phase 2 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	2.2084					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**2.3793**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.3852	0.2244	2.7200	9.4000e-003	1.1289	8.2900e-003	1.1372	0.2994	7.6300e-003	0.3070		937.7010	937.7010	0.0216		938.2419
Total	**0.3852**	**0.2244**	**2.7200**	**9.4000e-003**	**1.1289**	**8.2900e-003**	**1.1372**	**0.2994**	**7.6300e-003**	**0.3070**		**937.7010**	**937.7010**	**0.0216**		**938.2419**

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	2.2084					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**2.3793**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.3852	0.2244	2.7200	9.4000e-003	1.1289	8.2900e-003	1.1372	0.2994	7.6300e-003	0.3070		937.7010	937.7010	0.0216		938.2419
Total	**0.3852**	**0.2244**	**2.7200**	**9.4000e-003**	**1.1289**	**8.2900e-003**	**1.1372**	**0.2994**	**7.6300e-003**	**0.3070**		**937.7010**	**937.7010**	**0.0216**		**938.2419**

3.8 Phase 2 Parking Lot - 2025

Unmitigated Construction On-Site

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

Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850		2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	0.9904					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9055**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**		**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0572	0.0333	0.4040	1.4000e-003	0.1677	1.2300e-003	0.1689	0.0445	1.1300e-003	0.0456		139.2625	139.2625	3.2100e-003		139.3429
Total	**0.0572**	**0.0333**	**0.4040**	**1.4000e-003**	**0.1677**	**1.2300e-003**	**0.1689**	**0.0445**	**1.1300e-003**	**0.0456**		**139.2625**	**139.2625**	**3.2100e-003**		**139.3429**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850	0.0000	2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	0.9904					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9055**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**	**0.0000**	**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0572	0.0333	0.4040	1.4000e-003	0.1677	1.2300e-003	0.1689	0.0445	1.1300e-003	0.0456		139.2625	139.2625	3.2100e-003		139.3429
Total	**0.0572**	**0.0333**	**0.4040**	**1.4000e-003**	**0.1677**	**1.2300e-003**	**0.1689**	**0.0445**	**1.1300e-003**	**0.0456**		**139.2625**	**139.2625**	**3.2100e-003**		**139.3429**

3.9 Phase 3 Demolition - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3745	0.0000	0.3745	0.0567	0.0000	0.0567			0.0000			0.0000
Off-Road	2.0926	19.1966	19.4184	0.0388		0.8528	0.8528		0.7920	0.7920		3,747.5996	3,747.5996	1.0464		3,773.7606
Total	**2.0926**	**19.1966**	**19.4184**	**0.0388**	**0.3745**	**0.8528**	**1.2272**	**0.0567**	**0.7920**	**0.8487**		**3,747.5996**	**3,747.5996**	**1.0464**		**3,773.7606**

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	9.3100e-003	0.2837	0.1054	1.2500e-003	0.0537	5.2000e-004	0.0543	0.0141	5.0000e-004	0.0146		136.4731	136.4731	9.4600e-003		136.7095
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	0.0572	0.0333	0.4040	1.4000e-003	0.3134	1.2300e-003	0.3147	0.0802	1.1300e-003	0.0814		139.2625	139.2625	3.2100e-003		139.3429
Total	**0.0665**	**0.3170**	**0.5094**	**2.6500e-003**	**0.3672**	**1.7500e-003**	**0.3689**	**0.0943**	**1.6300e-003**	**0.0960**		**275.7356**	**275.7356**	**0.0127**		**276.0523**

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					0.1461	0.0000	0.1461	0.0221	0.0000	0.0221			0.0000			0.0000
Off-Road	2.0926	19.1966	19.4184	0.0388		0.8528	0.8528		0.7920	0.7920	0.0000	3,747.5996	3,747.5996	1.0464		3,773.7606
Total	**2.0926**	**19.1966**	**19.4184**	**0.0388**	**0.1461**	**0.8528**	**0.9988**	**0.0221**	**0.7920**	**0.8141**	**0.0000**	**3,747.5996**	**3,747.5996**	**1.0464**		**3,773.7606**

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	9.3100e-003	0.2837	0.1054	1.2500e-003	0.0537	5.2000e-004	0.0543	0.0141	5.0000e-004	0.0146		136.4731	136.4731	9.4600e-003		136.7095

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	0.0572	0.0333	0.4040	1.4000e-003	0.3134	1.2300e-003	0.3147	0.0802	1.1300e-003	0.0814		139.2625	139.2625	3.2100e-003		139.3429
Total	**0.0665**	**0.3170**	**0.5094**	**2.6500e-003**	**0.3672**	**1.7500e-003**	**0.3689**	**0.0943**	**1.6300e-003**	**0.0960**		**275.7356**	**275.7356**	**0.0127**		**276.0523**

3.10 Phase 3 Building Construction - 2025

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4188	13.6422	4.4184	0.0470	1.2677	0.0162	1.2840	0.3650	0.0155	0.3805		5,036.6101	5,036.6101	0.2816		5,043.6494
Worker	1.9297	1.1242	13.6270	0.0471	5.6559	0.0415	5.6974	1.5000	0.0382	1.5382		4,697.7892	4,697.7892	0.1084		4,700.4991
Total	**2.3485**	**14.7664**	**18.0454**	**0.0941**	**6.9236**	**0.0578**	**6.9814**	**1.8650**	**0.0537**	**1.9187**		**9,734.3994**	**9,734.3994**	**0.3900**		**9,744.1485**

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4188	13.6422	4.4184	0.0470	1.2677	0.0162	1.2840	0.3650	0.0155	0.3805		5,036.6101	5,036.6101	0.2816		5,043.6494
Worker	1.9297	1.1242	13.6270	0.0471	5.6559	0.0415	5.6974	1.5000	0.0382	1.5382		4,697.7892	4,697.7892	0.1084		4,700.4991
Total	**2.3485**	**14.7664**	**18.0454**	**0.0941**	**6.9236**	**0.0578**	**6.9814**	**1.8650**	**0.0537**	**1.9187**		**9,734.3994**	**9,734.3994**	**0.3900**		**9,744.1485**

3.10 Phase 3 Building Construction - 2026

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4092	13.5154	4.3291	0.0467	1.2678	0.0159	1.2836	0.3650	0.0152	0.3802		5,010.5611	5,010.5611	0.2773		5,017.4939
Worker	1.8476	1.0356	12.7307	0.0455	5.6559	0.0401	5.6960	1.5000	0.0369	1.5369		4,534.6355	4,534.6355	0.0993		4,537.1190
Total	**2.2568**	**14.5510**	**17.0598**	**0.0922**	**6.9237**	**0.0560**	**6.9796**	**1.8650**	**0.0521**	**1.9171**		**9,545.1965**	**9,545.1965**	**0.3767**		**9,554.6128**

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981

Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4092	13.5154	4.3291	0.0467	1.2678	0.0159	1.2836	0.3650	0.0152	0.3802		5,010.5611	5,010.5611	0.2773		5,017.4939
Worker	1.8476	1.0356	12.7307	0.0455	5.6559	0.0401	5.6960	1.5000	0.0369	1.5369		4,534.6355	4,534.6355	0.0993		4,537.1190
Total	**2.2568**	**14.5510**	**17.0598**	**0.0922**	**6.9237**	**0.0560**	**6.9796**	**1.8650**	**0.0521**	**1.9171**		**9,545.1965**	**9,545.1965**	**0.3767**		**9,554.6128**

3.11 Phase 3 Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	1.0340					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**1.2048**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.3688	0.2067	2.5411	9.0700e-003	1.1289	8.0100e-003	1.1370	0.2994	7.3700e-003	0.3068		905.1348	905.1348	0.0198		905.6305
Total	**0.3688**	**0.2067**	**2.5411**	**9.0700e-003**	**1.1289**	**8.0100e-003**	**1.1370**	**0.2994**	**7.3700e-003**	**0.3068**		**905.1348**	**905.1348**	**0.0198**		**905.6305**

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	1.0340					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**1.2048**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.3688	0.2067	2.5411	9.0700e-003	1.1289	8.0100e-003	1.1370	0.2994	7.3700e-003	0.3068		905.1348	905.1348	0.0198		905.6305
Total	**0.3688**	**0.2067**	**2.5411**	**9.0700e-003**	**1.1289**	**8.0100e-003**	**1.1370**	**0.2994**	**7.3700e-003**	**0.3068**		**905.1348**	**905.1348**	**0.0198**		**905.6305**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Mitigated	3.3765	17.4173	48.9581	0.1738	14.5976	0.1502	14.7478	3.9067	0.1402	4.0469		17,675.9784	17,675.9784	0.9389		17,699.4516
Unmitigated	3.3765	17.4173	48.9581	0.1738	14.5976	0.1502	14.7478	3.9067	0.1402	4.0469		17,675.9784	17,675.9784	0.9389		17,699.4516

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
High School	1,607.40	573.40	235.00	5,396,683	5,396,683
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	1,607.40	573.40	235.00	5,396,683	5,396,683

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
High School	16.60	8.40	6.90	77.80	17.20	5.00	75	19	6
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
High School	0.547192	0.045177	0.202743	0.121510	0.016147	0.006143	0.019743	0.029945	0.002479	0.002270	0.005078	0.000682	0.000891
Other Non-Asphalt Surfaces	0.547192	0.045177	0.202743	0.121510	0.016147	0.006143	0.019743	0.029945	0.002479	0.002270	0.005078	0.000682	0.000891
Parking Lot	0.547192	0.045177	0.202743	0.121510	0.016147	0.006143	0.019743	0.029945	0.002479	0.002270	0.005078	0.000682	0.000891

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.0614	0.5583	0.4690	3.3500e-003		0.0424	0.0424		0.0424	0.0424		669.9544	669.9544	0.0128	0.0123	673.9356
NaturalGas Unmitigated	0.0614	0.5583	0.4690	3.3500e-003		0.0424	0.0424		0.0424	0.0424		669.9544	669.9544	0.0128	0.0123	673.9356

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					
High School	5694.61	0.0614	0.5583	0.4690	3.3500e-003		0.0424	0.0424		0.0424	0.0424		669.9544	669.9544	0.0128	0.0123	673.9356
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0614**	**0.5583**	**0.4690**	**3.3500e-003**		**0.0424**	**0.0424**		**0.0424**	**0.0424**		**669.9544**	**669.9544**	**0.0128**	**0.0123**	**673.9356**

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					
High School	5.69461	0.0614	0.5583	0.4690	3.3500e-003		0.0424	0.0424		0.0424	0.0424		669.9544	669.9544	0.0128	0.0123	673.9356
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0614**	**0.5583**	**0.4690**	**3.3500e-003**		**0.0424**	**0.0424**		**0.0424**	**0.0424**		**669.9544**	**669.9544**	**0.0128**	**0.0123**	**673.9356**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	4.6187	1.3000e-003	0.1414	1.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		0.3019	0.3019	8.0000e-004		0.3219
Unmitigated	4.6187	1.3000e-003	0.1414	1.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		0.3019	0.3019	8.0000e-004		0.3219

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	0.2921					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.3134					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0132	1.3000e-003	0.1414	1.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		0.3019	0.3019	8.0000e-004		0.3219
Total	**4.6187**	**1.3000e-003**	**0.1414**	**1.0000e-005**		**5.1000e-004**	**5.1000e-004**		**5.1000e-004**	**5.1000e-004**		**0.3019**	**0.3019**	**8.0000e-004**		**0.3219**

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	0.2921					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.3134					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0132	1.3000e-003	0.1414	1.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		0.3019	0.3019	8.0000e-004		0.3219
Total	**4.6187**	**1.3000e-003**	**0.1414**	**1.0000e-005**		**5.1000e-004**	**5.1000e-004**		**5.1000e-004**	**5.1000e-004**		**0.3019**	**0.3019**	**8.0000e-004**		**0.3219**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

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

Damien High School Master Plan Update

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
High School	940.00	Student	2.79	199,859.00	0
Other Non-Asphalt Surfaces	19.23	Acre	19.23	837,658.80	0
Parking Lot	420.00	Space	3.78	168,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2021
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Campus is 25.8 acres, with 940 students and 75 staff members. The Master Plan total building area is 199,859 sf.

Construction Phase - Schedule based on project plans and assumes architectural coatings would be applied during the latter portions of the building construction phase.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT -

Demolition - Phase 1 demo: 5,972 sq ft building and 1 tennis court. Estimated tonnage - Phase 2 demo: 5 tennis courts & portion of parking lot north of Gymnasium. Phase 2 demo: 72 space parking lot east of the Event Center

Architectural Coating - Assume all architectural coatings comply with SCAQMD Rule 1113. Phase 1 includes 12,500sf new bldg, Phase 2 includes 46,100sf new bldg, and Phase 3 includes 14,500sf new bldg

Vehicle Trips -

Area Coating - Assume all architectural coatings comply with SCAQMD Rule 1113.

Water And Wastewater -

Construction Off-road Equipment Mitigation - Dust control measures as required by SCAQMD Rule 403.

Area Mitigation - Area Coating - Assume all architectural coatings comply with SCAQMD Rule 1113.

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	99,930.00	7,250.00
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	99,930.00	6,250.00
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	99,930.00	23,050.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	299,789.00	21,750.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	299,789.00	18,750.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	299,789.00	69,150.00
tblArchitecturalCoating	ConstArea_Parking	60,340.00	0.00
tblArchitecturalCoating	ConstArea_Parking	60,340.00	163,600.00
tblArchitecturalCoating	ConstArea_Parking	60,340.00	53,600.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00

tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	50
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblAreaCoating	Area_EF_Parking	100	50
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	35.00	65.00
tblConstructionPhase	NumDays	35.00	48.00
tblConstructionPhase	NumDays	35.00	153.00
tblConstructionPhase	NumDays	440.00	180.00
tblConstructionPhase	NumDays	440.00	1,307.00
tblConstructionPhase	NumDays	440.00	220.00
tblConstructionPhase	NumDays	30.00	20.00
tblConstructionPhase	NumDays	30.00	20.00
tblConstructionPhase	NumDays	30.00	20.00
tblConstructionPhase	NumDays	35.00	10.00
tblLandUse	LandUseSquareFeet	124,701.32	199,859.00
tblLandUse	LotAcreage	2.86	2.79

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

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

Year	lb/day										lb/day					
2019	5.7117	45.8511	47.6415	0.1403	6.9235	1.7979	8.4082	1.8649	1.6725	3.2623	0.0000	14,249.6512	14,249.6512	1.1959	0.0000	14,279.5492
2020	14.9655	43.9189	50.7755	0.1529	8.0524	1.6619	9.4363	2.1643	1.5449	3.4727	0.0000	15,458.6052	15,458.6052	1.2045	0.0000	15,488.7163
2021	4.6718	38.1467	41.9811	0.1357	6.9235	1.0436	7.9671	1.8649	0.9810	2.8459	0.0000	13,758.1758	13,758.1758	1.1064	0.0000	13,785.8368
2022	4.3028	35.2437	39.9215	0.1332	6.9235	0.8877	7.8112	1.8650	0.8348	2.6998	0.0000	13,509.0385	13,509.0385	1.0750	0.0000	13,535.9135
2023	3.8997	29.4745	37.8543	0.1295	6.9236	0.7588	7.6823	1.8650	0.7134	2.5783	0.0000	13,136.4959	13,136.4959	1.0206	0.0000	13,162.0099
2024	6.4349	29.8138	41.5051	0.1409	8.0525	0.7409	8.7935	2.1644	0.6998	2.8641	0.0000	14,267.1753	14,267.1753	1.0429	0.0000	14,293.2482
2025	8.1576	37.1476	54.9581	0.1625	8.2202	1.0642	9.2844	2.2089	0.9947	3.2035	0.0000	16,352.6691	16,352.6691	1.7390	0.0000	16,396.1440
2026	4.9238	28.3126	38.6869	0.1358	8.0526	0.6425	8.6951	2.1644	0.6067	2.7711	0.0000	13,762.5681	13,762.5681	1.0066	0.0000	13,787.7323
Maximum	**14.9655**	**45.8511**	**54.9581**	**0.1625**	**8.2202**	**1.7979**	**9.4363**	**2.2089**	**1.6725**	**3.4727**	**0.0000**	**16,352.6691**	**16,352.6691**	**1.7390**	**0.0000**	**16,396.1440**

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					
2019	5.7117	45.8511	47.6415	0.1403	6.9235	1.7979	8.4082	1.8649	1.6725	3.2623	0.0000	14,249.6512	14,249.6512	1.1959	0.0000	14,279.5492
2020	14.9655	43.9189	50.7755	0.1529	8.0524	1.6619	9.4363	2.1643	1.5449	3.4727	0.0000	15,458.6052	15,458.6052	1.2045	0.0000	15,488.7163
2021	4.6718	38.1467	41.9811	0.1357	6.9235	1.0436	7.9671	1.8649	0.9810	2.8459	0.0000	13,758.1758	13,758.1758	1.1064	0.0000	13,785.8368
2022	4.3028	35.2437	39.9215	0.1332	6.9235	0.8877	7.8112	1.8650	0.8348	2.6998	0.0000	13,509.0385	13,509.0385	1.0750	0.0000	13,535.9135
2023	3.8997	29.4745	37.8543	0.1295	6.9236	0.7588	7.6823	1.8650	0.7134	2.5783	0.0000	13,136.4959	13,136.4959	1.0206	0.0000	13,162.0099
2024	6.4349	29.8138	41.5051	0.1409	8.0525	0.7409	8.7935	2.1644	0.6998	2.8641	0.0000	14,267.1753	14,267.1753	1.0429	0.0000	14,293.2482

2025	8.1576	37.1476	54.9581	0.1625	8.2202	1.0642	9.2844	2.2089	0.9947	3.2035	0.0000	16,352.6691	16,352.6691	1.7390	0.0000	16,396.1440
2026	4.9238	28.3126	38.6869	0.1358	8.0526	0.6425	8.6951	2.1644	0.6067	2.7711	0.0000	13,762.5681	13,762.5681	1.0066	0.0000	13,787.7323
Maximum	**14.9655**	**45.8511**	**54.9581**	**0.1625**	**8.2202**	**1.7979**	**9.4363**	**2.2089**	**1.6725**	**3.4727**	**0.0000**	**16,352.6691**	**16,352.6691**	**1.7390**	**0.0000**	**16,396.1440**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.6187	1.3000e-003	0.1414	1.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		0.3019	0.3019	8.0000e-004		0.3219
Energy	0.0614	0.5583	0.4690	3.3500e-003		0.0424	0.0424		0.0424	0.0424		669.9544	669.9544	0.0128	0.0123	673.9356
Mobile	3.4736	16.8995	51.9981	0.1827	14.5976	0.1496	14.7471	3.9067	0.1397	4.0464		18,565.8820	18,565.8820	0.9469		18,589.5535
Total	**8.1537**	**17.4591**	**52.6085**	**0.1860**	**14.5976**	**0.1925**	**14.7901**	**3.9067**	**0.1826**	**4.0893**		**19,236.1383**	**19,236.1383**	**0.9605**	**0.0123**	**19,263.8110**

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	4.6187	1.3000e-003	0.1414	1.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		0.3019	0.3019	8.0000e-004		0.3219

Energy	0.0614	0.5583	0.4690	3.3500e-003		0.0424	0.0424		0.0424	0.0424		669.9544	669.9544	0.0128	0.0123	673.9356
Mobile	3.4736	16.8995	51.9981	0.1827	14.5976	0.1496	14.7471	3.9067	0.1397	4.0464		18,565.8820	18,565.8820	0.9469		18,589.5535
Total	**8.1537**	**17.4591**	**52.6085**	**0.1860**	**14.5976**	**0.1925**	**14.7901**	**3.9067**	**0.1826**	**4.0893**		**19,236.1383**	**19,236.1383**	**0.9605**	**0.0123**	**19,263.8110**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Phase 1 Demolition	Demolition	6/1/2019	6/28/2019	5	20	
2	Phase 1 Building Construction	Building Construction	6/29/2019	3/6/2020	5	180	
3	Phase 1 Architectural Coating	Architectural Coating	1/1/2020	3/6/2020	5	48	
4	Phase 2 Demolition	Demolition	4/1/2020	4/28/2020	5	20	
5	Phase 2 Building Construction	Building Construction	4/29/2020	5/1/2025	5	1307	
6	Phase 2 Architectural Coating	Architectural Coating	10/1/2024	5/1/2025	5	153	
7	Phase 2 Parking Lot	Paving	5/1/2025	5/14/2025	5	10	
8	Phase 3 Demolition	Demolition	6/1/2025	6/27/2025	5	20	
9	Phase 3 Building Construction	Building Construction	6/28/2025	5/1/2026	5	220	
10	Phase 3 Architectural Coating	Architectural Coating	2/1/2026	5/1/2026	5	65	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 23.01

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 18,750; Non-Residential Outdoor: 6,250; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Phase 1 Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Phase 1 Demolition	Excavators	3	8.00	158	0.38
Phase 1 Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Phase 2 Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Phase 2 Demolition	Excavators	3	8.00	158	0.38
Phase 2 Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Phase 3 Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Phase 3 Demolition	Excavators	3	8.00	158	0.38
Phase 3 Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Phase 1 Building Construction	Cranes	1	7.00	231	0.29
Phase 1 Building Construction	Forklifts	3	8.00	89	0.20
Phase 1 Building Construction	Generator Sets	1	8.00	84	0.74
Phase 1 Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Phase 1 Building Construction	Welders	1	8.00	46	0.45
Phase 2 Building Construction	Cranes	1	7.00	231	0.29
Phase 2 Building Construction	Forklifts	3	8.00	89	0.20
Phase 2 Building Construction	Generator Sets	1	8.00	84	0.74
Phase 2 Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Phase 2 Building Construction	Welders	1	8.00	46	0.45
Phase 3 Building Construction	Cranes	1	7.00	231	0.29
Phase 3 Building Construction	Forklifts	3	8.00	89	0.20
Phase 3 Building Construction	Generator Sets	1	8.00	84	0.74
Phase 3 Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Phase 3 Building Construction	Welders	1	8.00	46	0.45
Phase 2 Parking Lot	Pavers	2	8.00	130	0.42
Phase 2 Parking Lot	Paving Equipment	2	8.00	132	0.36
Phase 2 Parking Lot	Rollers	2	8.00	80	0.38
Phase 1 Architectural Coating	Air Compressors	1	6.00	78	0.48
Phase 2 Architectural Coating	Air Compressors	1	6.00	78	0.48

Phase 3 Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Phase 1 Demolition		15.00	0.00	27.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 1 Building Construction		506.00	198.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 1 Architectural Coating		101.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 2 Demolition		15.00	0.00	40.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 2 Building Construction		506.00	198.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 2 Architectural Coating		101.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 2 Parking Lot		15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 3 Demolition		15.00	0.00	35.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 3 Building Construction		506.00	198.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 3 Architectural Coating		101.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Phase 1 Demolition - 2019

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					0.3294	0.0000	0.3294	0.0499	0.0000	0.0499			0.0000			0.0000
Off-Road	3.5134	35.7830	22.0600	0.0388		1.7949	1.7949		1.6697	1.6697		3,816.8994	3,816.8994	1.0618		3,843.4451

Total	**3.5134**	**35.7830**	**22.0600**	**0.0388**	**0.3294**	**1.7949**	**2.1243**	**0.0499**	**1.6697**	**1.7195**		**3,816.8994**	**3,816.8994**	**1.0618**		**3,843.4451**

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	0.0127	0.4135	0.0882	1.0800e-003	0.0236	1.5200e-003	0.0251	6.4700e-003	1.4500e-003	7.9200e-003		116.7091	116.7091	8.0400e-003		116.9100
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	0.0749	0.0551	0.7233	1.8300e-003	0.1677	1.4500e-003	0.1691	0.0445	1.3300e-003	0.0458		181.9429	181.9429	6.2500e-003		182.0992
Total	**0.0876**	**0.4686**	**0.8114**	**2.9100e-003**	**0.1913**	**2.9700e-003**	**0.1942**	**0.0509**	**2.7800e-003**	**0.0537**		**298.6520**	**298.6520**	**0.0143**		**299.0092**

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					0.1285	0.0000	0.1285	0.0195	0.0000	0.0195			0.0000			0.0000
Off-Road	3.5134	35.7830	22.0600	0.0388		1.7949	1.7949		1.6697	1.6697	0.0000	3,816.8994	3,816.8994	1.0618		3,843.4451
Total	**3.5134**	**35.7830**	**22.0600**	**0.0388**	**0.1285**	**1.7949**	**1.9234**	**0.0195**	**1.6697**	**1.6891**	**0.0000**	**3,816.8994**	**3,816.8994**	**1.0618**		**3,843.4451**

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	0.0127	0.4135	0.0882	1.0800e-003	0.0236	1.5200e-003	0.0251	6.4700e-003	1.4500e-003	7.9200e-003		116.7091	116.7091	8.0400e-003		116.9100
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	0.0749	0.0551	0.7233	1.8300e-003	0.1677	1.4500e-003	0.1691	0.0445	1.3300e-003	0.0458		181.9429	181.9429	6.2500e-003		182.0992
Total	**0.0876**	**0.4686**	**0.8114**	**2.9100e-003**	**0.1913**	**2.9700e-003**	**0.1942**	**0.0509**	**2.7800e-003**	**0.0537**		**298.6520**	**298.6520**	**0.0143**		**299.0092**

3.3 Phase 1 Building Construction - 2019

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	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127		2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**		**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

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	0.8228	22.9145	6.0802	0.0518	1.2676	0.1461	1.4137	0.3650	0.1398	0.5047		5,520.5295	5,520.5295	0.3538		5,529.3737
Worker	2.5278	1.8578	24.3975	0.0617	5.6559	0.0488	5.7047	1.5000	0.0449	1.5449		6,137.5416	6,137.5416	0.2108		6,142.8120
Total	**3.3505**	**24.7723**	**30.4777**	**0.1134**	**6.9235**	**0.1949**	**7.1183**	**1.8649**	**0.1847**	**2.0496**		**11,658.0710**	**11,658.0710**	**0.5646**		**11,672.1857**

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	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127	0.0000	2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**	**0.0000**	**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

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	0.8228	22.9145	6.0802	0.0518	1.2676	0.1461	1.4137	0.3650	0.1398	0.5047		5,520.5295	5,520.5295	0.3538		5,529.3737
Worker	2.5278	1.8578	24.3975	0.0617	5.6559	0.0488	5.7047	1.5000	0.0449	1.5449		6,137.5416	6,137.5416	0.2108		6,142.8120

Total	**3.3505**	**24.7723**	**30.4777**	**0.1134**	**6.9235**	**0.1949**	**7.1183**	**1.8649**	**0.1847**	**2.0496**		**11,658.0710**	**11,658.0710**	**0.5646**		**11,672.1857**

3.3 Phase 1 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**

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	0.7042	21.0618	5.5184	0.0514	1.2676	0.0991	1.3667	0.3650	0.0948	0.4598		5,485.0890	5,485.0890	0.3347		5,493.4569
Worker	2.3286	1.6566	22.1549	0.0598	5.6559	0.0473	5.7032	1.5000	0.0436	1.5435		5,951.1311	5,951.1311	0.1876		5,955.8218
Total	**3.0328**	**22.7183**	**27.6733**	**0.1111**	**6.9235**	**0.1464**	**7.0699**	**1.8649**	**0.1384**	**2.0033**		**11,436.2201**	**11,436.2201**	**0.5224**		**11,449.2787**

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**

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	0.7042	21.0618	5.5184	0.0514	1.2676	0.0991	1.3667	0.3650	0.0948	0.4598		5,485.0890	5,485.0890	0.3347		5,493.4569
Worker	2.3286	1.6566	22.1549	0.0598	5.6559	0.0473	5.7032	1.5000	0.0436	1.5435		5,951.1311	5,951.1311	0.1876		5,955.8218
Total	**3.0328**	**22.7183**	**27.6733**	**0.1111**	**6.9235**	**0.1464**	**7.0699**	**1.8649**	**0.1384**	**2.0033**		**11,436.2201**	**11,436.2201**	**0.5224**		**11,449.2787**

3.4 Phase 1 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	9.1058					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	**9.3480**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

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	0.4648	0.3307	4.4222	0.0119	1.1289	9.4400e-003	1.1384	0.2994	8.6900e-003	0.3081		1,187.8740	1,187.8740	0.0375		1,188.8103
Total	**0.4648**	**0.3307**	**4.4222**	**0.0119**	**1.1289**	**9.4400e-003**	**1.1384**	**0.2994**	**8.6900e-003**	**0.3081**		**1,187.8740**	**1,187.8740**	**0.0375**		**1,188.8103**

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	9.1058					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	**9.3480**	**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**

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	0.4648	0.3307	4.4222	0.0119	1.1289	9.4400e-003	1.1384	0.2994	8.6900e-003	0.3081		1,187.8740	1,187.8740	0.0375		1,188.8103
Total	**0.4648**	**0.3307**	**4.4222**	**0.0119**	**1.1289**	**9.4400e-003**	**1.1384**	**0.2994**	**8.6900e-003**	**0.3081**		**1,187.8740**	**1,187.8740**	**0.0375**		**1,188.8103**

3.5 Phase 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					0.4280	0.0000	0.4280	0.0648	0.0000	0.0648			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**	**0.4280**	**1.6587**	**2.0867**	**0.0648**	**1.5419**	**1.6067**		**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

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	0.0175	0.5751	0.1274	1.5800e-003	0.0614	1.8400e-003	0.0633	0.0161	1.7600e-003	0.0178		171.1664	171.1664	0.0117		171.4576
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	0.0690	0.0491	0.6568	1.7700e-003	0.3134	1.4000e-003	0.3148	0.0802	1.2900e-003	0.0815		176.4169	176.4169	5.5600e-003		176.5560
Total	**0.0865**	**0.6242**	**0.7842**	**3.3500e-003**	**0.3748**	**3.2400e-003**	**0.3781**	**0.0963**	**3.0500e-003**	**0.0994**		**347.5833**	**347.5833**	**0.0172**		**348.0136**

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					0.1669	0.0000	0.1669	0.0253	0.0000	0.0253			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**	**0.1669**	**1.6587**	**1.8256**	**0.0253**	**1.5419**	**1.5671**	**0.0000**	**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

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	0.0175	0.5751	0.1274	1.5800e-003	0.0614	1.8400e-003	0.0633	0.0161	1.7600e-003	0.0178		171.1664	171.1664	0.0117		171.4576

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	0.0690	0.0491	0.6568	1.7700e-003	0.3134	1.4000e-003	0.3148	0.0802	1.2900e-003	0.0815		176.4169	176.4169	5.5600e-003		176.5560
Total	**0.0865**	**0.6242**	**0.7842**	**3.3500e-003**	**0.3748**	**3.2400e-003**	**0.3781**	**0.0963**	**3.0500e-003**	**0.0994**		**347.5833**	**347.5833**	**0.0172**		**348.0136**

3.6 Phase 2 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**

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	0.7042	21.0618	5.5184	0.0514	1.2676	0.0991	1.3667	0.3650	0.0948	0.4598		5,485.0890	5,485.0890	0.3347		5,493.4569
Worker	2.3286	1.6566	22.1549	0.0598	5.6559	0.0473	5.7032	1.5000	0.0436	1.5435		5,951.1311	5,951.1311	0.1876		5,955.8218
Total	**3.0328**	**22.7183**	**27.6733**	**0.1111**	**6.9235**	**0.1464**	**7.0699**	**1.8649**	**0.1384**	**2.0033**		**11,436.2201**	**11,436.2201**	**0.5224**		**11,449.2787**

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**

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	0.7042	21.0618	5.5184	0.0514	1.2676	0.0991	1.3667	0.3650	0.0948	0.4598		5,485.0890	5,485.0890	0.3347		5,493.4569
Worker	2.3286	1.6566	22.1549	0.0598	5.6559	0.0473	5.7032	1.5000	0.0436	1.5435		5,951.1311	5,951.1311	0.1876		5,955.8218
Total	**3.0328**	**22.7183**	**27.6733**	**0.1111**	**6.9235**	**0.1464**	**7.0699**	**1.8649**	**0.1384**	**2.0033**		**11,436.2201**	**11,436.2201**	**0.5224**		**11,449.2787**

3.6 Phase 2 Building Construction - 2021

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.6018	19.2237	5.0256	0.0509	1.2676	0.0393	1.3069	0.3650	0.0376	0.4026		5,442.6365	5,442.6365	0.3206		5,450.6525
Worker	2.1690	1.4909	20.3804	0.0579	5.6559	0.0457	5.7016	1.5000	0.0421	1.5421		5,762.1755	5,762.1755	0.1698		5,766.4200
Total	**2.7708**	**20.7146**	**25.4059**	**0.1088**	**6.9235**	**0.0850**	**7.0085**	**1.8649**	**0.0797**	**1.9446**		**11,204.8119**	**11,204.8119**	**0.4904**		**11,217.0725**

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**

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	0.6018	19.2237	5.0256	0.0509	1.2676	0.0393	1.3069	0.3650	0.0376	0.4026		5,442.6365	5,442.6365	0.3206		5,450.6525
Worker	2.1690	1.4909	20.3804	0.0579	5.6559	0.0457	5.7016	1.5000	0.0421	1.5421		5,762.1755	5,762.1755	0.1698		5,766.4200
Total	**2.7708**	**20.7146**	**25.4059**	**0.1088**	**6.9235**	**0.0850**	**7.0085**	**1.8649**	**0.0797**	**1.9446**		**11,204.8119**	**11,204.8119**	**0.4904**		**11,217.0725**

3.6 Phase 2 Building Construction - 2022

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.5649	18.2814	4.7550	0.0504	1.2677	0.0344	1.3020	0.3650	0.0329	0.3979		5,395.2206	5,395.2206	0.3096		5,402.9609
Worker	2.0317	1.3467	18.8031	0.0558	5.6559	0.0443	5.7002	1.5000	0.0408	1.5408		5,559.4843	5,559.4843	0.1534		5,563.3204
Total	**2.5966**	**19.6281**	**23.5581**	**0.1062**	**6.9235**	**0.0786**	**7.0022**	**1.8650**	**0.0736**	**1.9386**		**10,954.7049**	**10,954.7049**	**0.4631**		**10,966.2813**

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**

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	0.5649	18.2814	4.7550	0.0504	1.2677	0.0344	1.3020	0.3650	0.0329	0.3979		5,395.2206	5,395.2206	0.3096		5,402.9609
Worker	2.0317	1.3467	18.8031	0.0558	5.6559	0.0443	5.7002	1.5000	0.0408	1.5408		5,559.4843	5,559.4843	0.1534		5,563.3204
Total	**2.5966**	**19.6281**	**23.5581**	**0.1062**	**6.9235**	**0.0786**	**7.0022**	**1.8650**	**0.0736**	**1.9386**		**10,954.7049**	**10,954.7049**	**0.4631**		**10,966.2813**

3.6 Phase 2 Building Construction - 2023

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4191	13.8712	4.2943	0.0488	1.2677	0.0160	1.2837	0.3650	0.0153	0.3803		5,225.3671	5,225.3671	0.2744		5,232.2262

Worker	1.9079	1.2184	17.3160	0.0537	5.6559	0.0430	5.6989	1.5000	0.0396	1.5396		5,355.9189	5,355.9189	0.1384		5,359.3776
Total	**2.3270**	**15.0896**	**21.6103**	**0.1025**	**6.9236**	**0.0590**	**6.9826**	**1.8650**	**0.0549**	**1.9199**		**10,581.2860**	**10,581.2860**	**0.4127**		**10,591.6038**

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	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4191	13.8712	4.2943	0.0488	1.2677	0.0160	1.2837	0.3650	0.0153	0.3803		5,225.3671	5,225.3671	0.2744		5,232.2262
Worker	1.9079	1.2184	17.3160	0.0537	5.6559	0.0430	5.6989	1.5000	0.0396	1.5396		5,355.9189	5,355.9189	0.1384		5,359.3776
Total	**2.3270**	**15.0896**	**21.6103**	**0.1025**	**6.9236**	**0.0590**	**6.9826**	**1.8650**	**0.0549**	**1.9199**		**10,581.2860**	**10,581.2860**	**0.4127**		**10,591.6038**

3.6 Phase 2 Building Construction - 2024

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4090	13.8183	4.1635	0.0485	1.2677	0.0158	1.2835	0.3650	0.0151	0.3801		5,204.1613	5,204.1613	0.2705		5,210.9227
Worker	1.8049	1.1111	16.1425	0.0521	5.6559	0.0424	5.6983	1.5000	0.0390	1.5390		5,189.9320	5,189.9320	0.1269		5,193.1051
Total	**2.2138**	**14.9295**	**20.3060**	**0.1006**	**6.9236**	**0.0582**	**6.9818**	**1.8650**	**0.0542**	**1.9191**		**10,394.0933**	**10,394.0933**	**0.3974**		**10,404.0279**

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	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4090	13.8183	4.1635	0.0485	1.2677	0.0158	1.2835	0.3650	0.0151	0.3801		5,204.1613	5,204.1613	0.2705		5,210.9227
Worker	1.8049	1.1111	16.1425	0.0521	5.6559	0.0424	5.6983	1.5000	0.0390	1.5390		5,189.9320	5,189.9320	0.1269		5,193.1051
Total	**2.2138**	**14.9295**	**20.3060**	**0.1006**	**6.9236**	**0.0582**	**6.9818**	**1.8650**	**0.0542**	**1.9191**		**10,394.0933**	**10,394.0933**	**0.3974**		**10,404.0279**

3.6 Phase 2 Building Construction - 2025

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3987	13.7010	4.0565	0.0482	1.2677	0.0156	1.2833	0.3650	0.0149	0.3799		5,175.4860	5,175.4860	0.2667		5,182.1526
Worker	1.7138	1.0167	14.9927	0.0500	5.6559	0.0415	5.6974	1.5000	0.0382	1.5382		4,988.8310	4,988.8310	0.1158		4,991.7255
Total	**2.1125**	**14.7177**	**19.0493**	**0.0983**	**6.9236**	**0.0571**	**6.9807**	**1.8650**	**0.0531**	**1.9181**		**10,164.3170**	**10,164.3170**	**0.3824**		**10,173.8781**

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3987	13.7010	4.0565	0.0482	1.2677	0.0156	1.2833	0.3650	0.0149	0.3799		5,175.4860	5,175.4860	0.2667		5,182.1526
Worker	1.7138	1.0167	14.9927	0.0500	5.6559	0.0415	5.6974	1.5000	0.0382	1.5382		4,988.8310	4,988.8310	0.1158		4,991.7255
Total	**2.1125**	**14.7177**	**19.0493**	**0.0983**	**6.9236**	**0.0571**	**6.9807**	**1.8650**	**0.0531**	**1.9181**		**10,164.3170**	**10,164.3170**	**0.3824**		**10,173.8781**

3.7 Phase 2 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	2.2084					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**2.3892**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

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	0.3603	0.2218	3.2221	0.0104	1.1289	8.4600e-003	1.1374	0.2994	7.7900e-003	0.3072		1,035.9351	1,035.9351	0.0253		1,036.5684
Total	**0.3603**	**0.2218**	**3.2221**	**0.0104**	**1.1289**	**8.4600e-003**	**1.1374**	**0.2994**	**7.7900e-003**	**0.3072**		**1,035.9351**	**1,035.9351**	**0.0253**		**1,036.5684**

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	2.2084					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**2.3892**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

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	0.3603	0.2218	3.2221	0.0104	1.1289	8.4600e-003	1.1374	0.2994	7.7900e-003	0.3072		1,035.9351	1,035.9351	0.0253		1,036.5684

Total	**0.3603**	**0.2218**	**3.2221**	**0.0104**	**1.1289**	**8.4600e-003**	**1.1374**	**0.2994**	**7.7900e-003**	**0.3072**		**1,035.9351**	**1,035.9351**	**0.0253**		**1,036.5684**

3.7 Phase 2 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	2.2084					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**2.3793**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.3421	0.2029	2.9926	9.9900e-003	1.1289	8.2900e-003	1.1372	0.2994	7.6300e-003	0.3070		995.7943	995.7943	0.0231		996.3721
Total	**0.3421**	**0.2029**	**2.9926**	**9.9900e-003**	**1.1289**	**8.2900e-003**	**1.1372**	**0.2994**	**7.6300e-003**	**0.3070**		**995.7943**	**995.7943**	**0.0231**		**996.3721**

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	2.2084					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**2.3793**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.3421	0.2029	2.9926	9.9900e-003	1.1289	8.2900e-003	1.1372	0.2994	7.6300e-003	0.3070		995.7943	995.7943	0.0231		996.3721
Total	**0.3421**	**0.2029**	**2.9926**	**9.9900e-003**	**1.1289**	**8.2900e-003**	**1.1372**	**0.2994**	**7.6300e-003**	**0.3070**		**995.7943**	**995.7943**	**0.0231**		**996.3721**

3.8 Phase 2 Parking Lot - 2025

Unmitigated Construction On-Site

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

Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850		2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	0.9904					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9055**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**		**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0508	0.0301	0.4445	1.4800e-003	0.1677	1.2300e-003	0.1689	0.0445	1.1300e-003	0.0456		147.8903	147.8903	3.4300e-003		147.9761
Total	**0.0508**	**0.0301**	**0.4445**	**1.4800e-003**	**0.1677**	**1.2300e-003**	**0.1689**	**0.0445**	**1.1300e-003**	**0.0456**		**147.8903**	**147.8903**	**3.4300e-003**		**147.9761**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850	0.0000	2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	0.9904					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9055**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**	**0.0000**	**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0508	0.0301	0.4445	1.4800e-003	0.1677	1.2300e-003	0.1689	0.0445	1.1300e-003	0.0456		147.8903	147.8903	3.4300e-003		147.9761
Total	**0.0508**	**0.0301**	**0.4445**	**1.4800e-003**	**0.1677**	**1.2300e-003**	**0.1689**	**0.0445**	**1.1300e-003**	**0.0456**		**147.8903**	**147.8903**	**3.4300e-003**		**147.9761**

3.9 Phase 3 Demolition - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3745	0.0000	0.3745	0.0567	0.0000	0.0567			0.0000			0.0000
Off-Road	2.0926	19.1966	19.4184	0.0388		0.8528	0.8528		0.7920	0.7920		3,747.5996	3,747.5996	1.0464		3,773.7606
Total	**2.0926**	**19.1966**	**19.4184**	**0.0388**	**0.3745**	**0.8528**	**1.2272**	**0.0567**	**0.7920**	**0.8487**		**3,747.5996**	**3,747.5996**	**1.0464**		**3,773.7606**

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	9.0900e-003	0.2816	0.1013	1.2700e-003	0.0537	5.1000e-004	0.0543	0.0141	4.9000e-004	0.0146		138.8550	138.8550	9.2100e-003		139.0853
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	0.0508	0.0301	0.4445	1.4800e-003	0.3134	1.2300e-003	0.3147	0.0802	1.1300e-003	0.0814		147.8903	147.8903	3.4300e-003		147.9761
Total	**0.0599**	**0.3118**	**0.5458**	**2.7500e-003**	**0.3672**	**1.7400e-003**	**0.3689**	**0.0943**	**1.6200e-003**	**0.0959**		**286.7453**	**286.7453**	**0.0126**		**287.0613**

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					0.1461	0.0000	0.1461	0.0221	0.0000	0.0221			0.0000			0.0000
Off-Road	2.0926	19.1966	19.4184	0.0388		0.8528	0.8528		0.7920	0.7920	0.0000	3,747.5996	3,747.5996	1.0464		3,773.7606
Total	**2.0926**	**19.1966**	**19.4184**	**0.0388**	**0.1461**	**0.8528**	**0.9988**	**0.0221**	**0.7920**	**0.8141**	**0.0000**	**3,747.5996**	**3,747.5996**	**1.0464**		**3,773.7606**

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	9.0900e-003	0.2816	0.1013	1.2700e-003	0.0537	5.1000e-004	0.0543	0.0141	4.9000e-004	0.0146		138.8550	138.8550	9.2100e-003		139.0853

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	0.0508	0.0301	0.4445	1.4800e-003	0.3134	1.2300e-003	0.3147	0.0802	1.1300e-003	0.0814		147.8903	147.8903	3.4300e-003		147.9761
Total	**0.0599**	**0.3118**	**0.5458**	**2.7500e-003**	**0.3672**	**1.7400e-003**	**0.3689**	**0.0943**	**1.6200e-003**	**0.0959**		**286.7453**	**286.7453**	**0.0126**		**287.0613**

3.10 Phase 3 Building Construction - 2025

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3987	13.7010	4.0565	0.0482	1.2677	0.0156	1.2833	0.3650	0.0149	0.3799		5,175.4860	5,175.4860	0.2667		5,182.1526
Worker	1.7138	1.0167	14.9927	0.0500	5.6559	0.0415	5.6974	1.5000	0.0382	1.5382		4,988.8310	4,988.8310	0.1158		4,991.7255
Total	**2.1125**	**14.7177**	**19.0493**	**0.0983**	**6.9236**	**0.0571**	**6.9807**	**1.8650**	**0.0531**	**1.9181**		**10,164.3170**	**10,164.3170**	**0.3824**		**10,173.8781**

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3987	13.7010	4.0565	0.0482	1.2677	0.0156	1.2833	0.3650	0.0149	0.3799		5,175.4860	5,175.4860	0.2667		5,182.1526
Worker	1.7138	1.0167	14.9927	0.0500	5.6559	0.0415	5.6974	1.5000	0.0382	1.5382		4,988.8310	4,988.8310	0.1158		4,991.7255
Total	**2.1125**	**14.7177**	**19.0493**	**0.0983**	**6.9236**	**0.0571**	**6.9807**	**1.8650**	**0.0531**	**1.9181**		**10,164.3170**	**10,164.3170**	**0.3824**		**10,173.8781**

3.10 Phase 3 Building Construction - 2026

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3897	13.5739	3.9747	0.0480	1.2678	0.0153	1.2831	0.3650	0.0146	0.3796		5,147.9503	5,147.9503	0.2629		5,154.5224
Worker	1.6355	0.9366	14.0199	0.0483	5.6559	0.0401	5.6960	1.5000	0.0369	1.5369		4,815.4990	4,815.4990	0.1062		4,818.1536
Total	**2.0251**	**14.5105**	**17.9947**	**0.0962**	**6.9237**	**0.0554**	**6.9791**	**1.8650**	**0.0515**	**1.9165**		**9,963.4493**	**9,963.4493**	**0.3691**		**9,972.6760**

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981

Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3897	13.5739	3.9747	0.0480	1.2678	0.0153	1.2831	0.3650	0.0146	0.3796		5,147.9503	5,147.9503	0.2629		5,154.5224
Worker	1.6355	0.9366	14.0199	0.0483	5.6559	0.0401	5.6960	1.5000	0.0369	1.5369		4,815.4990	4,815.4990	0.1062		4,818.1536
Total	**2.0251**	**14.5105**	**17.9947**	**0.0962**	**6.9237**	**0.0554**	**6.9791**	**1.8650**	**0.0515**	**1.9165**		**9,963.4493**	**9,963.4493**	**0.3691**		**9,972.6760**

3.11 Phase 3 Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	1.0340					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**1.2048**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.3265	0.1870	2.7985	9.6400e-003	1.1289	8.0100e-003	1.1370	0.2994	7.3700e-003	0.3068		961.1964	961.1964	0.0212		961.7263
Total	**0.3265**	**0.1870**	**2.7985**	**9.6400e-003**	**1.1289**	**8.0100e-003**	**1.1370**	**0.2994**	**7.3700e-003**	**0.3068**		**961.1964**	**961.1964**	**0.0212**		**961.7263**

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	1.0340					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**1.2048**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.3265	0.1870	2.7985	9.6400e-003	1.1289	8.0100e-003	1.1370	0.2994	7.3700e-003	0.3068		961.1964	961.1964	0.0212		961.7263
Total	**0.3265**	**0.1870**	**2.7985**	**9.6400e-003**	**1.1289**	**8.0100e-003**	**1.1370**	**0.2994**	**7.3700e-003**	**0.3068**		**961.1964**	**961.1964**	**0.0212**		**961.7263**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Mitigated	3.4736	16.8995	51.9981	0.1827	14.5976	0.1496	14.7471	3.9067	0.1397	4.0464		18,565.8820	18,565.8820	0.9469		18,589.5535
Unmitigated	3.4736	16.8995	51.9981	0.1827	14.5976	0.1496	14.7471	3.9067	0.1397	4.0464		18,565.8820	18,565.8820	0.9469		18,589.5535

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
High School	1,607.40	573.40	235.00	5,396,683	5,396,683
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	1,607.40	573.40	235.00	5,396,683	5,396,683

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
High School	16.60	8.40	6.90	77.80	17.20	5.00	75	19	6
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
High School	0.547192	0.045177	0.202743	0.121510	0.016147	0.006143	0.019743	0.029945	0.002479	0.002270	0.005078	0.000682	0.000891
Other Non-Asphalt Surfaces	0.547192	0.045177	0.202743	0.121510	0.016147	0.006143	0.019743	0.029945	0.002479	0.002270	0.005078	0.000682	0.000891
Parking Lot	0.547192	0.045177	0.202743	0.121510	0.016147	0.006143	0.019743	0.029945	0.002479	0.002270	0.005078	0.000682	0.000891

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.0614	0.5583	0.4690	3.3500e-003		0.0424	0.0424		0.0424	0.0424		669.9544	669.9544	0.0128	0.0123	673.9356
NaturalGas Unmitigated	0.0614	0.5583	0.4690	3.3500e-003		0.0424	0.0424		0.0424	0.0424		669.9544	669.9544	0.0128	0.0123	673.9356

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					
High School	5694.61	0.0614	0.5583	0.4690	3.3500e-003		0.0424	0.0424		0.0424	0.0424		669.9544	669.9544	0.0128	0.0123	673.9356
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0614**	**0.5583**	**0.4690**	**3.3500e-003**		**0.0424**	**0.0424**		**0.0424**	**0.0424**		**669.9544**	**669.9544**	**0.0128**	**0.0123**	**673.9356**

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					
High School	5.69461	0.0614	0.5583	0.4690	3.3500e-003		0.0424	0.0424		0.0424	0.0424		669.9544	669.9544	0.0128	0.0123	673.9356
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0614**	**0.5583**	**0.4690**	**3.3500e-003**		**0.0424**	**0.0424**		**0.0424**	**0.0424**		**669.9544**	**669.9544**	**0.0128**	**0.0123**	**673.9356**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	4.6187	1.3000e-003	0.1414	1.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		0.3019	0.3019	8.0000e-004		0.3219
Unmitigated	4.6187	1.3000e-003	0.1414	1.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		0.3019	0.3019	8.0000e-004		0.3219

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	0.2921					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.3134					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0132	1.3000e-003	0.1414	1.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		0.3019	0.3019	8.0000e-004		0.3219
Total	**4.6187**	**1.3000e-003**	**0.1414**	**1.0000e-005**		**5.1000e-004**	**5.1000e-004**		**5.1000e-004**	**5.1000e-004**		**0.3019**	**0.3019**	**8.0000e-004**		**0.3219**

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	0.2921					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.3134					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0132	1.3000e-003	0.1414	1.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		0.3019	0.3019	8.0000e-004		0.3219
Total	**4.6187**	**1.3000e-003**	**0.1414**	**1.0000e-005**		**5.1000e-004**	**5.1000e-004**		**5.1000e-004**	**5.1000e-004**		**0.3019**	**0.3019**	**8.0000e-004**		**0.3219**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

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

Appendix C

California Natural Diversity Data Base and California Native Plant Society Inventory (On Flash Drive)

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (San Dimas (3411717) OR Glendora (3411727) OR Ontario (3411716) OR Yorba Linda (3311787) OR Baldwin Park (3411718))

USGS 7.5' Quads: San Dimas*, Glendora, Ontario, Yorba Linda, Baldwin Park

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Accipiter cooperii Cooper's hawk	G5 S4	None None	CDFW_WL-Watch List IUCN_LC-Least Concern	440 1,010	113 S:2	0	0	0	0	0	2	0	2	2	0	0
Agelaius tricolor tricolored blackbird	G2G3 S1S2	None Candidate Endangered	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_EN-Endangered NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	1,000 1,000	951 S:1	0	0	0	0	0	1	1	0	1	0	0
Aimophila ruficeps canescens southern California rufous-crowned sparrow	G5T3 S3	None None	CDFW_WL-Watch List	600 1,346	226 S:4	1	0	2	0	0	1	0	4	4	0	0
Ammodramus savannarum grasshopper sparrow	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	1,111 1,111	23 S:1	0	0	0	0	0	1	0	1	1	0	0
Antrozous pallidus pallid bat	G5 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive WBWG_H-High Priority	560 1,000	411 S:4	0	0	0	0	0	4	4	0	4	0	0
Arizona elegans occidentalis California glossy snake	G5T2 S2	None None	CDFW_SSC-Species of Special Concern	830 2,400	260 S:3	0	0	0	0	0	3	3	0	3	0	0
Asio otus long-eared owl	G5 S3?	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	1,050 1,050	46 S:1	0	0	0	0	0	1	1	0	1	0	0
Aspidoscelis tigris stejnegeri coastal whiptail	G5T5 S3	None None	CDFW_SSC-Species of Special Concern	440 1,100	133 S:2	0	0	1	0	0	1	0	2	2	0	0

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Athene cunicularia burrowing owl	G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	695 780	1957 S:5	1	0	0	1	1	2	0	5	4	0	1
Bombus crotchii Crotch bumble bee	G3G4 S1S2	None None		500 3,000	234 S:6	0	0	0	0	0	6	6	0	6	0	0
Brodiaea filifolia thread-leaved brodiaea	G2 S2	Threatened Endangered	Rare Plant Rank - 1B.1 SB_RSABG-Rancho Santa Ana Botanic Garden	1,300 2,300	134 S:6	0	2	1	0	0	3	3	3	6	0	0
Buteo swainsoni Swainson's hawk	G5 S3	None Threatened	BLM_S-Sensitive IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	750 750	2460 S:1	0	0	0	0	1	0	1	0	0	1	0
California Walnut Woodland California Walnut Woodland	G2 S2.1	None None		600 1,200	76 S:19	0	2	0	0	0	17	19	0	19	0	0
Calochortus plummerae Plummer's mariposa-lily	G4 S4	None None	Rare Plant Rank - 4.2 SB_RSABG-Rancho Santa Ana Botanic Garden	1,000 3,280	230 S:16	0	3	8	0	1	4	5	11	15	1	0
Calochortus weedii var. intermedius intermediate mariposa-lily	G3G4T2 S2	None None	Rare Plant Rank - 1B.2 SB_RSABG-Rancho Santa Ana Botanic Garden USFS_S-Sensitive	680 1,250	136 S:9	0	1	1	4	0	3	2	7	9	0	0
Calystegia felix lucky morning-glory	G1Q S1	None None	Rare Plant Rank - 1B.1	675 675	10 S:1	0	0	0	0	0	1	0	1	1	0	0
Campylorhynchus brunneicapillus sandiegensis coastal cactus wren	G5T3Q S3	None None	CDFW_SSC-Species of Special Concern USFS_S-Sensitive USFWS_BCC-Birds of Conservation Concern	563 827	154 S:4	0	1	2	0	0	1	0	4	4	0	0
Canyon Live Oak Ravine Forest Canyon Live Oak Ravine Forest	G3 S3.3	None None		800 2,320	50 S:17	0	0	0	0	1	16	17	0	16	0	1
Catostomus santaanae Santa Ana sucker	G1 S1	Threatened None	AFS_TH-Threatened IUCN_VU-Vulnerable	1,160 2,000	28 S:4	0	3	0	1	0	0	0	4	4	0	0

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California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Centromadia parryi ssp. australis southern tarplant	G3T2 S2	None None	Rare Plant Rank - 1B.1 SB_RSABG-Rancho Santa Ana Botanic Garden		87 S:1	0	0	0	0	0	1	1	0	1	0	0
Chaetodipus fallax fallax northwestern San Diego pocket mouse	G5T3T4 S3S4	None None	CDFW_SSC-Species of Special Concern	1,550 1,800	99 S:2	0	0	0	1	1	0	0	2	1	1	0
Chorizanthe parryi var. parryi Parry's spineflower	G3T2 S2	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive SB_RSABG-Rancho Santa Ana Botanic Garden USFS_S-Sensitive		127 S:1	0	0	0	0	0	1	1	0	1	0	0
Cladium californicum California saw-grass	G4 S2	None None	Rare Plant Rank - 2B.2 USFS_S-Sensitive	1,400 1,400	13 S:1	0	0	0	0	1	0	1	0	0	0	1
Coccyzus americanus occidentalis western yellow-billed cuckoo	G5T2T3 S1	Threatened Endangered	BLM_S-Sensitive NABCI_RWL-Red Watch List USFS_S-Sensitive USFWS_BCC-Birds of Conservation Concern	275 275	155 S:1	0	0	0	0	1	0	1	0	0	1	0
Crotalus ruber red-diamond rattlesnake	G4 S3	None None	CDFW_SSC-Species of Special Concern USFS_S-Sensitive	720 800	188 S:2	0	1	0	0	0	1	2	0	2	0	0
Diplectrona californica California diplectronan caddisfly	G1G2 S1S2	None None		1,250 1,250	1 S:1	0	0	0	0	0	1	1	0	1	0	0
Dodecahema leptoceras slender-horned spineflower	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_RSABG-Rancho Santa Ana Botanic Garden		38 S:1	0	0	0	0	1	0	1	0	0	0	1
Dudleya densiflora San Gabriel Mountains dudleya	G2 S2	None None	Rare Plant Rank - 1B.1 SB_RSABG-Rancho Santa Ana Botanic Garden USFS_S-Sensitive	1,320 1,320	9 S:1	0	0	0	0	0	1	1	0	1	0	0
Dudleya multicaulis many-stemmed dudleya	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_RSABG-Rancho Santa Ana Botanic Garden USFS_S-Sensitive	950 1,800	146 S:13	0	2	2	2	0	7	13	0	13	0	0

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Emys marmorata western pond turtle	G3G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable USFS_S-Sensitive	431 1,400	1322 S:9	0	1	0	0	1	7	5	4	8	1	0
Ensatina klauberi large-blotched salamander	G2G3 S3	None None	CDFW_WL-Watch List USFS_S-Sensitive	2,070 2,070	12 S:1	0	0	0	0	0	1	0	1	1	0	0
Eremophila alpestris actia California horned lark	G5T4Q S4	None None	CDFW_WL-Watch List IUCN_LC-Least Concern	1,100 1,100	93 S:1	0	0	1	0	0	0	0	1	1	0	0
Eriastrum densifolium ssp. sanctorum Santa Ana River woollystar	G4T1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_RSABG-Rancho Santa Ana Botanic Garden		31 S:1	0	0	0	0	1	0	1	0	0	1	0
Eumops perotis californicus western mastiff bat	G5T4 S3S4	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern WBWG_H-High Priority	300 600	294 S:7	0	0	0	0	0	7	7	0	7	0	0
Falco columbarius merlin	G5 S3S4	None None	CDFW_WL-Watch List IUCN_LC-Least Concern	720 720	35 S:1	0	0	0	0	0	1	1	0	1	0	0
Fimbristylis thermalis hot springs fimbristylis	G4 S1S2	None None	Rare Plant Rank - 2B.2		19 S:1	0	0	0	0	0	1	1	0	1	0	0
Gila orcuttii arroyo chub	G2 S2	None None	AFS_VU-Vulnerable CDFW_SSC-Species of Special Concern USFS_S-Sensitive	600 2,000	49 S:3	0	2	0	1	0	0	0	3	3	0	0
Horkelia cuneata var. puberula mesa horkelia	G4T1 S1	None None	Rare Plant Rank - 1B.1 USFS_S-Sensitive	500 1,308	103 S:8	0	1	1	0	4	2	6	2	4	0	4
Icteria virens yellow-breasted chat	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	300 1,102	96 S:6	1	1	0	0	0	4	0	6	6	0	0
Imperata brevifolia California satintail	G4 S3	None None	Rare Plant Rank - 2B.1 SB_SBBG-Santa Barbara Botanic Garden USFS_S-Sensitive		32 S:1	0	0	0	0	0	1	1	0	1	0	0

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Lasiurus cinereus hoary bat	G5 S4	None None	IUCN_LC-Least Concern WBWG_M-Medium Priority	1,670 1,722	236 S:5	0	0	0	0	0	5	5	0	5	0	0
Lasiurus xanthinus western yellow bat	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern WBWG_H-High Priority	550 860	58 S:2	0	0	0	0	0	2	2	0	2	0	0
Laterallus jamaicensis coturniculus California black rail	G3G4T1 S1	None Threatened	BLM_S-Sensitive CDFW_FP-Fully Protected IUCN_NT-Near Threatened NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	736 736	303 S:1	0	0	0	0	0	1	1	0	1	0	0
Lepidium virginicum var. robinsonii Robinson's pepper-grass	G5T3 S3	None None	Rare Plant Rank - 4.3	750 1,700	142 S:9	0	0	0	0	0	9	8	1	9	0	0
Lepus californicus bennettii San Diego black-tailed jackrabbit	G5T3T4 S3S4	None None	CDFW_SSC-Species of Special Concern	440 440	103 S:1	0	0	0	0	0	1	0	1	1	0	0
Muhlenbergia californica California muhly	G4 S4	None None	Rare Plant Rank - 4.3	1,400 1,400	5 S:1	0	0	0	0	0	1	1	0	1	0	0
Myotis yumanensis Yuma myotis	G5 S4	None None	BLM_S-Sensitive IUCN_LC-Least Concern WBWG_LM-Low-Medium Priority	1,380 1,500	263 S:2	0	2	0	0	0	0	0	2	2	0	0
Navarretia prostrata prostrate vernal pool navarretia	G2 S2	None None	Rare Plant Rank - 1B.1		60 S:1	0	0	0	0	1	0	1	0	0	0	1
Neotoma lepida intermedia San Diego desert woodrat	G5T3T4 S3S4	None None	CDFW_SSC-Species of Special Concern	1,550 1,800	118 S:2	0	0	0	0	2	0	0	2	0	2	0
Nyctinomops femorosaccus pocketed free-tailed bat	G4 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern WBWG_M-Medium Priority		90 S:1	0	0	0	0	0	1	1	0	1	0	0

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Nyctinomops macrotis big free-tailed bat	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern WBWG_MH-Medium-High Priority	550 860	32 S:2	0	0	0	0	0	2	2	0	2	0	0
Ovis canadensis nelsoni desert bighorn sheep	G4T4 S3	None None	BLM_S-Sensitive CDFW_FP-Fully Protected USFS_S-Sensitive	6,000 6,000	46 S:1	0	0	0	0	0	1	1	0	1	0	0
Phacelia stellaris Brand's star phacelia	G1 S1	None None	Rare Plant Rank - 1B.1 SB_RSABG-Rancho Santa Ana Botanic Garden	300 300	15 S:1	0	0	0	0	1	0	1	0	0	1	0
Phrynosoma blainvillii coast horned lizard	G3G4 S3S4	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	320 2,400	771 S:8	0	0	0	0	2	6	6	2	6	2	0
Polioptila californica californica coastal California gnatcatcher	G4G5T2Q S2	Threatened None	CDFW_SSC-Species of Special Concern NABCI_YWL-Yellow Watch List	500 1,380	830 S:23	0	5	2	2	3	11	5	18	20	2	1
Pseudognaphalium leucocephalum white rabbit-tobacco	G4 S2	None None	Rare Plant Rank - 2B.2	550 1,225	62 S:2	0	0	0	0	1	1	2	0	1	0	1
Rana muscosa southern mountain yellow-legged frog	G1 S1	Endangered Endangered	CDFW_WL-Watch List IUCN_EN-Endangered USFS_S-Sensitive	1,800 1,800	186 S:1	0	0	0	0	1	0	1	0	0	1	0
Rhinichthys osculus ssp. 3 Santa Ana speckled dace	G5T1 S1	None None	AFS_TH-Threatened CDFW_SSC-Species of Special Concern USFS_S-Sensitive	1,522 2,000	13 S:3	2	1	0	0	0	0	0	3	3	0	0
Riparia riparia bank swallow	G5 S2	None Threatened	BLM_S-Sensitive IUCN_LC-Least Concern		297 S:1	0	0	0	0	1	0	1	0	0	0	1
Riversidian Alluvial Fan Sage Scrub Riversidian Alluvial Fan Sage Scrub	G1 S1.1	None None		500 1,800	30 S:3	0	1	1	0	1	0	3	0	2	0	1
Salvadora hexalepis virgultea coast patch-nosed snake	G5T4 S2S3	None None	CDFW_SSC-Species of Special Concern	950 950	28 S:1	0	1	0	0	0	0	1	0	1	0	0

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Senecio aphanactis chaparral ragwort	G3 S2	None None	Rare Plant Rank - 2B.2	1,000 1,600	82 S:2	0	0	0	0	0	2	2	0	2	0	0
Setophaga petechia yellow warbler	G5 S3S4	None None	CDFW_SSC-Species of Special Concern USFWS_BCC-Birds of Conservation Concern	300 1,232	70 S:8	0	0	1	1	0	6	0	8	8	0	0
Sidalcea neomexicana salt spring checkerbloom	G4 S2	None None	Rare Plant Rank - 2B.2 USFS_S-Sensitive	700 1,200	30 S:2	0	0	0	0	2	0	2	0	0	2	0
Southern California Arroyo Chub/Santa Ana Sucker Stream Southern California Arroyo Chub/Santa Ana Sucker Stream	GNR SNR	None None		1,600 2,000	4 S:2	0	2	0	0	0	0	2	0	2	0	0
Southern Coast Live Oak Riparian Forest Southern Coast Live Oak Riparian Forest	G4 S4	None None		660 2,200	246 S:11	0	0	0	0	0	11	11	0	11	0	0
Southern Sycamore Alder Riparian Woodland Southern Sycamore Alder Riparian Woodland	G4 S4	None None		1,320 2,200	230 S:7	0	1	0	0	0	6	7	0	7	0	0
Southern Willow Scrub Southern Willow Scrub	G3 S2.1	None None		740 740	45 S:1	0	0	0	0	0	1	1	0	1	0	0
Symphyotrichum defoliatum San Bernardino aster	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive USFS_S-Sensitive	328 700	102 S:5	0	0	0	0	5	0	5	0	0	2	3
Symphyotrichum greatae Greata's aster	G2 S2	None None	Rare Plant Rank - 1B.3 BLM_S-Sensitive	1,150 2,100	56 S:5	0	0	0	0	0	5	4	1	5	0	0
Taricha torosa Coast Range newt	G4 S4	None None	CDFW_SSC-Species of Special Concern	1,126 2,400	88 S:10	1	1	8	0	0	0	0	10	10	0	0
Taxidea taxus American badger	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	560 900	544 S:2	0	0	0	0	0	2	1	1	2	0	0
Thamnophis hammondii two-striped gartersnake	G4 S3S4	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive	1,345 2,400	170 S:6	0	4	2	0	0	0	0	6	6	0	0

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Thelypteris puberula var. sonorensis Sonoran maiden fern	G5T3 S2	None None	Rare Plant Rank - 2B.2 USFS_S-Sensitive	1,600 1,600	27 S:1	0	0	0	0	0	1	1	0	1	0	0
Thysanocarpus rigidus rigid fringepod	G1G2 S1	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive USFS_S-Sensitive	1,400 1,400	5 S:1	0	0	0	0	1	0	1	0	0	1	0
Vireo bellii pusillus least Bell's vireo	G5T2 S2	Endangered Endangered	IUCN_NT-Near Threatened NABCI_YWL-Yellow Watch List	300 1,100	482 S:15	1	2	3	1	0	8	2	13	15	0	0
Walnut Forest Walnut Forest	G1 S1.1	None None		900 1,000	6 S:3	0	1	0	0	0	2	3	0	3	0	0

CNPS California Native Plant Society

Inventory of Rare and Endangered Plants

Plant List

10 matches found. *Click on scientific name for details*

Search Criteria

California Rare Plant Rank is one of [1A, 1B, 2A, 2B, 3, 4], FESA is one of [Endangered, Threatened, Candidate, Not Listed], CESA is one of [Endangered, Threatened, Rare, Not Listed], Found in Riverside County, Found in Quad 3411717, Lifeform is one of [Tree, Shrub, Leaf succulent, Herb, Vine, Stem succulent, Lichen, Moss, Liverwort], Duration is one of [ann, per, ephem], Bloom Time is one of [January, February, March, April, May, June, July, August, September, October, November, December]

Modify Search Criteria | Export to Excel | Modify Columns | Modify Sort | Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Androsace elongata ssp. acuta	California androsace	Primulaceae	annual herb	Mar-Jun	4.2	S3S4	G5?T3T4
Asplenium vespertinum	western spleenwort	Aspleniaceae	perennial rhizomatous herb	Feb-Jun	4.2	S4	G4
Calochortus plummerae	Plummer's mariposa lily	Liliaceae	perennial bulbiferous herb	May-Jul	4.2	S4	G4
Calochortus weedii var. intermedius	intermediate mariposa lily	Liliaceae	perennial bulbiferous herb	May-Jul	1B.2	S2	G3G4T2
Dudleya multicaulis	many-stemmed dudleya	Crassulaceae	perennial herb	Apr-Jul	1B.2	S2	G2
Horkelia cuneata var. puberula	mesa horkelia	Rosaceae	perennial herb	Feb-Jul(Sep)	1B.1	S1	G4T1
Lepidium virginicum var. robinsonii	Robinson's pepper-grass	Brassicaceae	annual herb	Jan-Jul	4.3	S3	G5T3
Quercus engelmannii	Engelmann oak	Fagaceae	perennial deciduous tree	Mar-Jun	4.2	S3	G3
Senecio aphanactis	chaparral ragwort	Asteraceae	annual herb	Jan-Apr(May)	2B.2	S2	G3
Symphyotrichum defoliatum	San Bernardino aster	Asteraceae	perennial rhizomatous herb	Jul-Nov	1B.2	S2	G2

Suggested Citation

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IPaC Information for Planning and Consultation **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

NOT FOR CONSULTATION

Location

Los Angeles County, California

Local office

Carlsbad Fish And Wildlife Office

(760) 431-9440
(760) 431-5901

2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385

http://www.fws.gov/carlsbad/

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species

[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

NOT FOR CONSULTATION

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Birds

NAME	STATUS
Coastal California Gnatcatcher Polioptila californica californica There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8178	Threatened
Least Bell's Vireo Vireo bellii pusillus There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/5945	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

NOT FOR CONSULTATION

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act [1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This

is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see maps of where birders and the general public have sighted birds in and around your project area, visit E-bird tools such as the E-bird data mapping tool (search for the name of a bird on your list to see specific locations where that bird has been reported to occur within your project area over a certain timeframe) and the E-bird Explore Data Tool (perform a query to see a list of all birds sighted in your county or region and within a certain timeframe). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NOT FOR CONSULTATION

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Allen's Hummingbird Selasphorus sasin This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9637	Breeds Feb 1 to Jul 15
Ashy Storm-petrel Oceanodroma homochroa This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/7237	Breeds May 1 to Jan 15
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Aug 31

Black Oystercatcher Haematopus bachmani — Breeds Apr 15 to Oct 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9591

Black Skimmer Rynchops niger — Breeds May 20 to Sep 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/5234

Black Swift Cypseloides niger — Breeds Jun 15 to Sep 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8878

Black Turnstone Arenaria melanocephala — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Black-chinned Sparrow Spizella atrogularis — Breeds Apr 15 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9447

Burrowing Owl Athene cunicularia — Breeds Mar 15 to Aug 31
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9737

California Thrasher Toxostoma redivivum — Breeds Jan 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Clark's Grebe Aechmophorus clarkii — Breeds Jan 1 to Dec 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Costa's Hummingbird Calypte costae — Breeds Jan 15 to Jun 10
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9470

NOT FOR CONSULTATION

Golden Eagle Aquila chrysaetos — Breeds Jan 1 to Aug 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1680

Gull-billed Tern Gelochelidon nilotica — Breeds May 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9501

Lawrence's Goldfinch Carduelis lawrencei — Breeds Mar 20 to Sep 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9464

Le Conte's Thrasher toxostoma lecontei — Breeds Feb 15 to Jun 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8969

Lewis's Woodpecker Melanerpes lewis — Breeds Apr 20 to Sep 30
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9408

Long-billed Curlew Numenius americanus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/5511

Marbled Godwit Limosa fedoa — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9481

Mountain Plover Charadrius montanus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3638

Nuttall's Woodpecker Picoides nuttallii — Breeds Apr 1 to Jul 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9410

NOT FOR CONSULTATION

Oak Titmouse Baeolophus inornatus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9656	Breeds Mar 15 to Jul 15
Rufous Hummingbird selasphorus rufus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8002	Breeds elsewhere
Short-billed Dowitcher Limnodromus griseus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Tricolored Blackbird Agelaius tricolor This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3910	Breeds Mar 15 to Aug 10
Whimbrel Numenius phaeopus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9483	Breeds elsewhere
White Headed Woodpecker Picoides albolarvatus This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9411	Breeds May 1 to Aug 15
Willet Tringa semipalmata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Wrentit Chamaea fasciata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 10

NOT FOR CONSULTATION

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in your project's counties during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

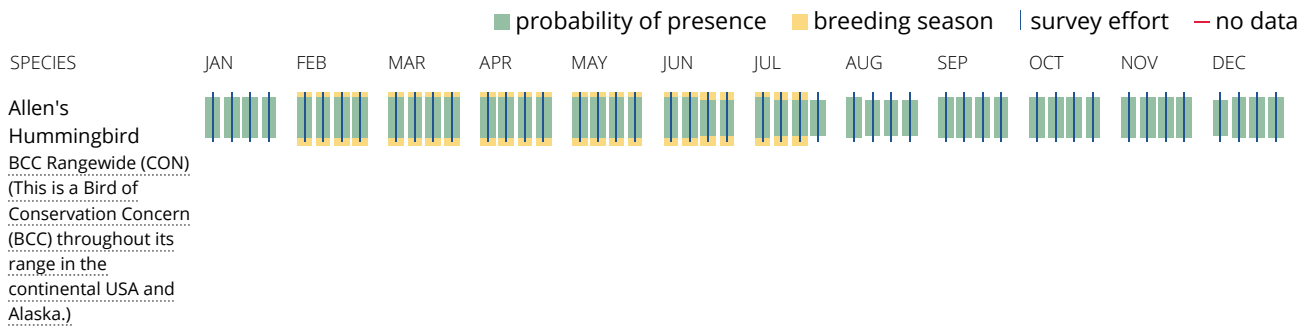
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the counties of your project area. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information.

NOT FOR CONSULTATION



Ashy Storm-petrel
BCC Rangewide (CON)
(This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Bald Eagle
Non-BCC Vulnerable
(This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)

Black Oystercatcher
BCC Rangewide (CON)
(This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

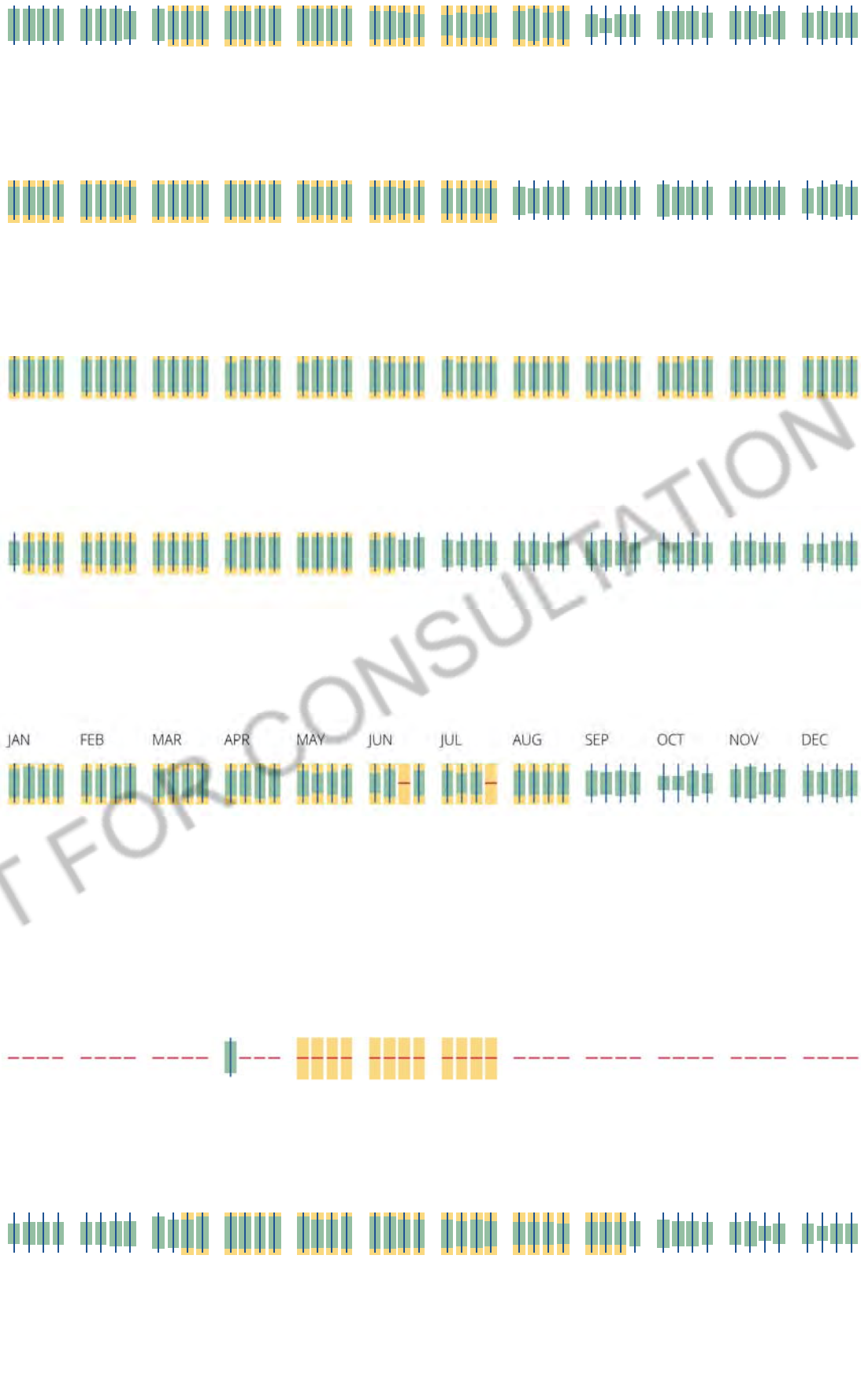
Black Skimmer
BCC Rangewide (CON)
(This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Black Swift
BCC Rangewide (CON)
(This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Black Turnstone
BCC Rangewide (CON)
(This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

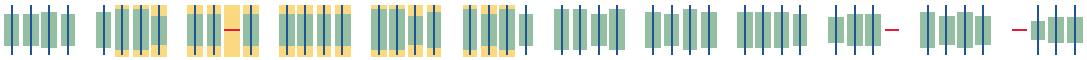
Black-chinned Sparrow
BCC Rangewide (CON)
(This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

NOT FOR CONSULTATION



NOT FOR CONSULTATION

Le Conte's Thrasher
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



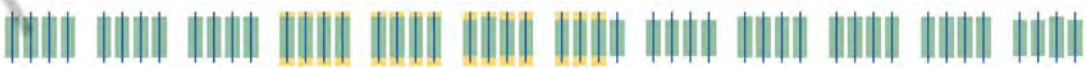
Lewis's Woodpecker
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Long-billed Curlew
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

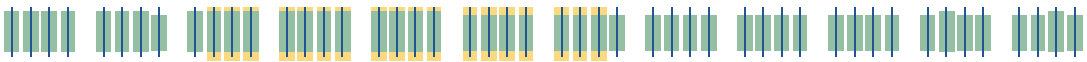
Marbled Godwit
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Mountain Plover
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

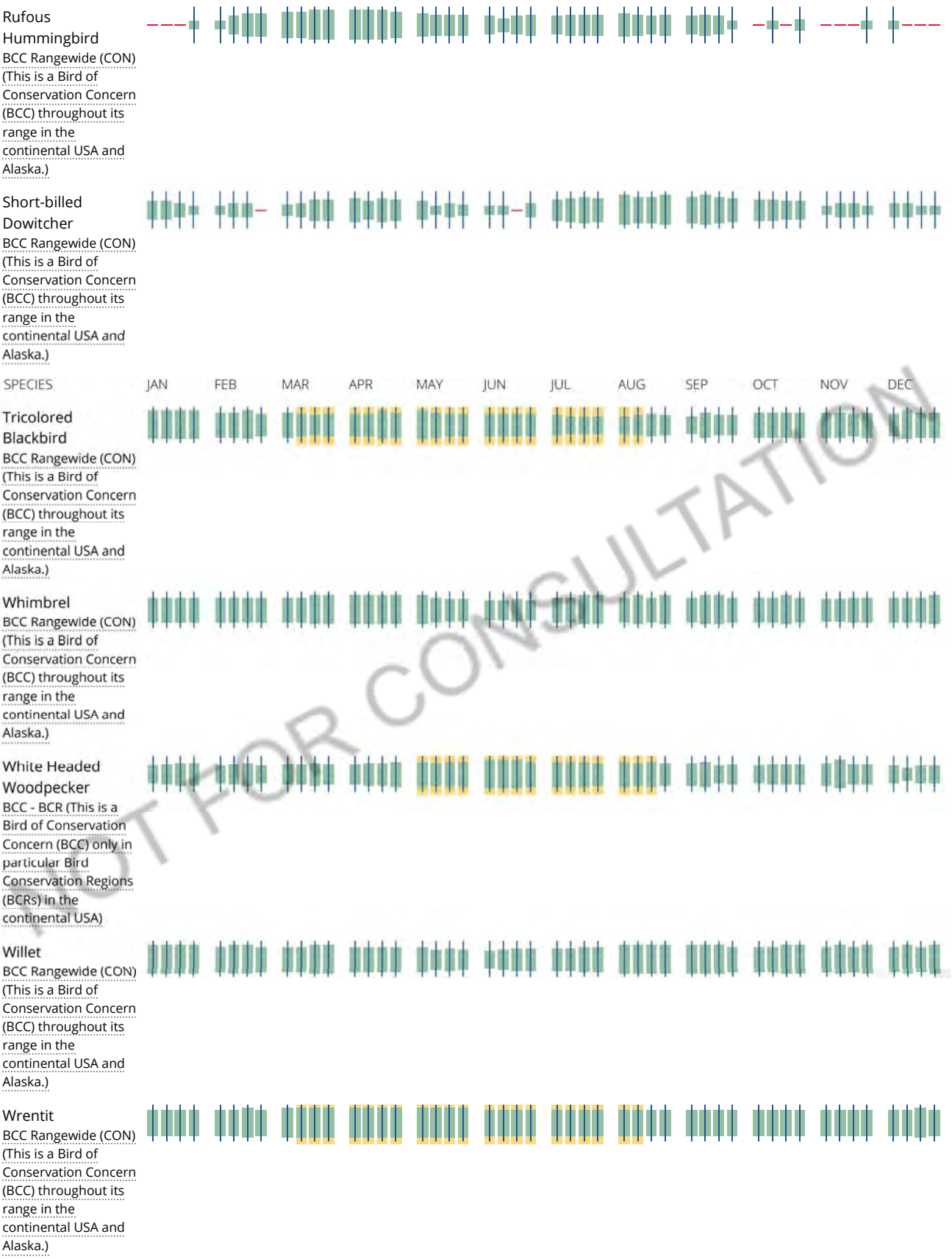
Nuttall's Woodpecker
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



Oak Titmouse
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



NOT FOR CONSULTATION



NOT FOR CONSULTATION

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the counties which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the E-bird Explore Data Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird entry on your migratory bird species list indicates a breeding season, it is probable that the bird breeds in your project's counties at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

NOT FOR CONSULTATION

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the BGEPA should such impacts occur.

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Facilities

Wildlife refuges and fish hatcheries

REFUGE AND FISH HATCHERY INFORMATION IS NOT AVAILABLE AT THIS TIME

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

THERE ARE NO KNOWN WETLANDS AT THIS LOCATION.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION

Appendix D

Cultural Resources Assessment (On Flash Drive)

CULTURAL RESOURCES ASSESSMENT

DAMIEN HIGH SCHOOL MASTER PLAN UPDATE

2280 DAMIEN AVENUE

CITY OF LA VERNE

LOS ANGELES COUNTY, CALIFORNIA

LSA

January 2019

CULTURAL RESOURCES ASSESSMENT

DAMIEN HIGH SCHOOL MASTER PLAN UPDATE

2280 DAMIEN AVENUE

CITY OF LA VERNE

LOS ANGELES COUNTY, CALIFORNIA

Prepared for:

City of La Verne
3660 "D" Street
La Verne, California 91750

Prepared by:

Casey Tibbet, M.A. and Riordan Goodwin
LSA Associates, Inc.
1500 Iowa Avenue, Suite 200
Riverside, California 92507
(951) 781-9310

LSA Project No. LVR1801

National Archaeological Data Base Information:

Type of Study: Records Search, Survey, Architectural Evaluation
USGS Quadrangle: *San Dimas, California*
Acreage: ~25.8 acres

LSA

January 2019

MANAGEMENT SUMMARY

LSA conducted a Cultural Resources Assessment for the Damien High School Master Plan Update Project located at 2280 Damien Avenue in the City of La Verne (City), Los Angeles County, California. The assessment included a records search, archival research, field surveys, an impacts assessment, and this report. The subject property is approximately 25.8 acres and is currently developed with a high school, including 16 buildings/structures, fields, and parking areas. The Master Plan Update proposes demolition of the existing 5,972-square foot cafeteria facility and construction of four new buildings with a total increase of 73,100 square feet of building space as well as several alterations to the hardscaped areas and parking lots. This will be accomplished in three phases. Phase 1 proposes demolition of one tennis court and the existing 5,972-square foot lunch area comprising a 5,422-square foot shelter and a 550-square foot portable structure, and restriping of a parking lot to facilitate construction of a 7,500-square foot student center and a 5,000-square foot wrestling room. Phase 2 involves the demolition of five tennis courts and a portion of one parking lot, reconfiguration of a parking lot, and construction of a two-story-over-basement, 18,600-square foot classroom, a one-story, 27,500-square foot chapel/classrooms building, two sport courts, a new parking lot, and a grand promenade linking the north and south ends of the campus. Phase 3 proposes demolition of a 73-space parking lot and construction of a 14,500-square foot performing arts center near the center of campus. The City as Lead Agency for the project required this study as part of the environmental review process to comply with the California Environmental Quality Act (CEQA).

The purpose of the study is to provide the City with the necessary information and analysis to determine, as mandated by CEQA, whether the proposed project would cause substantial adverse changes to any historical/archaeological resources that may exist in or around the project area. In order to identify and evaluate such resources, LSA conducted a historical/archaeological resources records search, pursued historical background research, carried out intensive-level field surveys, and completed an impacts assessment using the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (SOIS).

Background research on Damien High School (formerly Bonita Union High School) indicates that the school opened to students in 1905 with one three-story Mission Revival style building. In 1911, another building was added and in the early 1920s, the school underwent a major expansion designed by architect John C. Austin. Austin's design established the quadrangle with the primary buildings flanking a central, rectangular open space (Anonymous 2017). In the 1930s, the school received public funding for new construction and seismic strengthening. This effort was undertaken by architect Frederick Kennedy, Jr. and, as part of the Federal Arts Project, the school also received a mural designed by Grace Clements. In 1959, the school was sold to the Catholic Archdiocese of Los Angeles, which established a boy's high school. Since then, several buildings have been altered or demolished and new buildings/structures have been added. However, in 1998, a historical resources survey identified a historic district within the campus and evaluated it as locally significant as a good example of a special element of the City's educational and social history, a focal point of Bonita Avenue that contributes to the visual quality and character of the area, and for the work of noted southern California architects. The Bonita Union High School Historic District has a period of

significance of 1934–1938 and includes six buildings/structures, five of which are contributors to the district. In addition, the Grace Clements mural was evaluated as individually significant.

Because the historic district and the mural are "historical resources" for purposes of CEQA, an impacts assessment using the SOIS was completed to determine whether the proposed Master Plan Update would result in any substantial adverse changes to the significance of the district and/or mural. Since the Master Plan only includes conceptual plans, the impacts analysis is fairly general and will likely need to be updated when more complete design plans are available. However, based on the information currently available, it appears that the Master Plan Update does have the potential to result in impacts to the historic district, and mitigation measures are recommended.

In addition, the project area is within a documented historic district with activities dating back to the first decade of the 20th century, is bracketed by three prehistoric habitation sites, and a Native American village site is historically indicated in the vicinity. Therefore, the proposed project area is highly sensitive for both prehistoric and historic subsurface archaeological resources.

RECOMMENDED MITIGATION MEASURES

- Prior to issuance of grading and/or building permits, design-level construction plans should be reviewed by an architectural historian who meets the Secretary of the Interior's Professional Qualification Standards to ensure compliance with the Secretary of the Interior's Standards for the Treatment of Historic Properties (Rehabilitation) numbers 2 and 9.
- The following notes should be added to the construction plans in order to ensure compliance with the Secretary of the Interior's Standards for the Treatment of Historic Properties (Rehabilitation) numbers 5, 6, and 7:
    - Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize the Grace Clements mural and the historic district and its contributing features will be preserved.
    - Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.
    - Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.
- In order to ensure compliance with the Secretary of the Interior's Standards for the Treatment of Historic Properties (Rehabilitation) number 8, all ground-disturbing activities shall be monitored by an archaeological field technician under the supervision of an archaeologist who meets the Secretary of the Interior's Professional Qualifications Standards.

STANDARD CONDITIONS

In the event archaeological materials are encountered during construction, all construction work shall be halted and a qualified archaeologist consulted to determine the appropriate treatment of the discovery (California Code of Regulations, Title 14, Chapter 3, Section 15064.5(f)).

In the event human remains are encountered, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be Native American, the County Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC. The MLD will have the opportunity to offer recommendations for the disposition of the remains.

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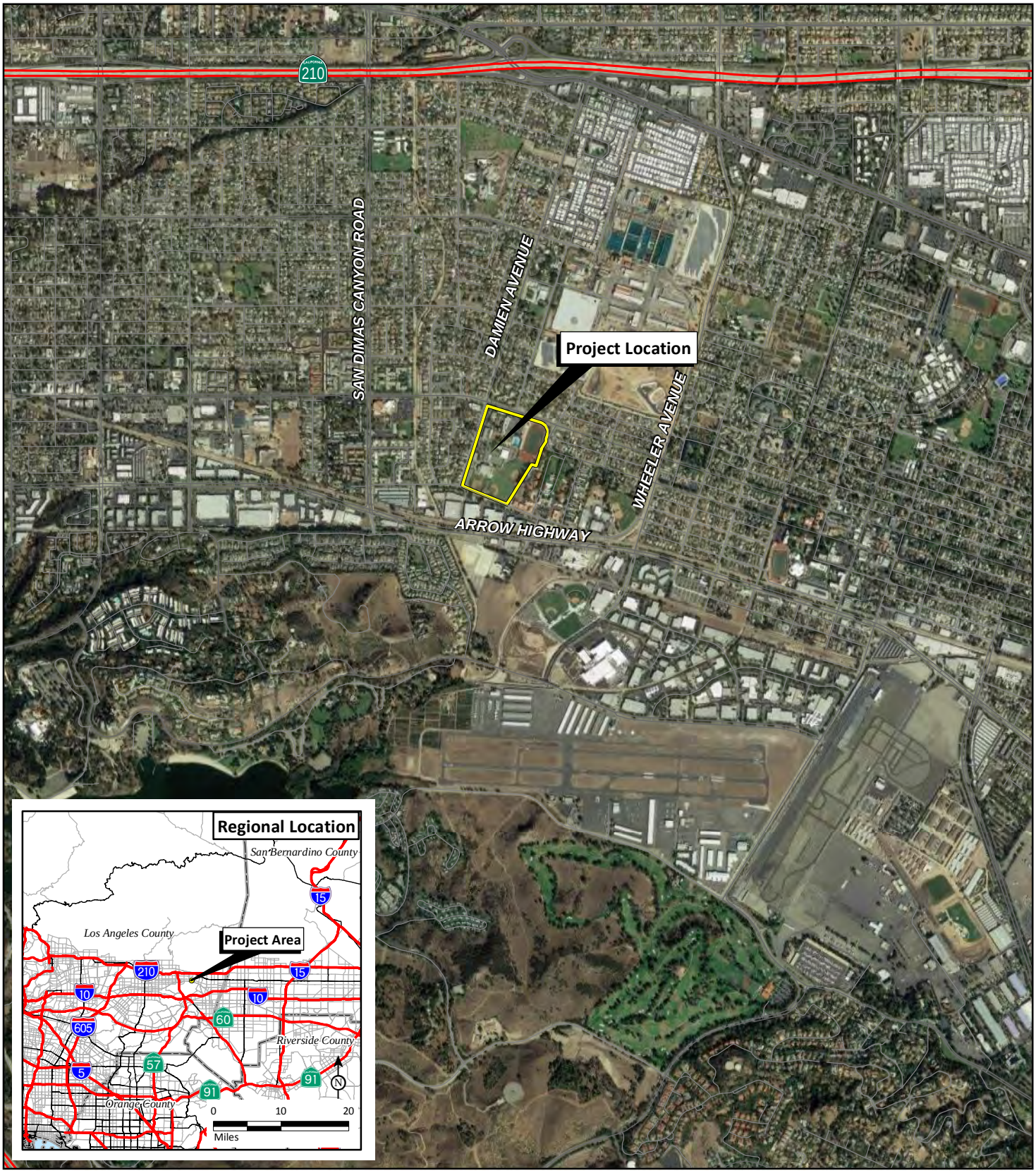
INTRODUCTION

At the request of the City of La Verne, LSA performed a Cultural Resources Assessment on approximately 25.8 acres in the City of La Verne (City), Los Angeles County, California (Figures 1 and 2). The subject property of the study, Assessor's Identification Number (AIN) 8381-036-029, is located at 2280 Damien Avenue, in Township 1 South, Range 9 West, San Bernardino Baseline and Meridian, as depicted on the United States Geological Survey (USGS) *San Dimas, California* 7.5-minute topographic quadrangle map. The study is part of the environmental review process for a proposed Master Plan Update. The City, as Lead Agency for the project, required the study in compliance with CEQA (PRC § 21000, et seq.).

LSA completed the present study to provide the City with the necessary information and analysis to determine, as mandated by CEQA, whether the proposed project would cause substantial adverse changes to any significant historical/archaeological resources that may exist in or around the project area. In order to identify and evaluate such resources, LSA conducted a historical/archaeological resources records search, pursued historical background research, and carried out intensive-level field surveys. This report is a complete account of the methods, results, and final conclusion of the study.



LSA

FIGURE 1

Damien High School Master Plan Update

Regional and Project Location

SOURCE: Google Earth, 2016; ESRI Streetmap, 2013.

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LSA

LEGEND

Project Boundary

FIGURE 2

N

0 100 200

FEET

Damien High School Master Plan Update
Cultural Resources Assessment

Project Area

SOURCE: Google Earth, 2017.

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SETTING

CURRENT NATURAL SETTING

The natural setting of the project vicinity is presented based on the underlying theoretical assumption that humans and human societies are in continual interaction with the physical environment. Being an integral and major part of the ecological system, humans adapt to the environment through technological and behavioral changes. Locations of archaeological sites are based on the constraints of these adaptations, whether it is proximity to a particular resource, topographical restrictions, or shelter and protection. Sites will also contain an assemblage of artifacts and ecofacts consistent with the particular interaction.

Hydrology

The project region is characterized by a temperate climate, with dry, hot summers and moderate winters. Rainfall ranges from 12 to 16 inches annually (Beck and Haase 1974). Precipitation usually occurs in the form of winter rain, with warm monsoonal showers in summer. An ephemeral drainage once transected the project area and the nearest natural reliable source of water is Live Oak Wash, which drains southwest approximately one mile north of the project.

Biology

At an average elevation of approximately 1,030 feet above mean sea level (amsl), the project is within the Lower Sonoran Life Zone of California (Schoenherr 1992), which ranges from below sea level to 3,500 feet amsl. Although the natural vegetation has been largely removed from the project by development, pioneer species such as hare oat, mustard, puncture vine, Russian thistle, and xeric grasses were noted on the periphery of the sports fields. Extensive fauna are known locally, including many endemic species of reptiles, birds, and insects.

Geology

The project area is located at the northern end of the Peninsular Ranges Geomorphic Province that extends from the Transverse Ranges to the tip of Baja California and includes the Los Angeles Basin (California Geological Survey 2002; Norris and Webb 1976). This region is characterized by a series of mountain ranges separated by northwest-trending valleys subparallel to faults branching from the San Andreas Fault. The geology of this province is similar to that of the Sierra Nevada, with numerous rock outcroppings useful to the Native Americans for resource milling, shelter, and ceremonial art.

CULTURAL SETTING

Prehistory

Chronologies of prehistoric cultural change in Southern California have been attempted numerous times, and several are reviewed in Moratto (1984). No single description is universally accepted as the various chronologies are based primarily on material developments identified by researchers familiar with sites in a particular region and variation exists essentially due to the differences in

those items found at the sites. Small differences occur over time and space, which combine to form patterns that are variously interpreted.

Currently, two primary regional culture chronology syntheses are commonly referenced in the archaeological literature. The first, Wallace (1955), describes four cultural horizons or time periods: Horizon I – Early Man (9000–6000 BC), Horizon II – Milling Stone Assemblages (6000–3000 BC), Horizon III – Intermediate Cultures (3000 BC–AD 500), and Horizon IV – Late Prehistoric Cultures (AD 500–historic contact). This chronology was refined (Wallace 1978) using absolute chronological dates obtained after 1955.

The second cultural chronology (Warren 1968) is based broadly on Southern California prehistoric cultures and was also revised (Warren 1984; Warren and Crabtree 1986). Warren's (1984) chronology includes five periods in prehistory: Lake Mojave (7000–5000 BC), Pinto (5000–2000 BC), Gypsum (2000 BC–AD 500), Saratoga Springs (AD 500–1200), and Protohistoric (AD 1200–historic contact). Changes in settlement pattern and subsistence focus are viewed as cultural adaptations to a changing environment, which begins with gradual environmental warming in the late Pleistocene, continues with the desiccation of the desert lakes, followed by a brief return to pluvial conditions, and concludes with a general warming and drying trend, with periodic reversals that continue to the present (Warren and Crabtree 1986).

After AD 500, there was an influx of Native American groups from the eastern deserts into southern California. These groups brought changes in subsistence focus and associated technologies, as well as burial practices. These cultural changes along with the group migrations are known as the Shoshonean Intrusion or Shoshonean Wedge (Kroeber 1925; Koerper 1979) and the Takic Wedge (Bergin and Ferraro 1999). The term Takic Wedge refers to the wedge of Takic culture groups that moved to the coast, displacing tribes of the Hokan and Yuman language stocks to the north and south (Shipley 1978). The ethnographically recorded Luiseño, Juaneño, and Gabrielino are thought to be the descendants of prehistoric Takic populations that settled along the coast during the Late Prehistoric Period, or perhaps even earlier. The Serrano and Cahuilla, more distant from the coast, are also Takic-speaking tribes within this wedge.

Ethnography

The project area is within the traditional cultural territory of the Gabrielino (Kroeber 1925; Heizer 1968). Tribal territories were somewhat fluid and changed over time. The first written accounts of the Gabrielino are attributed to the Spanish mission fathers, and later documentation was by Johnston (1962), Blackburn (1962–1963), Hudson (1971), and others.

Gabrielino

The territory of the Gabrielino included portions of Los Angeles, Orange, and San Bernardino Counties during ethnohistoric times, and also extended inland into northwestern Riverside County (Kroeber 1925; Heizer 1968). It encompassed an extremely diverse environment that included coastal beaches, lagoons and marshes, inland river valleys, foothills and mountains (Bean and Shipek 1978).

The Gabrielino caught and collected seasonally available food resources, and led a semi-sedentary lifestyle, living in permanent communities along inland watercourses and coastal estuaries. Individuals from these villages took advantage of the varied resources available. Groups moved to temporary camps on a seasonal rotation to collect plant foods such as acorns, buckwheat, chía, berries, and fruits, and to conduct communal rabbit and deer hunts. They also established seasonal camps along the coast and near bays and estuaries to gather shellfish and hunt waterfowl (Hudson 1971).

The Gabrielino lived in small communities, which were the focus of family life. Patrilineally linked, extended families occupied each village (Kroeber 1925; Bean and Smith 1978). Both clans and villages were apparently exogamous, marrying individuals from outside the clan or village (Heizer 1968). Gabrielino villages were politically independent and were administered by a chief, who inherited his position from his father. Shamans guided religious and medical activities, while group hunting or fishing was supervised by individual male specialists (Bean and Smith 1978a).

The nearest historically known Native American village to the project area was the Gabrielino community of *Tooypinga* (also described to Alfred Kroeber as *Toibi*), located approximately 2.5 miles to the south in the general area of Pomona (Kroeber 1925; McCawley 1996).

Historical Overview

In 1774, an expedition of non-native people on their way to San Francisco used the mission trail (now Arrow Highway) to cross the Pomona Valley and the area that is now La Verne (La Verne Historical Society n.d.). Six decades later, after Mexico gained control of California, the area was part of the 1837 Rancho San Jose land grant that was given to Ygnacio Palomares and Ricardo Vejar (Anonymous 2018). In 1852, after the United States gained control of California, Palomares and Vejar filed a claim for the Rancho, which was patented in 1875 (Ibid.). Palomares and Vejar used the lands primarily for sheep and cattle operations, as well as growing crops, until the severe drought in the mid-1860s, which decimated the sheep and cattle industries (Ibid.; Brackett 1920). In 1864, Palomares died and Vejar lost his share of the Rancho to foreclosure (Ibid.). In the following years, with the Valley economy in near ruin, the Ranchos began to disintegrate and the livestock and grain industries began being replaced by grape crops and, later, olive groves (Brackett 1920; Dumke 1991).

In the late 1860s and 1870s, large sheep and cattle ranches began transitioning to small farms and more intensive agricultural development. In 1876, the Southern Pacific Railroad completed a line from San Francisco to Los Angeles and soon railroads were branching out across southern California (Landis 2010). This was followed by "extensive advertising and publicity campaign[s]," which helped create an unprecedented land boom in the 1880s (Dumke 1991:28). In 1887, "Lordsburg was one of 25 settlements established" along Santa Fe's San Bernardino to Los Angeles line (City of La Verne 1992:3).

Named for its founder Isaac Wilson Lord, Lordsburg (now La Verne) boasted a large hotel (1888) and parcels of land for sale, but the community experienced one of the few failures of attempted land development in southern California when the boom burst shortly after the town was founded (Heckman 2000; City of La Verne 1992). No paying guests ever stayed in the 130-room, Queen Anne

style hotel, which was located less than one mile east of the project area (La Verne Historical Society n.d.). In 1889, the Santa Fe brought in one of its most successful tour conductors, George McDonaugh, in an effort to generate interest in some of the struggling southern California towns along its routes (La Verne Historical Society n.d.; City of La Verne 1992). McDonaugh, who had worked in the Midwest and had helped settle German Baptist Brethren in Kansas and Texas, began advertising free tours in the *Gospel Messenger* which was commonly read in Brethren homes (City of La Verne 1992). In 1889, M.M. Eshelman toured Lordsburg and McDonaugh convinced him that the town would be suitable for a colony and a college (City of La Verne 1992:4). In 1890, Eshelman and other Brethren settled in Lordsburg and after one year approximately 100 members had relocated to the community (Ibid.). That same year (1890), the first navel oranges were planted in Lordsburg and over the next several decades the citrus industry would become the dominant economic force in the area (City of La Verne 1992).

While the citrus industry was growing, so was the college. In 1891, the Brethren opened Lordsburg College in Lord's hotel and were successful in attracting a sufficient number of settlers from their sect to establish a congregation and sustain the community (Heckman 2000). After 10 years, the college closed for a year (1900–1901), but reopened in 1902 under a new president who made expansion his primary goal (Wilson Library 1991). The area had grown enough that, in 1905, Bonita Union High School (now Damien High School) was opened serving the communities of San Dimas, Lordsburg, and La Verne (a nearby citrus-growing community) (Tearnen and Bricker 1998). By 1908, the college had full ownership of the hotel and land adjacent to it and, in 1918, the first new building, a women's dormitory, was constructed (Wilson Library 1991). In 1917, after the death of Isaac Lord, the college and Lordsburg were renamed La Verne (Heckman 2000). The last service was held in the old hotel in 1926 ending the use of that building by the college (Wilson Library 1991). Later, the hotel was torn down and the materials were reused in other buildings on campus and throughout the community (Wilson Library 1991).

Citriculture was the economic base of the community until the 1940s, when the local citrus industry began to decline due to an unknown blight. After World War II, the groves gave way to residential development and the community truly became a college town (City of La Verne 2018). However, into the 1990s, many reminders of the citrus heritage remained, most notably in the form of old packinghouses along Arrow Highway (City of La Verne 1992). The original commercial center around D and First Streets still has numerous historic-period buildings and the city is filled with early 20th century homes.

METHODS

RECORDS SEARCH

On June 7, 2018, the cultural resources records search was conducted for the project area by the South Central Coastal Information Center (SCCIC) located at California State University, Fullerton. It included a review of all recorded historic and prehistoric archaeological sites within one mile of the project, as well as a review of known cultural resource survey and excavation reports. In addition, the California State Historic Property Data File (HPD), which includes the National Register of Historic Places (National Register), California Register of Historical Resources (California Register), California Historical Landmarks (CHL), and California Points of Historical Interest (CPHI), was searched.

RESEARCH

LSA completed research to develop a brief history of La Verne and conducted background research on the history and development of the campus. Research methodology focused on the review of a variety of primary and secondary source materials and included, but was not limited to, previous reports on the school, online sources, published literature in local and regional history, news articles, historic aerial photographs, and historic maps.

ARCHAEOLOGICAL FIELD SURVEY

On June 19, 2018, LSA Archaeologist Riordan Goodwin completed a pedestrian survey of the historic district within the campus. Special attention was paid to areas of exposed soil for surface artifacts and features for artifacts and evidence of archaeosols. The purpose of this survey was to identify and document, prior to the beginning of ground-disturbing activities, any cultural residues and thus also to identify any area(s) that might be sensitive for buried cultural resources.

ARCHITECTURAL FIELD SURVEY

On July 19, 2018, LSA Architectural Historian Casey Tibbet conducted a reconnaissance-level architectural survey of the historic district within the campus. The purpose of the survey was to observe the current condition and integrity of the buildings/structures/features in the district. Special attention was paid to the setting and character-defining features. During the survey, Ms. Tibbet took photographs of the exteriors of the buildings/structures, as well as other features, such as the individually significant Grace Clements mural and the trees along Bonita Avenue. In addition, she walked the campus to identify visual and other potential impacts associated with the proposed Master Plan Update.

RESULTS

RECORDS SEARCH

Results of the June 7, 2018, records search at the SCCIC indicate there have been 42 previous cultural resources studies conducted within a one-mile radius of the project area, none of which included the project area. Although no cultural resources have been documented in the project area, three prehistoric habitation sites (19-00075, 19-001098, and 19-0002787), one historic period ethnic minority site (19-002562 with archaeological features and standing structures) and more than 20 historic period built environment resources, including University of La Verne (19-187724 through 19-187730) and the La Verne Citrus Packing District (19-189206), have been documented within one mile. Most of the built environment resources are listed in the Los Angeles County Historic Properties Directory. The nearest resource documented on a site record (approximately 200 meters/ 700 feet west) is a large prehistoric habitation site known as "Cienega Mud Springs" (19-00075) at which bedrock milling, hearth features, a ceramic scatter, and habitation debris were documented (Eberhart 1951; Blackburn 1965).

RESEARCH

The history of Bonita Union High School (now Damien High School) was well documented in a 1998 study (Tearnen and Bricker 1998) completed for a previous Master Plan. The following historical background provides some additional details, but relies heavily on the work completed for the earlier study.

In February 1904, a news article announced that the "directors of Bonita Union High School have issued a letter to the taxpayers of La Verne, San Dimas, and Lordsburg" asking them to support the proposed $30,000 bond issue for construction of the school (*Los Angeles Times* 1904a). The bond was approved and, according to follow-up articles, design of the new Mission Revival style school was underway by Los Angeles architects Burnham and Bliesner (*Los Angeles Times* 1904b). The school would be located "midway between San Dimas and Lordsburg" (Ibid.). Initially, it was reported that the school would be two stories with six classrooms and cost $18,000, but 10 days later a report said the school would be two stories with a basement and would include physical and chemical laboratories, a gymnasium, an assembly hall, a library, an office, a hospital, recitation rooms, and apartments for history, English, and modern languages and would cost $30,000 (*Los Angeles Times* 1904b and 1904c). The later article was accompanied by a rendering of the school (Figure 3).

In 1905, the three-story Mission Revival style school, which was located at the southeast corner of Bonita Avenue and Damien Avenue, opened eight months behind schedule amidst accusations of "graft" and "shoddy work" (Tearnen and Bricker 1998; *Los Angeles Times* 1905; Figures 3 and 4). In 1911, a one-story Prairie-style domestic science building, designed by Davis and Higgs, was built and, in the early 1920s, the school underwent a major expansion designed by architect John C.W. Austin (Tearnen and Bricker 1998). Austin was born in England in 1870 and moved to the United States in the early 1890s, settling in Los Angeles in 1894 (Tearnen and Bricker 1998; Pacific Coast Architecture Database [PCAD] 2005–2015). He was a partner in Austin and Skilling, Architects, in Los Angeles from about 1896 to 1899 and subsequently had several other partnerships (PCAD 2005–2015).

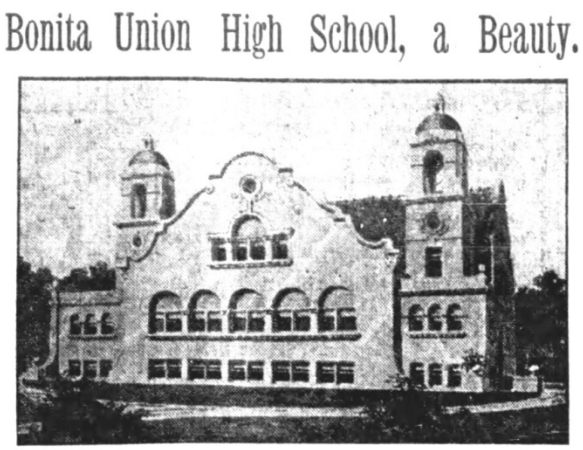


Figure 3: Rendering of the proposed Bonita Union High School
Source: *Los Angeles Times* 1904c.

Figure 4: Bonita Union High School circa 1905
Source: USC Digital Library (2018).

Although two of the most iconic buildings he helped design are Los Angeles City Hall (1926–1928) and Griffith Park Observatory and Planetarium (1934–1935), during the 1920s he became known as a leader in school architecture (PCAD 2005–2015; Tearnen and Bricker 1998).

In October 1920, a news article announced that following the passage of a $250,000 bond issue, the William-Brent Company had been awarded a contract to remodel the domestic science building and build an addition with "a cafeteria, a sewing department, cooking and serving rooms and **a** faculty dining-room" at a cost of about $24,000 (*Los Angeles Times* 1920). It went on to state that the Master Plan for the school included construction of the following buildings: a manual arts building, a new administration building, an auditorium, a gymnasium, a swimming pool, a library, and reconstruction of the existing buildings (Ibid.). Austin's design for Bonita Union High School established the quadrangle with the primary buildings flanking a central, rectangular open space (Tearnen and Bricker 1998). "Austin designed the new buildings in the Spanish Colonial Revival style, perceived at the time as an authentic interpretation of the Hispanic tradition in architecture, which had been initiated early in the century by the Mission Revival style" (Tearnen and Bricker 1998:6).

The Master Plan was completed in 1922 (Tearnen and Bricker 1998). A library was added to the north end of the original building and the auditorium was connected to the library via a covered arcaded walkway, which included a new gabled gateway entrance to the campus (Ibid.). The south end of the quadrangle was anchored by the new two-story administration/science building (Ibid.). Wood and auto shops were also built southwest of the quadrangle, but the swimming pool was not constructed (Ibid.).

In the 1930s, the school received public funding for new construction and seismic strengthening. This effort was undertaken by architect Frederick Kennedy, Jr. and, as part of the Federal Arts Project, the school also received a mural designed by Grace Clements. In 1959, the school was sold to the Catholic Archdiocese of Los Angeles, which established a boy's high school. Since then several buildings have been altered or demolished and new buildings/structures have been added. The original 1905 building is no longer extant.

Previous Studies

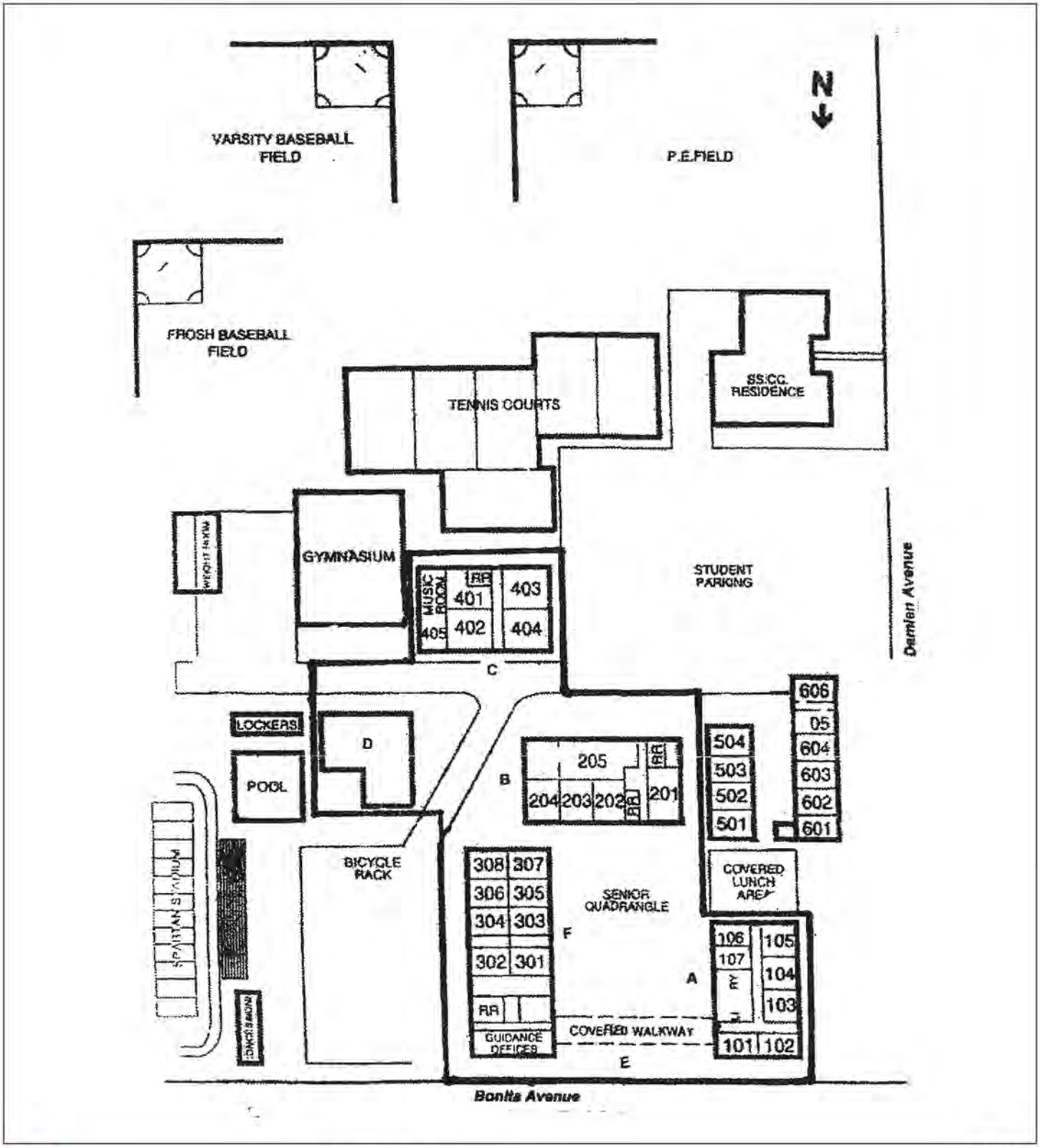
In 1998, Janet Tearnen, M.A. and Lauren Weiss Bricker, Ph.D., prepared a Historic Resource Survey for Damien High School. The purpose of that study was to evaluate the school for historic significance and address potential impacts related to the Master Plan that was proposed at that time. As a result of that effort, a locally significant historic district was identified within the campus. Buildings and features that were identified as contributing to the district are the 100 Building, 200 Building, 400 Building, Spartan Hall (former girls gym), and the arcade joining the 100 and 300 Buildings (Figure 5). In addition, the Grace Clements mural was determined individually significant. This study indicated that if the 300 Building was restored, it would be a contributor to the district. With regard to the Master Plan proposed at that time and its potential impacts to the historic district, the study recommended that new construction and/or signage be compatible with the character-defining features of the district, that any historically significant trees and/or other plants be retained, and that any new plans for alterations, repairs, new construction, and/or demolition be reviewed for potential direct and indirect impacts to the district. In addition, the study encouraged the school to repair/rehabilitate existing historic-period buildings based on original drawings. However, it appears that the Master Plan reviewed at that time was not implemented and the historic-period buildings were not repaired/rehabilitated as recommended.

ARCHAEOLOGICAL FIELD SURVEY/SENSITIVITY

No archaeological resources (or original soil surfaces) were identified within the Master Plan Update Project area. However, the proposed project involves grading and excavation within a documented historic district in which construction activities took place from the early 1900s into the 1940s. Much of this time period was prior to the advent of indoor plumbing and institutional waste collection, so there is the potential for buried privy (outhouse) pits and substantial intact pre–World War I to post-World War II refuse deposits (Strudwick 2018). Also, the project area is bracketed by three prehistoric habitation sites. Site 19-00075 is only 200 meters away from the property boundary. Sites 19-002787 and 19-001089 are 550 meters and 640 meters away, respectively. In addition, a Native American village site is historically indicated in the vicinity of the project area (within approximately two miles). Furthermore, grading for building construction did not reach current depths until the 1960s, so there is a greater possibility of encountering intact archaeological residues on properties that were constructed prior to this time. Therefore, the project has the potential to affect undocumented prehistoric and historic period archaeological resources, and sensitivity for subsurface finds is high.

ARCHITECTURAL FIELD SURVEY

As previously discussed, a field survey of the campus was conducted to assess the condition and integrity of the campus and the historic district specifically and to determine whether the proposed Master Plan Update would result in any substantial adverse changes to the significance of the district (Figures 6 through 22). In general, there appear to have been no changes to the campus that have diminished the integrity of the district since it was documented and evaluated in 1998.



LSA

Bonita Union High School Historic District

Contributing Buildings
A. 100 Building – 1936
B. 200 Building – 1934-35
C. 400 Building – 1938; music room addition 1994
D. Old Girls' Gym – 1936

Contributing Structure
E. Arcade – 1920-22

Non-Contributing Building
F. 300 Building – 1922; south end addition 1961; north end alteration 1961

FIGURE 5

Damien High School Master Plan Update
Cultural Resources Assessment

Bonita Union High School District

SOURCE: Tearnen, J. and Bricker, L.W. (1998), Historic Resources Survey for Damien High School, 2280 Damien Avenue, La Verne, CA.
I:\LVR1801\Reports\Cultural\fig5_BonitaUnionHSD_08-22-2018.psd

Figure 6: Arcaded walkway, entry, and 100 Building. View to the west (July 19, 2018).

Figure 7: Arcaded walkway and 100 Building. View to the north (July 19, 2018).

Figure 8: South and east elevations of 100 Building. View to the northwest (July 19, 2018).

Figure 9: Lunch shelter and covered walkway attached to 100 Building. The lunch shelter is proposed to be demolished to facilitate construction of a new Student Center. View to the southwest (July 19, 2018).

Figure 10: West and south elevations of 100 Building. View to the northeast (July 19, 2018).

Figure 11: West (rear) Elevation of structure to be demolished. Location of proposed Student Center. View to the northeast (July 19, 2018).

Figure 12: South and east elevations of the 200 Building. View to the northwest (July 19, 2018).

Figure 13: Portion of quadrangle and north elevation of 200 Building. View to the south (July 19, 2018).

Figure 14: Spartan Hall west and south elevations. View to the northeast (July 19, 2018).

Figure 15: Overview of Spartan Hall. View to the south showing the grassy area where the new Science Building is proposed to be constructed (July 19, 2018).

Figure 16: Grace Clements Mural. North elevation of the 400 Building, view to the south (July 19, 2018).

Figure 17: 400 Building north and west elevations. View to the southeast (July 19, 2018)

Figure 18: View west toward the proposed Performing Arts Center location (July 19, 2018).

Figure 19: View southeast toward proposed Performing Arts Center location. Taken from near Spartan Hall (July 19, 2018).

Figure 20: Location of the proposed Chapel/Classrooms Building. Tennis courts will be demolished and views of the 400 Building and Events Center will be blocked from this angle. View to the southeast (July 19, 2018).

Figure 21: View south of proposed Promenade location. The Athletic Center is in the background (July 19, 2018).

Figure 22: View north of proposed Promenade location. Taken from the Athletic Center (July 19, 2018).

IMPACTS ASSESSMENT

As discussed above, a portion of Damien High School was previously evaluated as a historic district that is eligible for local listing as a good example of a Works Progress Administration (WPA)-era school project in La Verne. In addition, the Grace Clements mural is individually eligible for local listing as a work of public art. Therefore, the historic district and the mural are historical resources under CEQA and the potential project impacts must be analyzed.

CEQA establishes that "a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment" (PRC §21084.1). "Substantial adverse change," according to PRC §5020.1(q), "means demolition, destruction, relocation, or alteration such that the significance of a historical resource would be impaired."

CHARACTER-DEFINING FEATURES AND CONTRIBUTORS

"Every old building is unique, with its own identity and its own distinctive character. Character refers to all those visual aspects and physical features that comprise the appearance of every historic building" and includes "the overall shape of the building, its materials, craftsmanship, decorative details, interior spaces and features, as well as the various aspects of its site and environment" (Nelson 1988:1). It is important to identify character-defining features of a historical resource because the alteration or removal of these features could result in substantial adverse changes to the significance of the resource.

Based on the previous study (Tearnen and Bricker 1998), the following are the character-defining features of and contributors to the Bonita Union High School Historic District:

- **Siting:** Diverse siting solutions are tailored to variations in topography.
    - The level area at the northwest section of the campus is the site of the central quadrangle. The quadrangle is framed by buildings along its perimeter; arcades and covered walkways serve as transitions between the buildings and open space.
    - The campus site slopes to the south/southeast. The orthogonal plan of quadrangle is perpetuated south and southeast of the quad through the locations of pedestrian paths, vehicular roads, and siting relationships between buildings. Building sites at lower elevations to the quadrangle allow greater flexibility of height without adverse impact on the quadrangle.
- **Architectural Character:**
    - Overall horizontal orientation to the appearance of the campus buildings results from several factors: low to medium-pitched hip and gable, or flat roofs; wide door and window openings; more vertically oriented buildings are set into sloping sites so that visual impact to central quad is minimized.

- Architectural imagery reflects duality of aesthetic in the 1930s: Mediterranean Revival merging with PWA Moderne. Both share simplicity of form, stucco walls, and limited ornamentation (where present, it is concentrated at entrance and window openings).
- Specific features of the Hispanic/Mediterranean Revival Imagery include the use of arched openings and terra cotta tile-covered roofs.
- Specific features of the PWA Moderne imagery include large expanses of multi-paned, double hung and casement windows, and buttress-like definition of bays and corners.

- **Landscape:**
  - Grass lawn, manicured shrubs, and smaller trees frame building openings.
  - There is a variety of species of trees, with historic-period trees located along Bonita Avenue.
- **Contributing buildings and features:**
  - 100 Building;
  - 200 Building;
  - 400 Building (including individually significant mural);
  - Arcade (between 100 Building and 300 Building); and
  - Old Girls' Gym (Spartan Hall).

PROJECT DESCRIPTION

The proposed Master Plan Update for Damien High School includes 73,100 square feet of new construction and demolition of 5,972 square feet, with an increase in parking of four spaces (Appendix A). It will be completed in three phases over a period of approximately 10 years (2019–2029), depending on funding. Detailed plans have not been developed, but each phase is described in general below and some conceptual drawings have been provided (Appendix B).

Phase 1

Phase 1 entails the demolition of the non-contributing dining shelter south of Building 100 and removal of the non-contributing portable kitchen structure. These functions will be replaced by a new 7,500-square foot Student Center that will have food service as well as allowing a venue for formal and informal student gatherings, meetings, and receptions. In addition, one tennis court will be demolished to facilitate construction of a 5,000-square foot wrestling room, which will be located south of the existing Event Center building.

The existing parking area west of the 100 Building will be restriped as 90-degree parking meeting the City of La Verne standard stall size (9 × 19 feet) with 25 feet back-up and adding a handicapped van accessible space. This restriping will result in a loss of two parking spaces.

Phase 2

Phase 2 removes the remaining five tennis courts and the 73-space parking lot east of the Event Center Building. The parking lot will be replaced by a new 118-space parking lot south of the

Gymnasium and a grand promenade will be created to link the north and south ends of campus establishing gathering areas, quads, and a plaza at the gymnasium.

Phase 2 new construction includes a two-story-over-basement, 18,600-square foot Science Building with eight new science classrooms, offices, and preparation rooms on the upper two levels, and two team rooms on the basement level by the athletic venues. A new one-story 27,500-square foot Chapel/Classrooms Building will include a 220-seat chapel, college counseling offices, academic classrooms, a band room, snack bar, and student store.

The parking lot south of the 600 Building and west of the 400 Building will be redesigned to establish a welcoming and secure entrance to the campus. A net 84 parking spaces will be added to the campus in this phase.

Phase 3

Phase 3 adds a 400-seat, 14,500-square foot Performing Arts Center east of the Events Center and redesigns the northwest parking lot. The landscaping and restriping of the parking lot will result in a loss of six spaces.

PROJECT ANALYSIS

The *Secretary of the Interior's Standards (SOIS) for the Treatment of Historic Properties* are typically used to analyze project impacts. Projects that meet the SOIS are considered to be mitigated to a level that is less than significant. However, the proposed Master Plan only includes conceptual designs for the proposed new buildings and features and therefore cannot be fully analyzed under the SOIS. The following is intended to reduce potential impacts to the extent possible with the current level of design information and to provide information about potential issues. Further analysis will need to be done when design plans are in a more final state.

Standards for Rehabilitation

1. *A property shall be used for its historic purpose or be placed in a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships.*

   Phases 1–3. The proposed project complies with this Standard. No change to the historic use of the property is proposed. The property will continue to be used as a high school campus. Therefore, the proposed Master Plan is in compliance with this Standard.

2. *The historic character of a property shall be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.*

   Phase 1. This phase involves the construction of a 7,500-square foot Student Center adjacent to the 100 Building and the quadrangle. Buildings around the quadrangle are characterized by a horizontal orientation with low to medium-pitched hipped and gable roofs. The existing, non-contributing lunch shelter is very unobtrusive. It has a covered patio with a very low-pitched canopy adjacent to the quadrangle and is partially screened from view by eucalyptus and cypress trees. The conceptual site plan shows that this will be replaced by a two-story, flat-

roofed building with full-height, wide arched windows facing the quad and a wide, full-height glass entrance angled to the southeast. The use of large glass window and door openings may give it a somewhat "transparent" appearance. The siting of the building, which appears to have the same setback from the quad as the 100 Building, will not alter the spatial relationships of the historic district and the "transparency" of the building may minimize its visual intrusion and potential impact on the historic character of the district. However, the design is conceptual and no specifics, such as materials and colors, have been provided. Therefore, it is recommended that the eventual design be compatible with the character-defining features of the district, including colors and materials, and that consideration be given to landscaping that would soften/screen its appearance from the quad so that it does not overshadow or compete with the contributors.

Phase 1 also proposes construction of a 5,000-square foot wrestling room south of the existing Event Center building. This location is outside the historic district and will not remove or change any historically significant features, spaces, or spatial relationships. However, the current design of the building is conceptual; therefore, to ensure compliance with this Standard, it is recommended that further analysis be completed when more detailed design plans are available.

Under Phase 1, there would be no impact to the Grace Clements mural.

Phase 2. This phase proposes construction of a grand promenade linking the north and south ends of the campus. This is essentially a wide walkway that will connect existing walkways and/or create new walkways where there is currently parking. It does not appear that it will adversely affect the historic district or the Grace Clements mural.

This phase also proposes an 18,600-square foot Science Building adjacent to the north of Spartan Hall, which is a contributor to the district. A building in this location will change the historic character and spatial relationships of the district by replacing an open view and landscaped area with a new building that will block the view of Spartan Hall from the north, including from Bonita Avenue. Based on the conceptual site plan, the building will extend further west than Spartan Hall and may visually cut it off from the 200 Building at the south end of the quadrangle. Although the conceptual design includes some pilasters that reference the adjacent contributing building, the scale and massing of the building do not appear to be compatible with Spartan Hall or the historic district. It is recommended that this be analyzed more fully when design plans are further along.

In addition, Phase 2 proposes a new one-story 27,500-square foot Chapel/Classrooms Building south of the 400 Building where there are currently tennis courts and redesign of the parking lot south of the 600 Building and west of the 400 Building. These buildings are proposed to be located outside of the historic district and will be separated from the 400 Building by a lawn area. Although the proposed new building is not anticipated to result in removal of any distinctive materials or alteration of features, spaces, or spatial relationships that characterize the historic district or its contributors, it is recommended that further analysis be completed when the building design is more complete to ensure that no important spatial relationships will be compromised. The parking lot redesign is not anticipated to have any impact on the historic

District, and neither the parking lot redesign nor the proposed Chapel/Classrooms Building will affect the Grace Clements mural.

Phase 3. This phase proposes a 400-seat, 14,500-square foot Performing Arts Center east of the Events Center and redesign of the northwest parking lot. Neither of these is anticipated to result in the removal of distinctive materials or alteration of features, spaces, or spatial relationships that characterize the historic district.

3. *Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.*

   Phases 1–3. The project complies with this Standard. All of the conceptual designs for the proposed new buildings are clearly modern and do not attempt to create a false sense of historical development.

4. *Changes to a property that have acquired historic significance in their own right will be retained and preserved.*

   Phases 1–3. The project complies with this Standard. None of the work proposed in Phases 1 through 3 will remove buildings or features that have acquired historic significance.

5. *Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.*

   Phases 1–3. To ensure compliance with this Standard, it is recommended that the following note be added to all project plans for each phase: Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize the Grace Clements mural and the historic district and its contributing features will be preserved.

6. *Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.*

   Phases 1–3. To ensure compliance with this Standard, it is recommended that the following note be added to all project plans for each phase: Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.

7. *Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.*

   Phases 1–3. To ensure compliance with this Standard, it is recommended that the following note be added to all project plans for each phase: Chemical or physical treatments, if

appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.

8. *Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.*

   Phases 1–3. No archaeological resources were identified. However, a large prehistoric habitation site was documented in the immediate vicinity and there have been buildings within the project area since the early 1900s; therefore, there is a high potential for impacts to previously undocumented subsurface resources; therefore, to ensure compliance with this Standard, monitoring of all earthmoving activities by a qualified archaeologist is recommended.

9. *New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work shall be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.*

   No new additions or exterior alterations are proposed to any of the district contributors or to the Grace Clements mural. However, new construction is proposed within and adjacent to the district. This construction could change the historic spatial relationships and may be incompatible with the district in terms of size, scale, and massing.

   Phase 1. The proposed 7,500-square foot Student Center will replace the existing lunch area adjacent to the 100 Building and the quadrangle. However, the new building will be two stories where the existing building is a very low profile one-story. Although the scale and massing is similar to the 100 Building and others on the campus, the two-story design will change the existing, historical spatial relationship. Because the design is conceptual, the potential impact cannot be fully analyzed. Therefore, it is recommended that the eventual design be reviewed to ensure that it complies with this Standard. Similarly, although the proposed 5,000-square foot wrestling room is not anticipated to result in the alteration of any important spatial relationships that characterize the historic district or its contributors, it is recommended that further analysis be completed when the building design is more complete to ensure that the scale and massing are compatible with the district and that no important spatial relationships will be compromised.

   Phase 2. A number of changes are proposed under this phase including construction of a grand promenade, a Science Building, and a Chapel/Classrooms Building, as well as reconfiguration of parking. As previously discussed, the proposed Science Building will be constructed next to Spartan Hall where there is currently a landscaped area. A building in this location will change the historic character and spatial relationships of the district. In addition, the scale and massing of the building does not appear to be compatible with Spartan Hall or the historic district. It is recommended that this be analyzed more fully when design plans are further along.

   The proposed Chapel/Classrooms Building will be located south of the 400 Building where there are currently tennis courts. This building is proposed to be located outside of the historic district and a will be separated from the 400 Building by a lawn area. Although it is not anticipated to result in the alteration of any important spatial relationships that characterize the historic

district or its contributors, it is recommended that further analysis be completed when the building design is more complete to ensure that the scale and massing are compatible with the district and that no important spatial relationships will be compromised. The parking lot redesign is not anticipated to have any impact on the historic district.

Phase 3. This phase proposes a new Performing Arts Center east of the Events Center and redesign of the northwest parking lot. Neither of these is anticipated to result in changes to any important spatial relationships that characterize the historic district.

10. *New additions and adjacent or related new construction will be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.*

    Phases 1–3. The proposed project is in compliance with this Standard. Based on the conceptual plans, it appears that the new construction proposed as part of the current Master Plan could be removed in the future without changing the essential form and integrity of the historic district and its environment or the Grace Clements mural.

ANALYSIS OF CUMULATIVE IMPACTS

Pursuant to the *CEQA Guidelines* Section 15355, cumulative impacts "refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." This includes the current project as well as any "foreseeable probable future projects" (*CEQA Guidelines* 2018). LSA is not aware of any other projects proposed within the project area.

RECOMMENDATIONS

Based on the research and field surveys, the there are two "historical resources" as defined by CEQA within the project area. These are the Bonita Union High School Historic District and the Grace Clements mural. In order to determine whether the proposed project will result in any substantial adverse changes to the significance of either historical resource, an impacts assessment was completed in compliance with the *Secretary of the Interior's Standards (SOIS) for the Treatment of Historic Properties (Rehabilitation).* As a result of that analysis, mitigation measures are recommended to ensure compliance with the SOIS. Projects that meet the SOIS are considered to be mitigated to a level that is less than significant.

The project area has been subject to documented human occupation from construction and operation activities associated with the Bonita Union High School Historic District, with activities dating back to the first decade of the 20th century. Additionally, the campus is bracketed by three prehistoric habitation sites and a Native American village site is historically indicated in the vicinity. Therefore, the project area is sensitive for both prehistoric and historic subsurface archaeological resources. Monitoring of all earthmoving activities by a qualified archaeological technician is recommended.

RECOMMENDED MITIGATION MEASURES

- Prior to issuance of grading and/or building permits, design-level construction plans should be reviewed by an architectural historian who meets the Secretary of the Interior's Professional Qualification Standards to ensure compliance with the Secretary of the Interior's Standards for the Treatment of Historic Properties (Rehabilitation) numbers 2 and 9.
- The following notes should be added to the construction plans in order to ensure compliance with the Secretary of the Interior's Standards for the Treatment of Historic Properties (Rehabilitation) numbers 5, 6, and 7:
    - Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize the Grace Clements mural and the historic district and its contributing features will be preserved.
    - Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.
    - Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.

    To ensure compliance with the Secretary of the Interior's Standards for the Treatment of Historic Properties (Rehabilitation) number 8, all ground-disturbing activities shall be monitored by an archaeological field technician under the supervision of an archaeologist who meets the Secretary of the Interior's Professional Qualifications Standards.

STANDARD CONDITIONS

In the event archaeological materials are encountered during construction, all construction work shall be halted and a qualified archaeologist consulted to determine the appropriate treatment of the discovery (California Code of Regulations, Title 14, Chapter 3, Section 15064.5(f)).

In the event human remains are encountered, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be Native American, the County Coroner will notify the NAHC, which will determine and notify an MLD. With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC. The MLD will have the opportunity to offer recommendations for the disposition of the remains.

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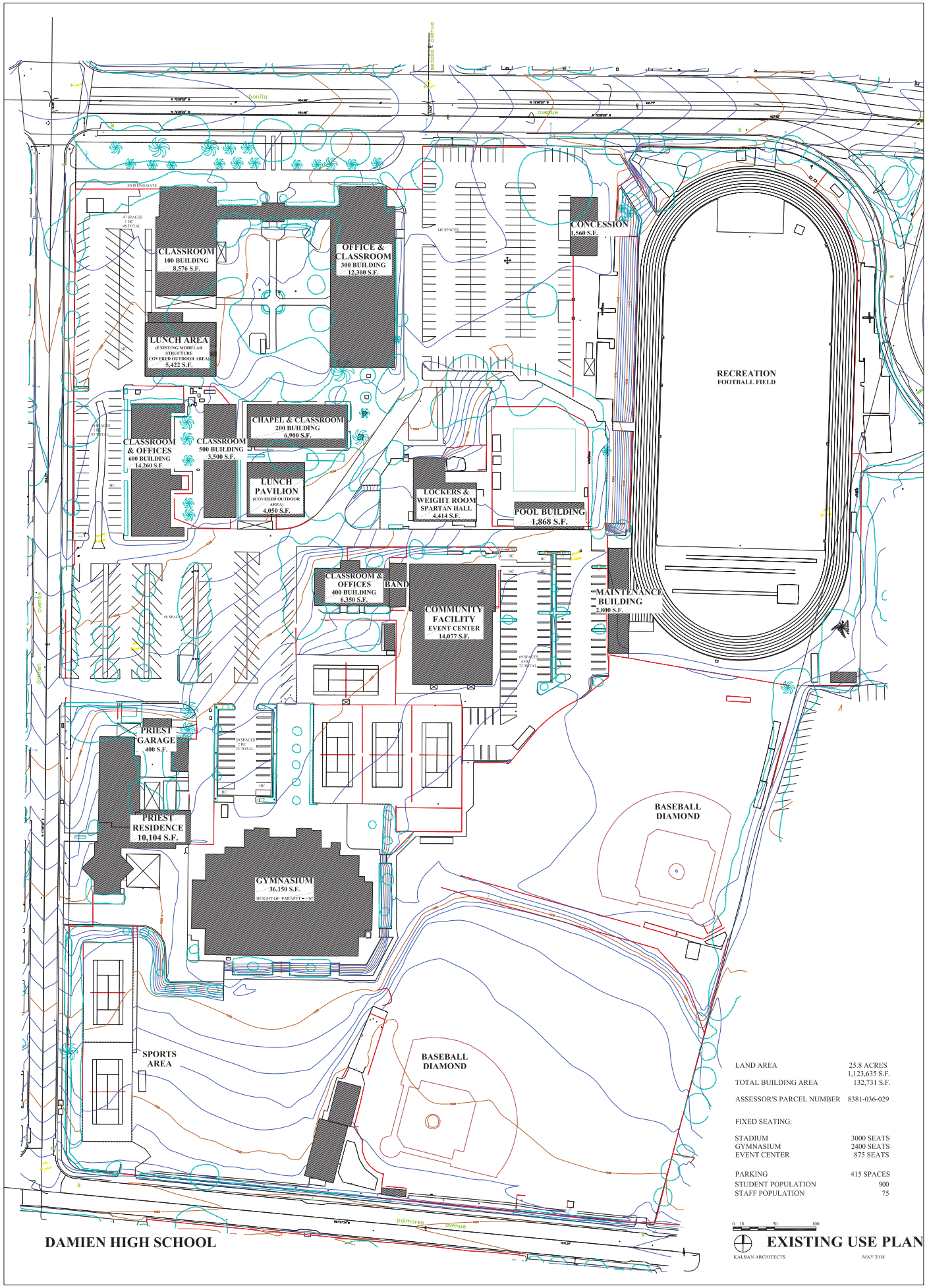
APPENDIX A

MASTER PLAN UPDATE PRELIMINARY DESIGNS



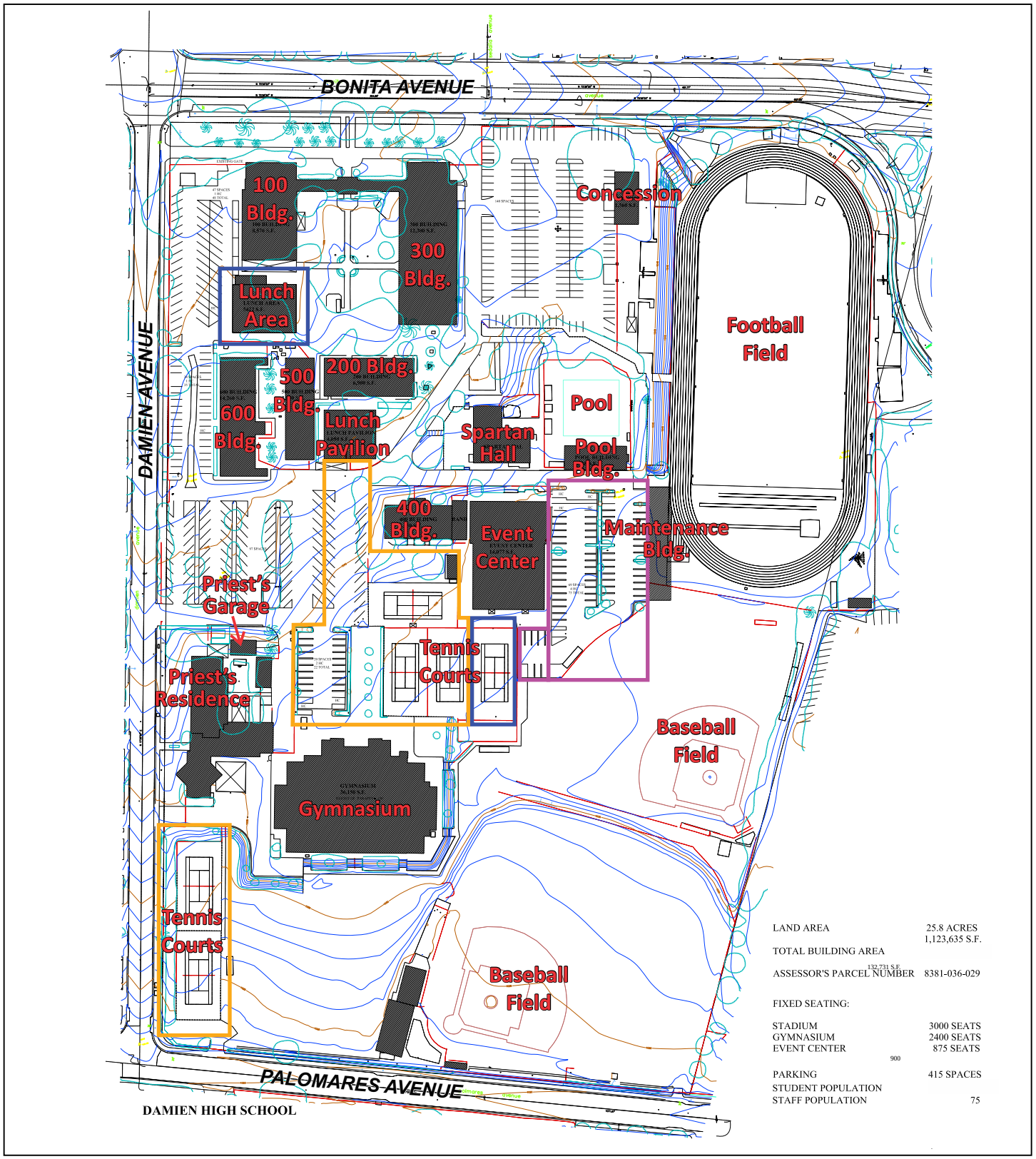
LAND AREA	25.8 ACRES
	1,123,635 S.F.
TOTAL BUILDING AREA	132,731 S.F.
ASSESSOR'S PARCEL NUMBER	8381-036-029
FIXED SEATING:	
STADIUM	3000 SEATS
GYMNASIUM	2400 SEATS
EVENT CENTER	875 SEATS
PARKING	415 SPACES
STUDENT POPULATION	900
STAFF POPULATION	75

0 10 50 100

DAMIEN HIGH SCHOOL

EXISTING USE PLAN

KALBAN ARCHITECTS MAY 2018



LSA

LEGEND

- Phase 1
- Phase 2
- Phase 3

N

0 100 200

FEET

SOURCE: Kalban Architects, 2017

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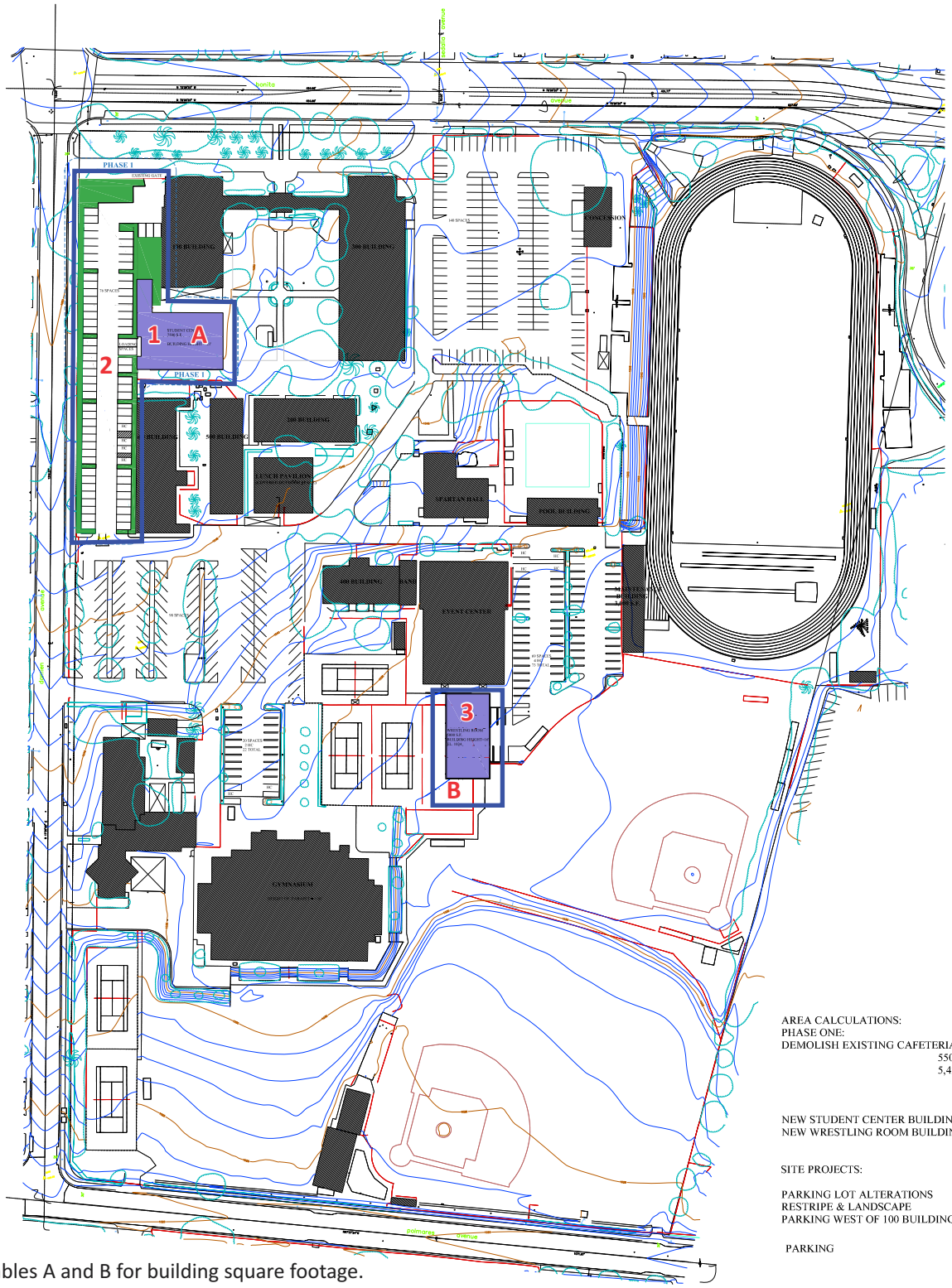
Damien High School Master Plan Update

Demolition Plan



Note: See Tables A and B for building square footage.
For demolition location, please see Figure 5 "Demolition Plan"

LSA

LEGEND

Phase 1

Demolition

- A Lunch Area
- B Tennis Court

Construction

- 1 Student Center
- 2 Re-stripe Parking
- 3 Wrestling Room

N

0 100 200

SOURCE: Kalban Architects, 2018

Damien High School Master Plan Update

Master Plan Phase 1

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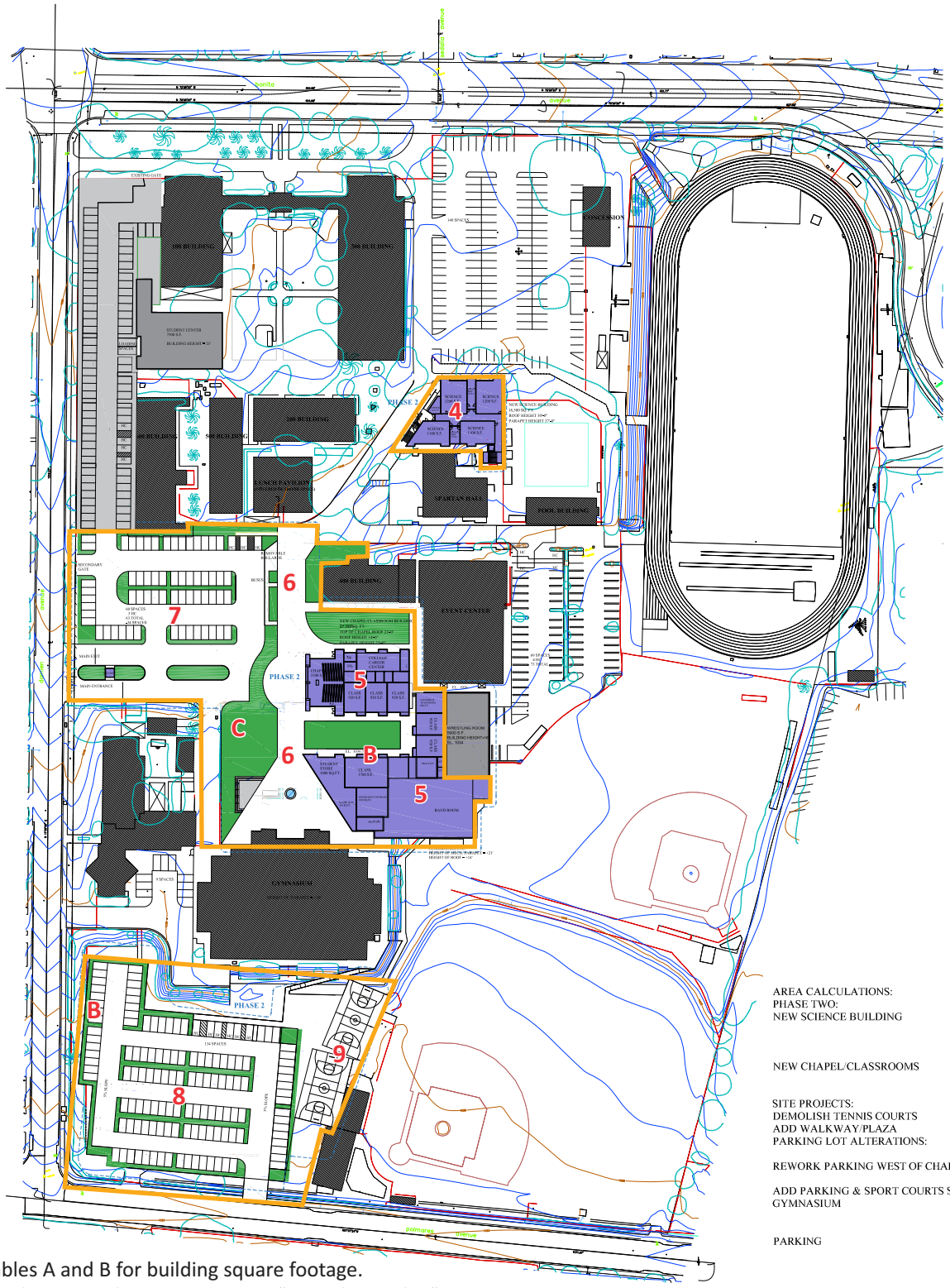

Note: See Tables A and B for building square footage.
For demolition location, please see Figure 5 "Demolition Plan"

LSA

LEGEND

Phase 2

Demolition

- **B** Tennis Courts
- **C** Parking Lot

Construction

- **4** Classrooms
- **5** Chapel/Classrooms
- **6** Grand Promenade
- **7** Reconfigure Existing Parking Lot
- **8** New Parking Lot
- **9** Sport Courts

N

0 100 200

SOURCE: Kalban Architects, 2018

Damien High School Master Plan Update

Master Plan Phase 2

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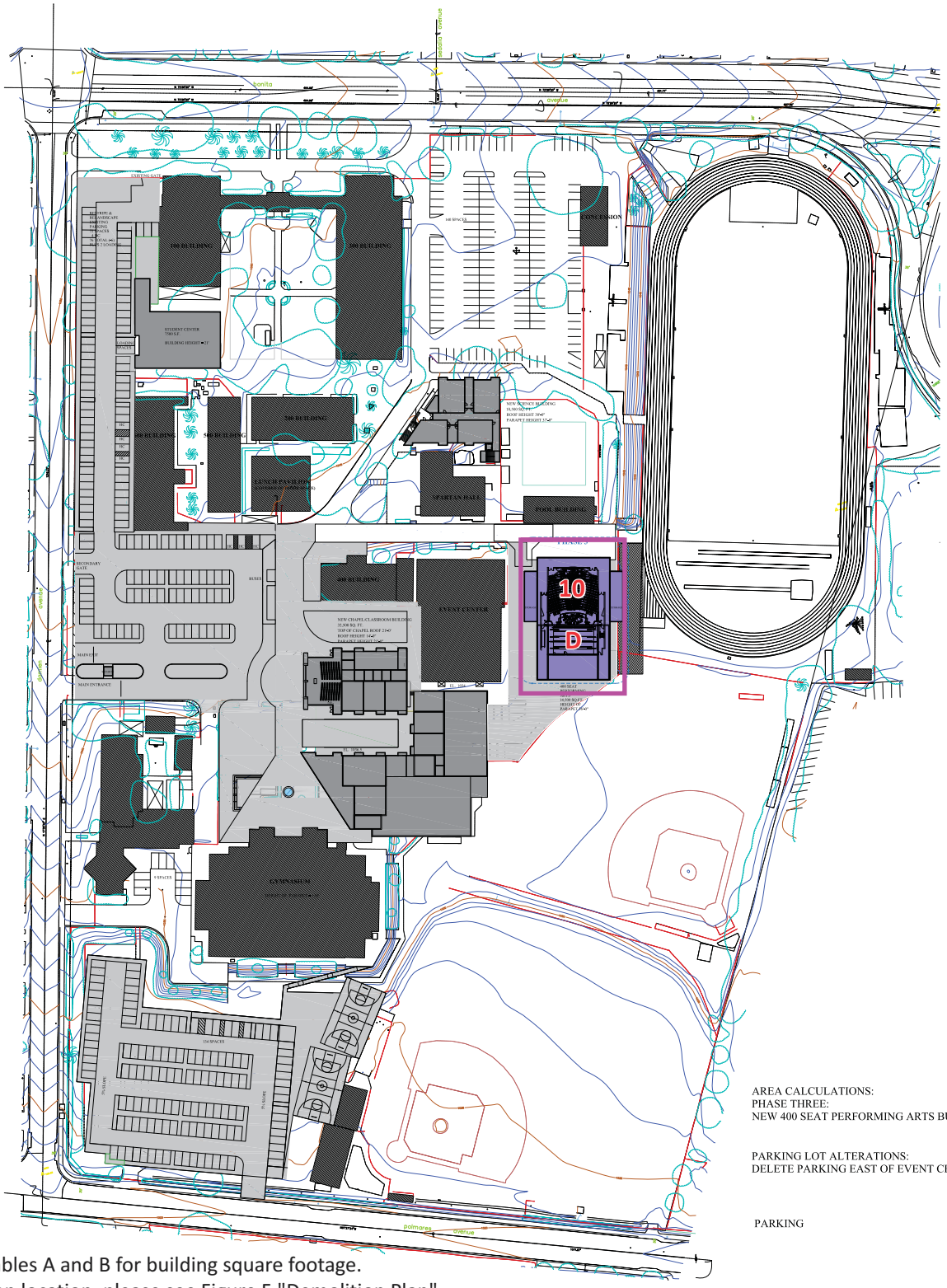

AREA CALCULATIONS:
PHASE THREE:
NEW 400 SEAT PERFORMING ARTS BUILDING
= 14,500 S.F.

PARKING LOT ALTERATIONS:
DELETE PARKING EAST OF EVENT CENTER
-73 SPACES

PARKING 420 SPACES

Note: See Tables A and B for building square footage.
For demolition location, please see Figure 5 "Demolition Plan"

LSA

LEGEND

Phase 3

Demolition

D Parking Lot

Construction

10 Performing Arts Center

N

0 100 200

SOURCE: Kalban Architects, 2018

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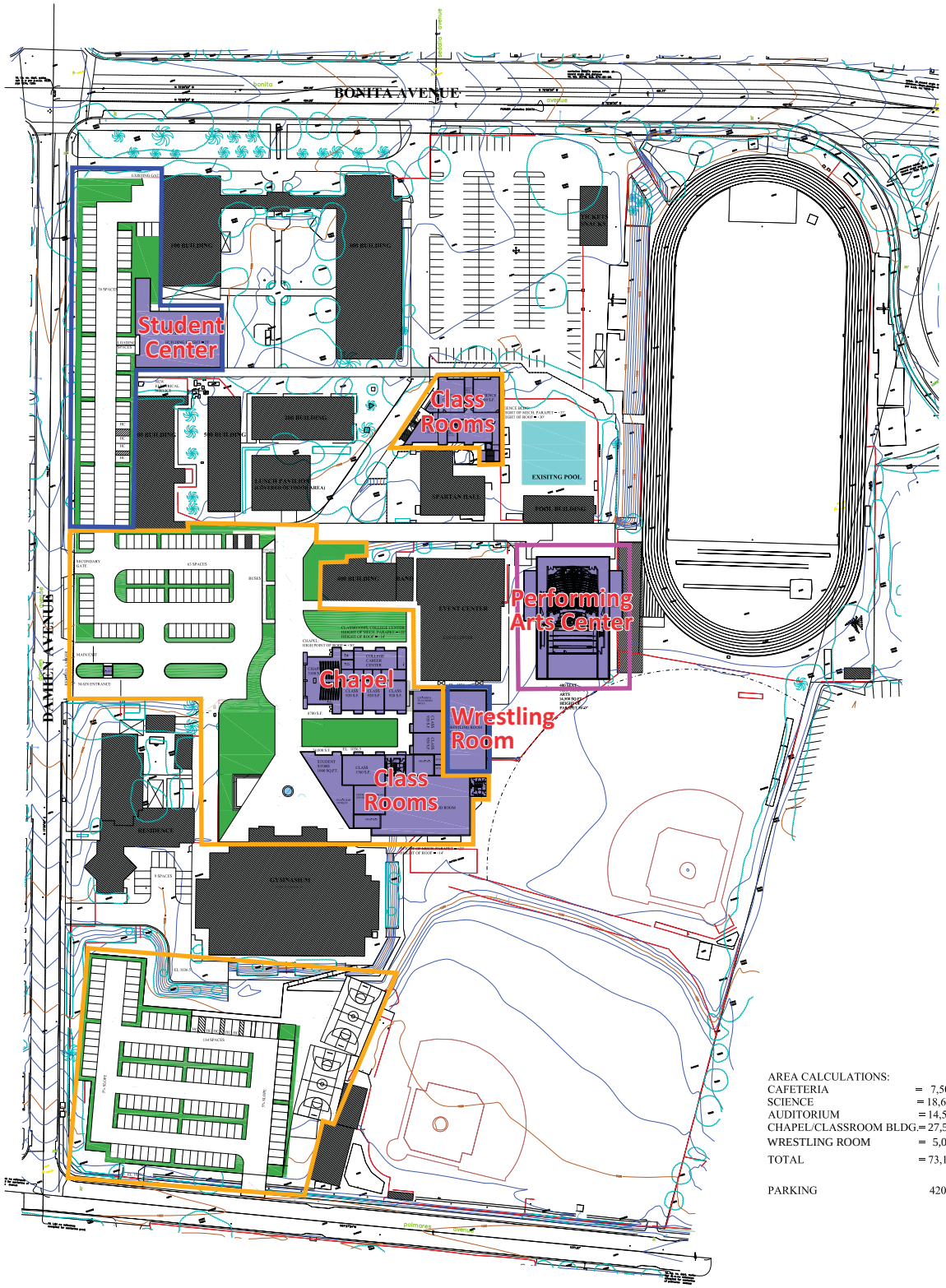
Damien High School Master Plan Update

Master Plan Phase 3



LSA

LEGEND

- Phase 1
- Phase 2
- Phase 3
- Existing Buildings
- Proposed Buildings

N

0 100 200

SOURCE: Kalban Architects, 2018

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Damien High School Master Plan Update

Master Plan Full Build Out

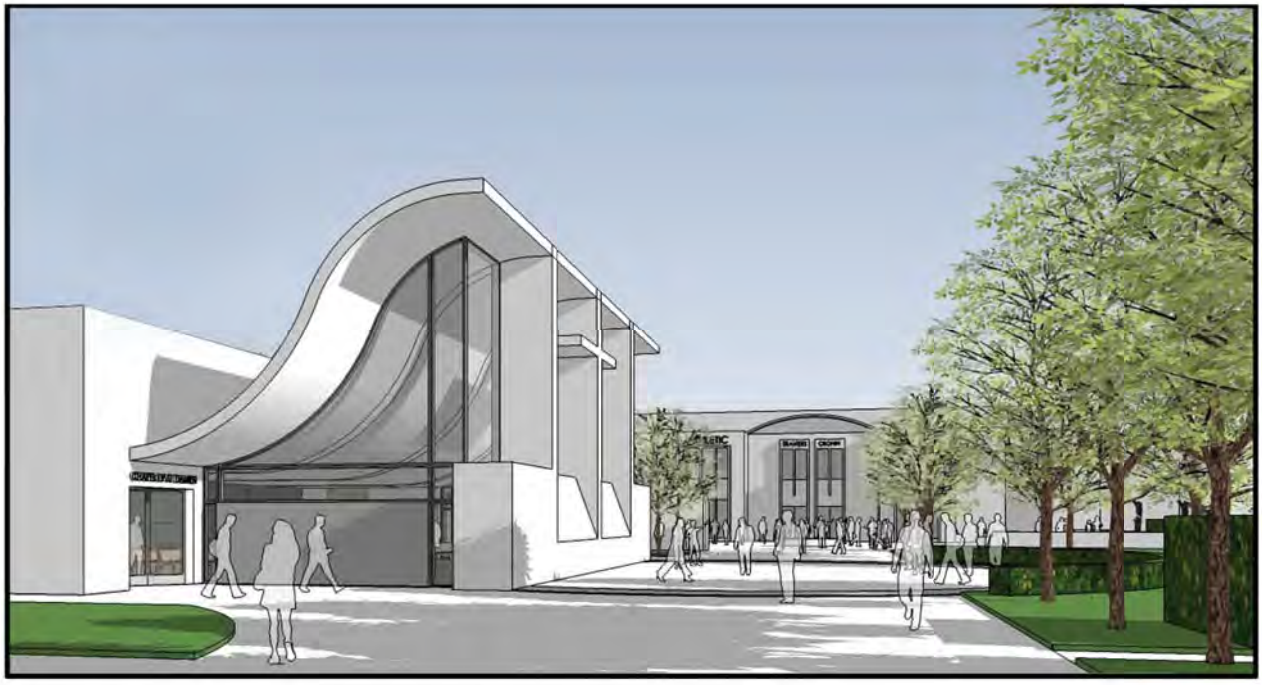
APPENDIX B

CONCEPTUAL SITE DRAWINGS

PRELIMINARY PERSPECTIVE VIEWS OF THE STUDENT CENTER

PRELIMINARY PERSPECTIVE VIEW OF THE SCIENCE BUILDING

PRELIMINARY PERSPECTIVE VIEWS OF THE CHAPEL BUILDING



Appendix E

Noise and Vibration Impact Analysis (On Flash Drive)

NOISE AND VIBRATION IMPACT ANALYSIS

DAMIEN HIGH SCHOOL MASTER PLAN UPDATE

LA VERNE, CALIFORNIA

LSA

January 2019

NOISE AND VIBRATION IMPACT ANALYSIS

DAMIEN HIGH SCHOOL MASTER PLAN UPDATE

LA VERNE, CALIFORNIA

Submitted to:

City of La Verne
Community Development Department
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A: FHWA TRAFFIC NOISE MODEL PRINTOUTS

LIST OF ABBREVIATIONS AND ACRONYMS

µin	microinches
µin/sec	microinches per second
µPa	micropascals
ADT	average daily traffic
ALUCP	Airport Land Use Compatibility Plan
ALUC	Airport Land Use Commission
CA/T	Central Artery/Tunnel
CEQA	California Environmental Quality Act
City	City of La Verne
CNEL	Community Noise Equivalent Level
dB	decibel(s)
dBA	A-weighted decibel(s)
EPA	United States Environmental Protection Agency
FHWA	Federal Highway Administration
ft	foot/feet
FTA	Federal Transit Administration
HVAC	heating, ventilation, and air conditioning
Hz	Hertz
in/sec	inch/inches per second
L_{dn}	day-night average noise level
L_{eq}	equivalent continuous sound level
L_{max}	maximum instantaneous noise level
L_V	velocity in decibels
N/A	not applicable
PPV	peak particle velocity
PRC	Public Resources Code
project	Damien High School Master Plan Update
RCNM	Roadway Construction Noise Model
RMS	root-mean-square (velocity)

sf	square foot/feet
Spec.	specification
VdB	vibration velocity decibels

DAMIEN HIGH SCHOOL MASTER PLAN UPDATE

INTRODUCTION

This noise and vibration impact analysis has been prepared to evaluate the potential noise and vibration impacts and mitigation measures associated with the proposed Damien High School Master Plan Update (project) in La Verne, California. This report is intended to satisfy the City of La Verne's (City) requirement for a project-specific noise and vibration impact analysis by examining the impacts of the proposed Master Plan modifications on the project site and evaluating the mitigation measures required by the project.

PROJECT LOCATION AND DESCRIPTION

Damien High School is located at 2280 Damien Avenue on the corner of Damien and Bonita Avenues in La Verne, California. The campus site (project site) is approximately 1 mile south of State Route (SR) 210 and approximately 2 miles north of Interstate (I) 10. Bracket Field Airport is located approximately 0.5 miles southeast of the project site, and Puddingstone Reservoir is located approximately 0.5 miles southwest of the project site. Figure 1 illustrates the regional and project location.

The Damien High School campus comprises 25.8 acres with an average annual population of 940 students and approximately 75 faculty/staff. The existing building area totals approximately 132,731 square feet (sf) of academic, administrative, and athletic facilities, with 415 parking spaces on campus. Figure 2 illustrates the existing site plan.

The Damien High School Master Plan Update is divided into three phases, each of which contains potential projects. At full build out, the Master Plan Update proposes demolition of the existing 5,972 sf cafeteria facility, construction of four new buildings totaling approximately 73,100 sf of building space, and several alterations to select hardscaped areas and parking lots (net increase of 67,128 sf). The proposed development is based on the need to fulfill a current demand for additional academic space and student services, as the high school is not projecting an increase in students or faculty throughout the life of the Master Plan. Figure 3 illustrates the proposed Master Plan Update.

SENSITIVE LAND USES IN THE PROJECT AREA

The project site is surrounded by residential uses to the north and west across Bonita Avenue and Damien Avenue, respectively. The project site is bordered to the east by the campus of the Joan Macy School/David and Margaret Youth and Family Services Organization, and residential uses. West of the project across Damien Avenue and east of the project across 3rd Street are commercial uses. South of the project site are light industrial uses across Palomares Avenue.

In addition to the sensitive land uses adjacent to the project site, there are a number of on-site buildings that were constructed in the 1920s and 1930s. These buildings include Building 100 (built in 1936), Building 200 (built in 1934–1935), the north end of Building 300 (built in 1922), Building 400 (built in 1938), and Spartan Hall (built in 1936). These buildings would be susceptible to

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FIGURE 1

N

0 1000 2000
FEET

SOURCE: Google Earth, 2016; ESRI Streetmap, 2013.

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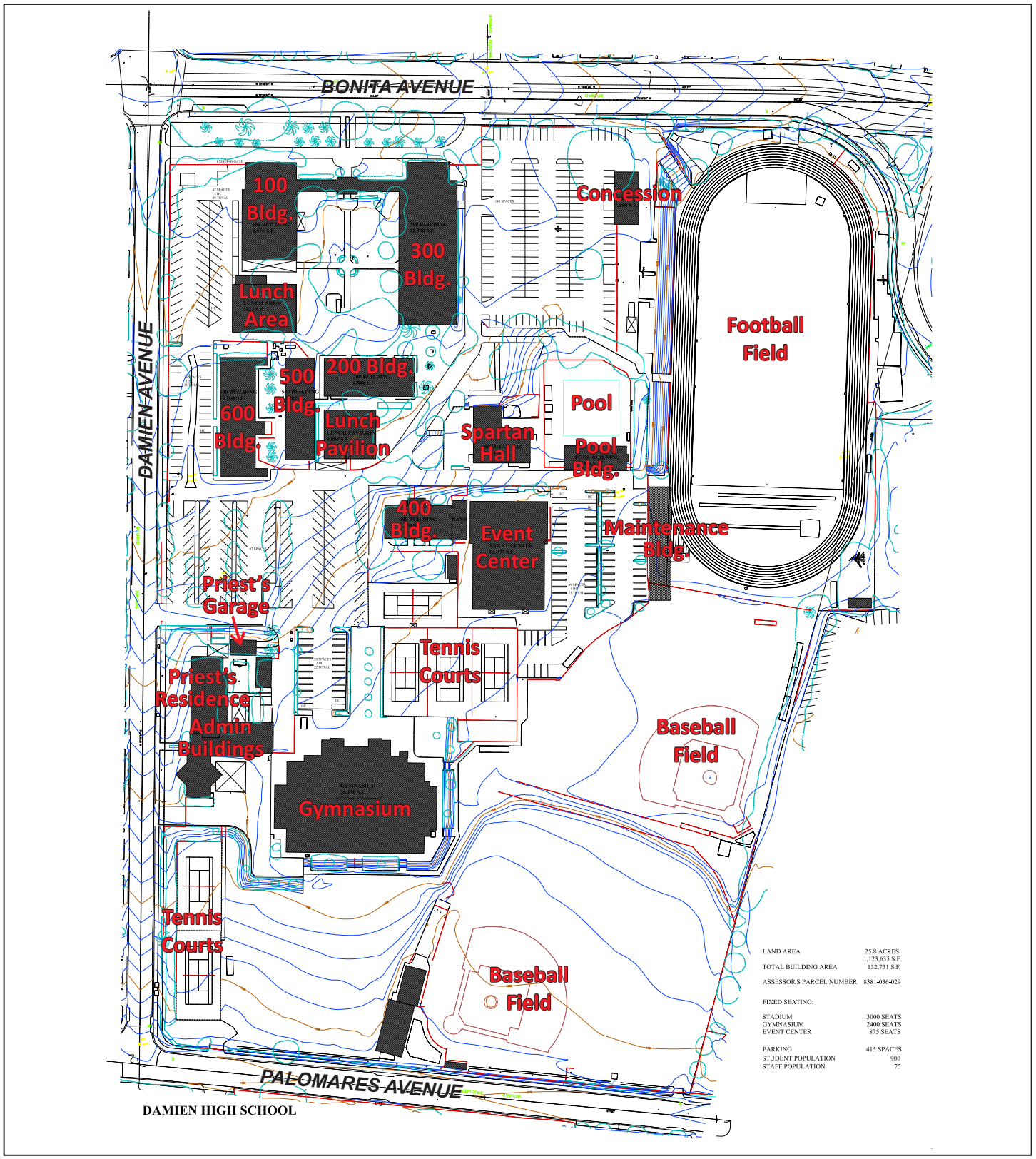
Damien High School Master Plan Update

Regional and Project Location



LSA

FIGURE 2

N

0 100 200
FEET

SOURCE: Kalban Architects, 2017

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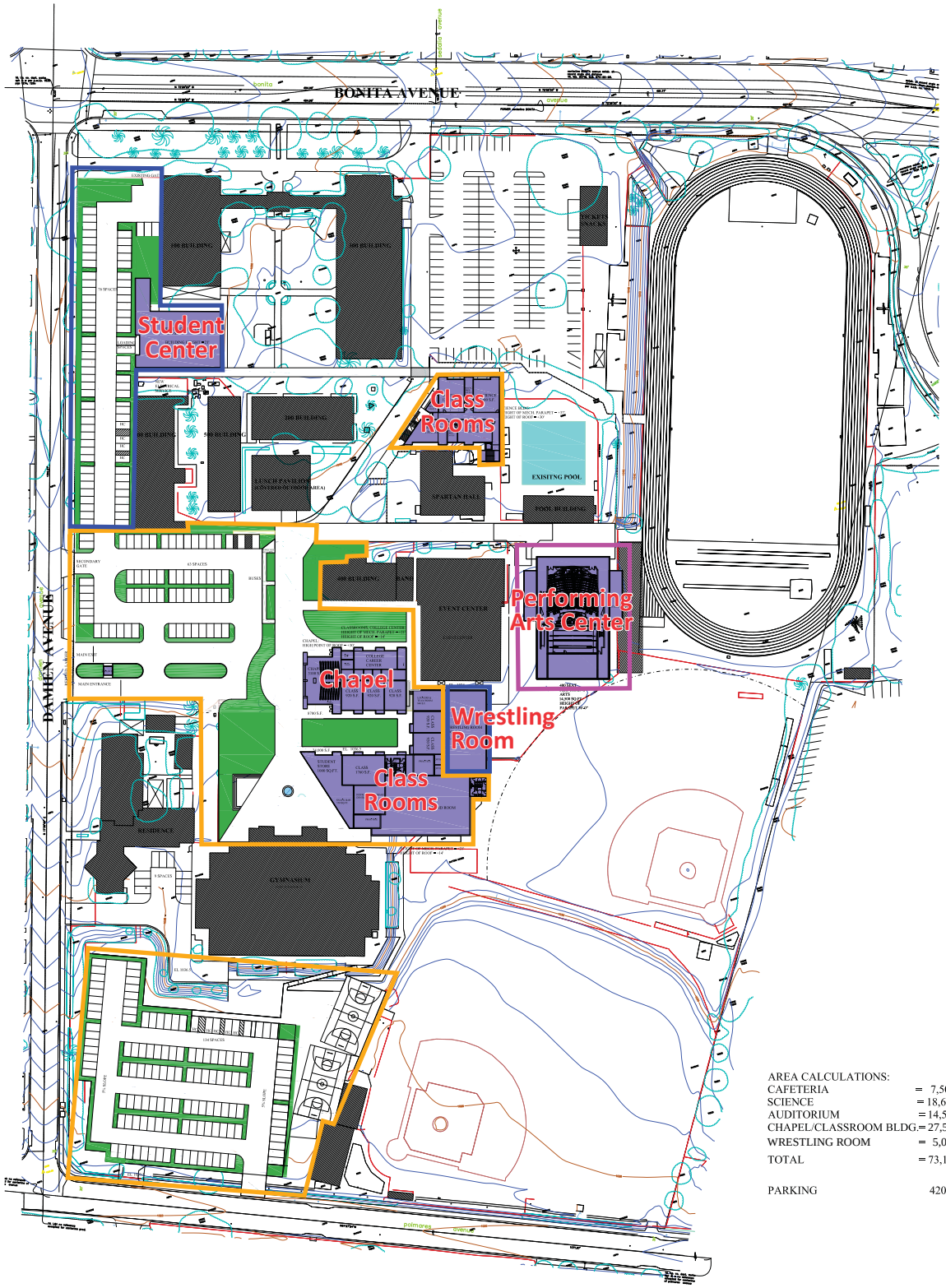
Damien High School Master Plan Update

Existing Damien High School Campus



LSA

LEGEND

- Phase 1
- Phase 2
- Phase 3
- Existing Buildings
- Proposed Buildings

N

0 100 200

FIGURE 3

Damien High School Master Plan Update

Master Plan Full Build Out

SOURCE: Kalban Architects, 2018

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vibration damage because they are old. Other on-site buildings were constructed in the 1960s or later and would not be susceptible to vibration damage.

CHARACTERISTICS OF SOUND

Noise is usually defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, and sleep.

To the human ear, sound has two significant characteristics: pitch and loudness. Pitch is generally an annoyance, while loudness can affect the ability to hear. Pitch is the number of complete vibrations, or cycles per second, of a sound wave, which results in the tone's range from high to low. Loudness is the strength of a sound, and it describes a noisy or quiet environment; it is measured by the amplitude of the sound wave. Loudness is determined by the intensity of the sound wave combined with the reception characteristics of the human ear. Sound intensity refers to how hard the sound wave strikes an object, which in turn produces the sound's effect. This characteristic of sound can be precisely measured with instruments. The analysis of a project defines the noise environment of the project area in terms of sound intensity and its effect on adjacent sensitive land uses.

Measurement of Sound

Sound intensity is measured with the A-weighted decibel scale to correct for the relative frequency response of the human ear. That is, an A-weighted noise level de-emphasizes low and very high frequencies of sound, similar to the human ear's de-emphasis of these frequencies. Decibels, unlike linear units (e.g., inches or pounds), are measured on a logarithmic scale representing points on a sharply rising curve.

For example, 10 decibels (dB) is 10 times more intense than 1 dB, 20 dB is 100 times more intense than 1 dB, and 30 dB is 1,000 times more intense than 1 dB. Thirty decibels (30 dB) represents 1,000 times as much acoustic energy as 1 dB. The decibel scale increases as the square of the change, representing the sound pressure energy. A sound as soft as human breathing is about 10 times greater than 0 dB. The decibel system of measuring sound gives a rough connection between the physical intensity of sound and its perceived loudness to the human ear. A 10 dB increase in sound level is perceived by the human ear as only a doubling of the sound's loudness. Ambient sounds generally range from 30 dB (very quiet) to 100 dB (very loud).

Sound levels are generated from a source, and their decibel level decreases as the distance from that source increases. Sound levels dissipate exponentially with distance from their noise sources. For a single point source, sound levels decrease approximately 6 dB for each doubling of distance from the source. This drop-off rate is appropriate for noise generated by stationary equipment. If noise is produced by a line source (e.g., highway traffic or railroad operations) the sound decreases 3 dB for each doubling of distance in a hard site environment. Line source sound levels decrease 4.5 dB for each doubling of distance in a relatively flat environment with absorptive vegetation.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. The equivalent continuous

sound level (L_{eq}) is the total sound energy of time-varying noise over a sample period. However, the predominant rating scales for human communities in the State of California are the L_{eq} and Community Noise Equivalent Level (CNEL) or the day-night average noise level (L_{dn}) based on A-weighted decibels (dBA). CNEL is the time-varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noise occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and a 10 dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). L_{dn} is similar to the CNEL scale but without the adjustment for events occurring during the relaxation and sleeping hours. CNEL and L_{dn} are within 1 dBA of each other and are normally interchangeable. The City uses the CNEL noise scale for long-term noise impact assessment.

Other noise rating scales of importance when assessing the annoyance factor include the maximum instantaneous noise level (L_{max}), which is the highest exponential time-averaged sound level that occurs during a stated time period. The noise environments discussed in this analysis for short-term noise impacts are specified in terms of maximum levels denoted by L_{max}, which reflects peak operating conditions and addresses the annoying aspects of intermittent noise. It is often used together with another noise scale, or noise standards in terms of percentile noise levels, in noise ordinances for enforcement purposes. For example, the L_{10} noise level represents the noise level exceeded 10 percent of the time during a stated period. The L_{50} noise level represents the median noise level. Half the time the noise level exceeds this level, and half the time it is less than this level. The L_{90} noise level represents the noise level exceeded 90 percent of the time and is considered the background noise level during a monitoring period. For a relatively constant noise source, the L_{eq} and L_{50} are approximately the same.

Noise impacts can be described in three categories. The first category includes audible impacts, which refer to increases in noise levels noticeable to humans. Audible increases in noise levels generally refer to a change of 3 dB or greater because this level has been found to be barely perceptible in exterior environments. The second category, potentially audible, refers to a change in the noise level between 1 dB and 3 dB. This range of noise levels has been found to be noticeable only in laboratory environments. The last category includes changes in noise levels of less than 1 dB, which are inaudible to the human ear. Only audible changes in existing ambient or background noise levels are considered potentially significant.

Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to sound levels higher than 85 dBA. Exposure to high sound levels affects the entire system, with prolonged sound exposure in excess of 75 dBA increasing body tensions, thereby affecting blood pressure and functions of the heart and the nervous system. In comparison, extended periods of sound exposure above 90 dBA would result in permanent cell damage. When the sound level reaches 120 dBA, a tickling sensation occurs in the human ear, even with short-term exposure. This level of sound is called the threshold of feeling. As the sound reaches 140 dBA, the tickling sensation is replaced by a feeling of pain in the ear (i.e., the threshold of pain). A sound level of 160–165 dBA will result in dizziness or a loss of equilibrium. The ambient or background noise problem is widespread and generally more concentrated in urban areas than in outlying, less developed areas.

Table A lists definitions of acoustical terms, and Table B shows common sound levels and their sources. Table C shows land use noise compatibility taken from Table N-1 of the City's General Plan Noise Element (City of La Verne 1998).

Table A: Definitions of Acoustical Terms

Term	Definitions
Decibel, dB	A unit of sound level that denotes the ratio between two quantities that are proportional to power; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
Frequency, Hz	Of a function periodic in time, the number of times that the quantity repeats itself in 1 second (i.e., the number of cycles per second).
A-Weighted Sound Level, dBA	The sound level obtained by use of A-weighting. The A-weighting filter de-emphasizes the very low and very high-frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. (All sound levels in this report are A-weighted unless reported otherwise.)
L_{01}, L_{10}, L_{50}, L_{90}	The fast A-weighted noise levels that are equaled or exceeded by a fluctuating sound level 1%, 10%, 50%, and 90% of a stated time period, respectively.
Equivalent Continuous Noise Level, L_{eq}	The level of a steady sound that, in a stated time period and at a stated location, has the same A-weighted sound energy as the time varying sound.
Community Noise Equivalent Level, CNEL	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 5 dBA to sound levels occurring in the evening from 7:00 p.m. to 10:00 p.m. and after the addition of 10 dBA to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
Day/Night Noise Level, L_{dn}	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 10 dBA to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
L_{max}, L_{min}	The maximum and minimum A-weighted sound levels measured on a sound level meter, during a designated time interval, using fast time averaging.
Ambient Noise Level	The all-encompassing noise associated with a given environment at a specified time. It is usually a composite of sound from many sources from many directions, near and far; no particular sound is dominant.
Intrusive	The noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content, as well as the prevailing ambient noise level.

Source: *Handbook of Acoustical Measurements and Noise Control* (Harris 1991).

Table B: Common Sound Levels and Their Noise Sources

Noise Source	A-Weighted Sound Level in Decibels	Noise Environments	Subjective Evaluations
Near Jet Engine	140	Deafening	128 times as loud
Civil Defense Siren	130	Threshold of Pain	64 times as loud
Hard Rock Band	120	Threshold of Feeling	32 times as loud
Accelerating Motorcycle at a Few Feet Away	110	Very Loud	16 times as loud
Pile Driver; Noisy Urban Street/Heavy City Traffic	100	Very Loud	8 times as loud
Ambulance Siren; Food Blender	95	Very Loud	—
Garbage Disposal	90	Very Loud	4 times as loud
Freight Cars; Living Room Music	85	Loud	—
Pneumatic Drill; Vacuum Cleaner	80	Loud	2 times as loud
Busy Restaurant	75	Moderately Loud	—
Near Freeway Auto Traffic	70	Moderately Loud	Reference level
Average Office	60	Quiet	One-half as loud
Suburban Street	55	Quiet	—
Light Traffic; Soft Radio Music in Apartment	50	Quiet	One-quarter as loud
Large Transformer	45	Quiet	—
Average Residence without Stereo Playing	40	Faint	One-eighth as loud
Soft Whisper	30	Faint	—
Rustling Leaves	20	Very Faint	—
Human Breathing	10	Very Faint	Threshold of Hearing
—	0	Very Faint	—

Source: Compiled by LSA (2016).

Table C: Noise/Land Use Noise Compatibility Matrix

Land Use	CNEL (Decibels)						
	55	60	65	70	75	80	
Single/Multi-Family Residential	A	A	B	B	C	D	D
Mobile Home Park	A	A	B	C	C	D	D
Hotel, Motel	A	A	B	B	C	C	D
School, Library, Church, Hospital, Nursing Home	A	A	B	C	C	D	D
Concert/Meeting Hall, Auditorium, Amphitheater	B	B	C	C	D	D	D
Indoor/Outdoor Sports Arena, Amusement Park	A	A	A	B	B	D	D
Playground, Neighborhood Park	A	A	A	B	C	D	D
Golf Courses, Riding Stable, Cemetery	A	A	A	A	B	C	C
Office/Professional Building	A	A	A	B	B	C	D
Commercial Retail, Bank, Restaurant, Theater	A	A	A	A	B	B	C
Industrial, Utilities, Manufacturing, Wholesale, Service Station	A	A	A	A	B	B	B
Agriculture	A	A	A	A	A	A	A

Source: City of La Verne General Plan, Noise Element, Table N-1 (1998).

Zone A: Normal — Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.

Zone B: Conditional — New construction or development should be undertaken only after detailed analysis of the noise requirements is made and needed noise insulation features in the design. Conventional construction, with closed windows and fresh air supply systems or air conditioning, will normally suffice.

Zone C: Normally Not — New construction or development should generally be discouraged. If it does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Zone D: Clearly Not — New construction or development should generally not be undertaken.

CNEL = Community Noise Equivalent Level

FUNDAMENTALS OF VIBRATION

Vibration refers to ground-borne noise and perceptible motion. Ground-borne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors, where the motion may be discernible, but without the effects associated with the shaking of a building there is less adverse reaction. Vibration energy propagates from a source through intervening soil and rock layers to the foundations of nearby buildings. The vibration then propagates from the foundation throughout the remainder of the structure. Building vibration may be perceived by occupants as the motion of building surfaces, the rattling of items sitting on shelves or hanging on walls, or a low-frequency rumbling noise. The rumbling noise is caused by the vibration of walls, floors, and ceilings that radiate sound waves. Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by 10 dB or less. This is an order of magnitude below the damage threshold for normal buildings.

Typical sources of ground-borne vibration are construction activities (e.g., blasting, pile-driving, and operating heavy-duty earthmoving equipment), steel-wheeled trains, and occasional traffic on rough roads. Problems with both ground-borne vibration and noise from these sources are usually

localized to areas within approximately 100 feet (ft) from the vibration source, although there are examples of ground-borne vibration causing interference out to distances greater than 200 ft (Federal Transit Authority [FTA] 2018). When roadways are smooth, vibration from traffic, even heavy trucks, is rarely perceptible. It is assumed for most projects that the roadway surface will be smooth enough that ground-borne vibration from street traffic will not exceed the impact criteria; however, both construction of the project and the freight train operations could result in ground-borne vibration that may be perceptible and annoying.

Ground-borne noise is not likely to be a problem because noise arriving via the normal airborne path will usually be greater than ground-borne noise.

Ground-borne vibration has the potential to disturb people and damage buildings. Although it is very rare for train-induced ground-borne vibration to cause even cosmetic building damage, it is not uncommon for construction processes such as blasting and pile-driving to cause vibration of sufficient amplitudes to damage nearby buildings (FTA 2018). Ground-borne vibration is usually measured in terms of vibration velocity, either the root-mean-square (RMS) velocity or peak particle velocity (PPV). The RMS is best for characterizing human response to building vibration, and PPV is used to characterize potential for damage. Decibel notation acts to compress the range of numbers required to describe vibration. Vibration velocity level in decibels is defined as:

$$L_v = 20 \log_{10} [V/V_{ref}]$$

where "L_v" is the vibration velocity in decibels (VdB), "V" is the RMS velocity amplitude, and "V_{ref}" is the reference velocity amplitude, or 1 x 10^{-6} inches/second (in/sec) used in the United States. Table D illustrates human response to various vibration levels, as described in the *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).

Table D: Human Response to Different Levels of Ground-Borne Noise and Vibration

Vibration Velocity Level	Noise Level		Human Response
	Low Frequency[1]	Mid Frequency[2]	
65 VdB	25 dBA	40 dBA	Approximate threshold of perception for many humans. Low-frequency sound is usually inaudible; mid-frequency sound is excessive for quiet sleeping areas.
75 VdB	35 dBA	50 dBA	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find transit vibration at this level unacceptable. Low-frequency noise is acceptable for sleeping areas; mid-frequency noise is annoying in most quiet occupied areas.
85 VdB	45 dBA	60 dBA	Vibration is acceptable only if there are an infrequent number of events per day. Low-frequency noise is unacceptable for sleeping areas; mid-frequency noise is unacceptable even for infrequent events with institutional land uses, such as schools and churches.

Source: *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).
[1] Approximate noise level when vibration spectrum peak is near 30 Hz.
[2] Approximate noise level when vibration spectrum peak is near 60 Hz.
dBA = A-weighted decibels
FTA = Federal Transit Administration
Hz = Hertz
VdB = vibration velocity decibels

Factors that influence ground-borne vibration and noise include the following:

- **Vibration Source:** Vehicle suspension, wheel types and condition, railroad track/roadway surface, railroad track support system, speed, transit structure, and depth of vibration source
- **Vibration Path:** Soil type, rock layers, soil layering, depth to water table, and frost depth
- **Vibration Receiver:** Foundation type, building construction, and acoustical absorption

Among the factors listed above, there are significant differences in the vibration characteristics when the source is underground compared to at the ground surface. In addition, soil conditions are known to have a strong influence on the levels of ground-borne vibration. Among the most important factors are the stiffness and internal damping of the soil and the depth to bedrock.

Experience with ground-borne vibration indicates: (1) vibration propagation is more efficient in stiff, clay soils than in loose, sandy soils; and (2) shallow rock seems to concentrate the vibration energy close to the surface and can result in ground-borne vibration problems at large distances from a railroad track. Factors such as layering of the soil and the depth to the water table can have significant effects on the propagation of ground-borne vibration. Soft, loose, sandy soils tend to attenuate more vibration energy than hard, rocky materials. Vibration propagation through groundwater is more efficient than through sandy soils.

REGULATORY SETTING

Federal Regulations

Federal Transit Administration

Vibration standards included in the FTA's *Transit Noise and Vibration Impact Assessment Manual* (2018) are used in this analysis for ground-borne vibration impacts on human annoyance, as shown in Table E. The criteria presented in Table E account for the variations in project types as well as the frequency of events, which differ widely among projects. It is intuitive that when there will be fewer events per day, higher vibration levels would be required to evoke the same community response. This is accounted for in the criteria by distinguishing between projects with frequent and infrequent events, in which the term "occasional events" is defined as between 30 and 70 events per day.

The criteria for environmental impact from ground-borne vibration and noise are based on the maximum levels for a single event. Table F lists the potential vibration building damage criteria associated with construction activities, as suggested in the *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).

FTA guidelines show that a vibration level of up to 102 VdB (equivalent to 0.5 in/sec in PPV) (FTA 2018) is considered safe for buildings consisting of reinforced concrete, steel, or timber (no plaster) and would not result in any construction vibration damage. For a non-engineered timber and masonry building, the construction building vibration damage criterion is 94 VdB (0.2 in/sec in PPV).

Table E: Ground-Borne Vibration and Ground-Borne Noise Impact Criteria for General Assessment

Land Use Category	Ground-Borne Vibration Impact Levels (VdB re 1 µin/sec)			Ground-Borne Noise Impact Levels (dB re 20 µPa)		
	Frequent[1] Events	Occasional[2] Events	Infrequent[3] Events	Frequent[1] Events	Occasional[2] Events	Infrequent[3] Events
Category 1: Buildings where low ambient vibration is essential for interior operations.	65 VdB[4]	65 VdB[4]	65 VdB[4]	N/A[5]	N/A[5]	N/A[5]
Category 2: Residences and buildings where people normally sleep.	72 VdB	75 VdB	80 VdB	35 dBA	38 dBA	43 dBA
Category 3: Institutional land uses with primarily daytime use.	75 VdB	78 VdB	83 VdB	40 dBA	43 dBA	48 dBA

Source: *Transit Noise and Vibration Impact AssessmentManual* (FTA 2018).
[1] Frequent events are defined as more than 70 events per day.
[2] Occasional events are defined as between 30 and 70 events per day.
[3] Infrequent events are defined as fewer than 30 events per day.
[4] This criterion limit is based on levels that are acceptable for most moderately sensitive equipment, such as optical microscopes. Vibration-sensitive manufacturing or research will require detailed evaluation to define the acceptable vibration levels. Ensuring lower vibration levels in a building often requires special design of the HVAC systems and stiffened floors.
[5] Vibration-sensitive equipment is not sensitive to ground-borne noise.

µin/sec = microinches per second
µPa = micropascals
dB = decibels
dBA = A-weighted decibels
FTA = Federal Transit Administration
HVAC = heating, ventilation, and air conditioning
N/A = not applicable
VdB = vibration velocity decibels

Table F: Construction Vibration Damage Criteria

Building Category	PPV (in/sec)	Approximate L_V (VdB)[1]
Reinforced concrete, steel, or timber (no plaster)	0.50	102
Engineered concrete and masonry (no plaster)	0.30	98
Non-engineered timber and masonry buildings	0.20	94
Buildings extremely susceptible to vibration damage	0.12	90

Source: *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).
[1] RMS vibration velocity in decibels (VdB) re 1 µin/sec.

µin/sec = microinches per second
FTA = Federal Transit Administration
in/sec = inch/inches per second
L_V = velocity in decibels
PPV = peak particle velocity
RMS = root-mean-square
VdB = vibration velocity decibels

Local Regulations

City of La Verne

Noise Element of the General Plan. The Noise Element of the City of La Verne General Plan defines issues, goals, policies, and implementation measures related to noise conditions in La Verne. The specific policies of the Noise Element that are relevant to the proposed project are as follows:

Goal 1: Protect our community from excessive noise.

Policy 1.1: Maintain or reduce noise levels citywide.

a. Enforce the Noise Control Ordinance to assure that all new development is consistent with the land use compatibility criteria, exterior and interior noise standard.

f. Consider the noise of a proposed project in both absolute and relative terms. A proposed project will be considered to have a significant adverse impact on the environment if the expected noise increase exceeds 5 dB, even though it may not exceed the standard in Table C.

g. Require stringent mitigation measures to limit construction noise for all new projects. Establish a graduated system of fines for violations that increase in severity with each offense.

Municipal Code. Section 8.20.010 of the City's Municipal Code states that Ordinance No. 11,773 of the County of Los Angeles, known as the "noise control ordinance of the County of Los Angeles," is adopted by reference under the authority of Section 50022.9 of the California Government Code.

Exterior and Interior Noise Standards. In Sections 12.08.390 and 12.08.400 of the Los Angeles County Code, the City's exterior and interior noise standards are shown in Tables G and H, respectively.

Construction Noise Standards. In Section 12.08.440 of the Los Angeles County Code, the City prohibits operating or causing the operation of any tools or equipment used in construction, drilling, repair, alteration, or demolition work between the weekday hours of 7:00 p.m. and 7:00 a.m., or at any time on Sundays or holidays, such that the sound therefrom creates a noise disturbance across a residential or commercial real-property line (except for public-service utilities emergency work or by variance issued by the health officer). In addition, the City has both working hours and maximum noise levels that are allowable from both mobile and stationary equipment defined by land use, as shown in Table I.

Loading and Unloading Operations. In Section 12.08.460 of the Los Angeles County Code, the City prohibits the loading, unloading, opening, closing, or other handling of boxes, crates, containers, building materials, garbage cans, or similar objects between the hours of 10:00 p.m. and 6:00 a.m. in such a manner as to cause noise disturbance.

Vibration. In Section 12.08.560 of the Los Angeles County Code, the City prohibits the operation or permitting the operation of any device that creates a vibration level above the vibration perception threshold of any individual at or beyond the property boundary of the source if on private property, or at 150 ft from the source if on a public space or public right-of-way. The perception threshold shall be a motion velocity of 0.01 in/sec over the range of 1 to 100 Hertz. This threshold only applies to groundborne vibrations from long-term operational activities. The City has not adopted any thresholds for construction-related groundborne vibration impacts.

Variances from Noise Standards. In Section 12.08.570 of the Los Angeles County Code, variances from the City's Municipal Code noise standards may be granted by the health officer for a period not to exceed 2 years, subject to such terms, conditions, and requirements as the

Table G: Exterior Noise Standards

Noise Zone	Designated Noise Zone Land Use	Time	L_{50}	L_{25}	$L_{8.3}$	$L_{1.7}$	L_{max}
1	Noise-Sensitive Area	Anytime	45	50	55	60	65
2	Residential Properties	10:00 p.m. to 7:00 a.m.	45	50	55	60	65
		7:00 a.m. to 10:00 p.m.	50	55	60	65	70
3	Commercial Properties	10:00 p.m. to 7:00 a.m.	55	60	65	70	75
		7:00 a.m. to 10:00 p.m.	60	65	70	75	80
4	Industrial Properties	Anytime	70	75	80	85	90

Source: County of Los Angeles, Noise Control Ordinance Section 12.08.390.
Note: As adopted from the Noise Control Ordinance of Los Angeles. If the ambient noise level exceeds the exterior noise standard (L_{50}, L_{25}, $L_{8.3}$, $L_{1.7}$, and L_{max}), the ambient level becomes the corresponding exterior noise standard.
$L_{1.7}$ = noise level exceeded 1.7% of one hour
$L_{8.3}$ = noise level exceeded 8.3% of one hour
L_{25} =noise level exceeded 25% of one hour
L_{50} = noise level exceeded 50% of one hour
L_{max} = maximum instantaneous noise level

Table H: Interior Noise Standards

Noise Zone	Designated Noise Zone Land Use	Time	L_8	L_2	L_{max}
All	Multi-Family Residential	10:00 p.m. to 7:00 a.m.	40	45	50
		7:00 a.m. to 10:00 p.m.	45	50	55

Source: County of Los Angeles, Noise Control Ordinance Section 12.08.400.
Note: If the measured ambient noise level reflected by the L_{50} exceeds that permissible within any of the interior noise standards, the allowable interior noise level shall be increased in 5-decibel increments in each standard as appropriate to reflect said ambient noise level (L_{50}).
L_2 = noise level exceeded 2% of the time
L_8 = noise level exceeded 8% of the time
L_{50} = median noise level
L_{max} = maximum instantaneous noise level

Table I: Construction Noise Standards

Allowable Work (Dates and Times)	At Residential Structures					
	Single-Family		Multi-Family		Semi-Residential/Commercial	
	Mobile Equipment[1]	Stationary Equipment[2]	Mobile Equipment[1]	Stationary Equipment[2]	Mobile Equipment[1]	Stationary Equipment[2]
Daily,[3] 7:00 a.m. to 8:00 p.m.	75 dBA	60 dBA	80 dBA	65 dBA	85 dBA	70 dBA
Daily,[4] 8:00 p.m. to 7:00 a.m.	60 dBA	50 dBA	64 dBA	55 dBA	70 dBA	60 dBA
Allowable Work (Dates and Times)	**At Business Structures**					
Daily, Anytime	85 dBA					

Source: County of Los Angeles, Noise Control Ordinance Section 12.08.440.
[1] Represents maximum noise levels for nonscheduled, intermittent, short-term operation (less than 10 days).
[2] Represents maximum noise levels for repetitively scheduled and relatively long-term operation (periods of 10 days or more).
[3] Daily except for Sundays and legal holidays.
[4] Daily and all day on Sundays and legal holidays.
dBA = A-weighted decibels

health officer may deem reasonable. Variances from the City Municipal Code noise standards may be granted by the health officer based on the findings listed below. In granting a variance, the health officer may prescribe any conditions or requirements that are deemed necessary to minimize adverse effects upon the community or the surrounding neighborhood.

1. *Additional time is necessary for the applicant to alter or modify his or her activity, operation, or noise source to comply with the City's established noise standards in the Noise Ordinance; or*

2. *The activity, operation, or noise source cannot feasibly be done in a manner that would comply with the provisions of the Noise Ordinance, and no other reasonable alternative is available to the applicant.*

THRESHOLD OF SIGNIFICANCE

Thresholds of Significance for Noise

Based on the guidelines for implementation of the California Environmental Quality Act (CEQA), Appendix G, State Public Resources Code (PRC) Sections 15000–15387, a project will normally have a significant effect on the environment related to noise if it will substantially increase the ambient noise levels for adjoining areas or conflict with the adopted environmental plans and goals of the community in which it is located. The applicable noise standards governing the project site during construction are the criteria in the Noise Element of the City's General Plan and the City's Municipal Code Noise Ordinance.

Thresholds of Significance for Vibration

Federal Transit Administration and California Department of Transportation

The criteria for environmental impact from ground-borne vibration are based on the maximum levels for a single event. Table F lists the potential vibration damage criteria associated with construction activities, as suggested in the *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).

The FTA guidelines show that a vibration level of up to 102 VdB (equivalent to 0.5 in/sec in PPV [FTA 2018]) is considered safe for buildings consisting of reinforced concrete, steel, or timber (no plaster) and would not result in any construction vibration damage. For a non-engineered timber and masonry building, the construction vibration damage criterion is 94 VdB (0.2 in/sec in PPV). For an engineered concrete and masonry building, the construction vibration damage criterion is 98 VdB (0.3 in/sec in PPV).

Table E shows that nighttime residential uses and institutional uses such as a school have vibration criteria of 72 VdB and 75 dBA, respectively. Also, residential uses during daytime hours have a vibration criterion of 78 VdB based on Table 6-6 in the FTA's *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).

EXISTING SETTING

Overview of the Existing Noise Environment

The primary existing noise sources in the project area are transportation facilities. Traffic on Damien Avenue, Bonita Avenue, and Palomares Avenue is a steady source of ambient noise.

Sensitive Land Uses in the Project Vicinity

Sensitive land uses in the project vicinity include both on- and off-site land uses. The on-site land use is the school because it would continue to operate with students in the classroom buildings and conduct school activities during project construction. For off-site sensitive land uses, the project site is surrounded by residential uses to the north and west across Bonita Avenue and Damien Avenue, respectively. The project site is bordered to the east by the campus of the Joan Macy School/David and Margaret Youth and Family Services Organization, and residential uses. West of the project across Damien Avenue and east of the project across 3rd Street are commercial uses. South of the project site are light industrial uses across Palomares Avenue. The closest sensitive receptors are residences located approximately 50 ft to the west of the project construction boundary, 80 ft to the north of the project construction boundary, and 530 ft to the east of the project construction boundary. The Joan Macy School/David and Margaret Youth and Family Services Organization is located approximately 330 ft to the east of the project construction boundary. The closest commercial use is located approximately 80 ft to the west of the project construction boundary. The residences to the west, north, and east of the project site are separated from the project site by Damien Avenue, Bonita Avenue, and Third Street, respectively, while the Joan Macy School/David and Margaret Youth and Family Services Organization is directly adjacent to the project site.

Ambient Noise Measurements

LSA conducted four long-term (24-hour) measurements to document the existing noise environment in the project area on August 27, 2018, using four DLX NoisePro Dosimeters. Tables J through M show hourly L_{eq} results from the long-term measurements, and Table N shows the calculated CNEL levels from the long-term noise level measurements. As shown in Table N, the calculated CNEL levels range from 56.0 to 65.7 dBA CNEL. Figure 4 shows the long-term noise monitoring locations.

Existing Aircraft Noise

Takeoffs and landings at Brackett Field Airport, a commercial airport located 0.5 mile southeast of the project site, contribute to the aircraft noise in the project area. The project site is outside the 60 dBA CNEL noise contour of Brackett Field Airport based on the Noise and Overflight Factors Map in the Brackett Field Airport Land Use Compatibility Plan (ALUCP) (Los Angeles County Airport Land Use Commission [ALUC] 2015).

Table J: Long-Term (24-Hour) Noise Level Measurement Results at LT-1

	Start Time	Date	Noise Level (dBA L_{eq})
1	12:00 PM	8/27/2018	57
2	1:00 PM	8/27/2018	55
3	2:00 PM	8/27/2018	56
4	3:00 PM	8/27/2018	59
5	4:00 PM	8/27/2018	59
6	5:00 PM	8/27/2018	59
7	6:00 PM	8/27/2018	63
8	7:00 PM	8/27/2018	60
9	8:00 PM	8/27/2018	52
10	9:00 PM	8/27/2018	52
11	10:00 PM	8/27/2018	50
12	11:00 PM	8/27/2018	50
13	12:00 AM	8/28/2018	48
14	1:00 AM	8/28/2018	48
15	2:00 AM	8/28/2018	48
16	3:00 AM	8/28/2018	48
17	4:00 AM	8/28/2018	50
18	5:00 AM	8/28/2018	57
19	6:00 AM	8/28/2018	56
20	7:00 AM	8/28/2018	60
21	8:00 AM	8/28/2018	56
22	9:00 AM	8/28/2018	56
23	10:00 AM	8/28/2018	59
24	11:00 AM	8/28/2018	56

Source: Compiled by LSA (September 2018).
dBA L_{eq} = equivalent continuous sound level measured in A-weighted decibels

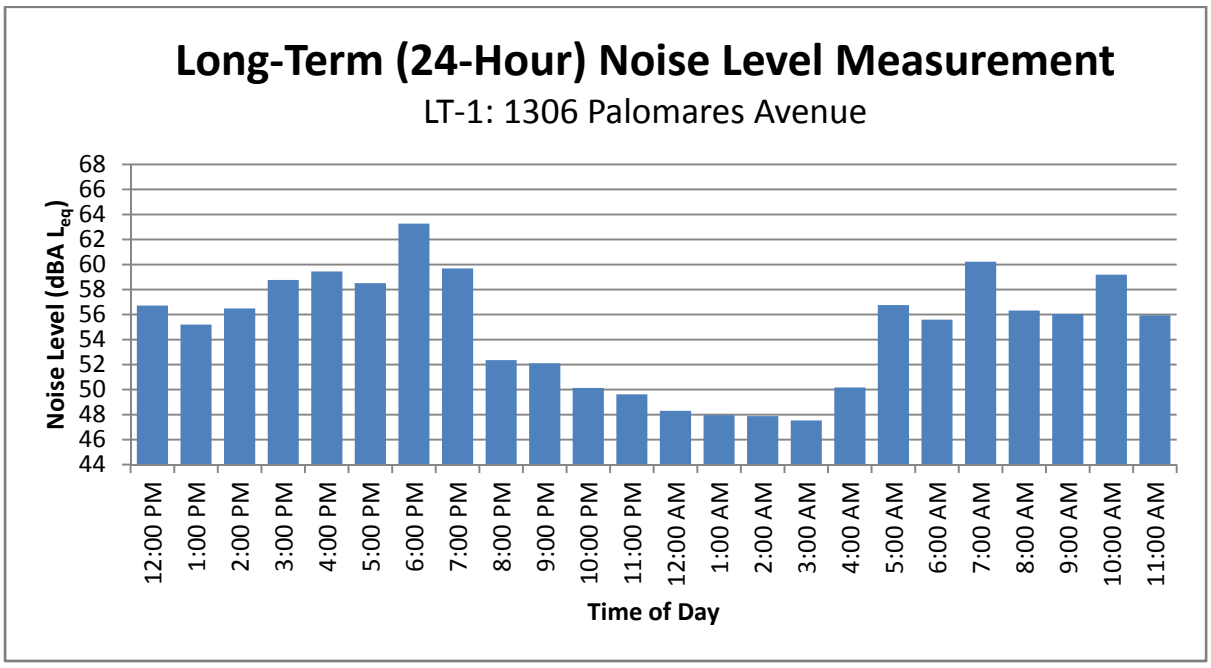

Table K: Long-Term (24-Hour) Noise Level Measurement Results at LT-2

	Start Time	Date	Noise Level (dBA L_{eq})
1	11:00 AM	8/27/2018	56
2	12:00 PM	8/27/2018	56
3	1:00 PM	8/27/2018	55
4	2:00 PM	8/27/2018	58
5	3:00 PM	8/27/2018	60
6	4:00 PM	8/27/2018	59
7	5:00 PM	8/27/2018	59
8	6:00 PM	8/27/2018	58
9	7:00 PM	8/27/2018	56
10	8:00 PM	8/27/2018	51
11	9:00 PM	8/27/2018	52
12	10:00 PM	8/27/2018	50
13	11:00 PM	8/27/2018	49
14	12:00 AM	8/28/2018	49
15	1:00 AM	8/28/2018	48
16	2:00 AM	8/28/2018	48
17	3:00 AM	8/28/2018	48
18	4:00 AM	8/28/2018	51
19	5:00 AM	8/28/2018	55
20	6:00 AM	8/28/2018	55
21	7:00 AM	8/28/2018	60
22	8:00 AM	8/28/2018	57
23	9:00 AM	8/28/2018	55
24	10:00 AM	8/28/2018	55

Source: Compiled by LSA (September 2018).
dBA L_{eq} = equivalent continuous sound level measured in A-weighted decibels

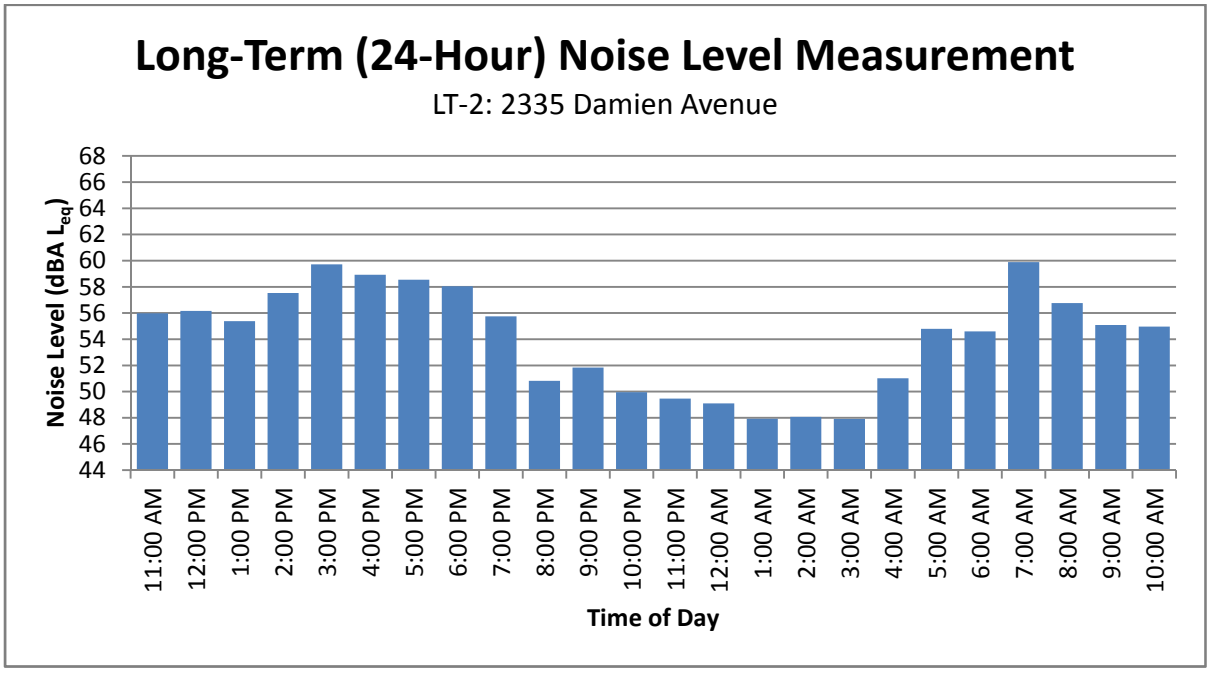

Table L: Long-Term (24-Hour) Noise Level Measurement Results at LT-3

	Start Time	Date	Noise Level (dBA L_{eq})
1	12:00 PM	8/27/2018	64
2	1:00 PM	8/27/2018	64
3	2:00 PM	8/27/2018	64
4	3:00 PM	8/27/2018	66
5	4:00 PM	8/27/2018	65
6	5:00 PM	8/27/2018	66
7	6:00 PM	8/27/2018	65
8	7:00 PM	8/27/2018	63
9	8:00 PM	8/27/2018	62
10	9:00 PM	8/27/2018	60
11	10:00 PM	8/27/2018	57
12	11:00 PM	8/27/2018	53
13	12:00 AM	8/28/2018	52
14	1:00 AM	8/28/2018	50
15	2:00 AM	8/28/2018	47
16	3:00 AM	8/28/2018	51
17	4:00 AM	8/28/2018	53
18	5:00 AM	8/28/2018	58
19	6:00 AM	8/28/2018	63
20	7:00 AM	8/28/2018	67
21	8:00 AM	8/28/2018	66
22	9:00 AM	8/28/2018	63
23	10:00 AM	8/28/2018	64
24	11:00 AM	8/28/2018	64

Source: Compiled by LSA (September 2018).
dBA L_{eq} = equivalent continuous sound level measured in A-weighted decibels

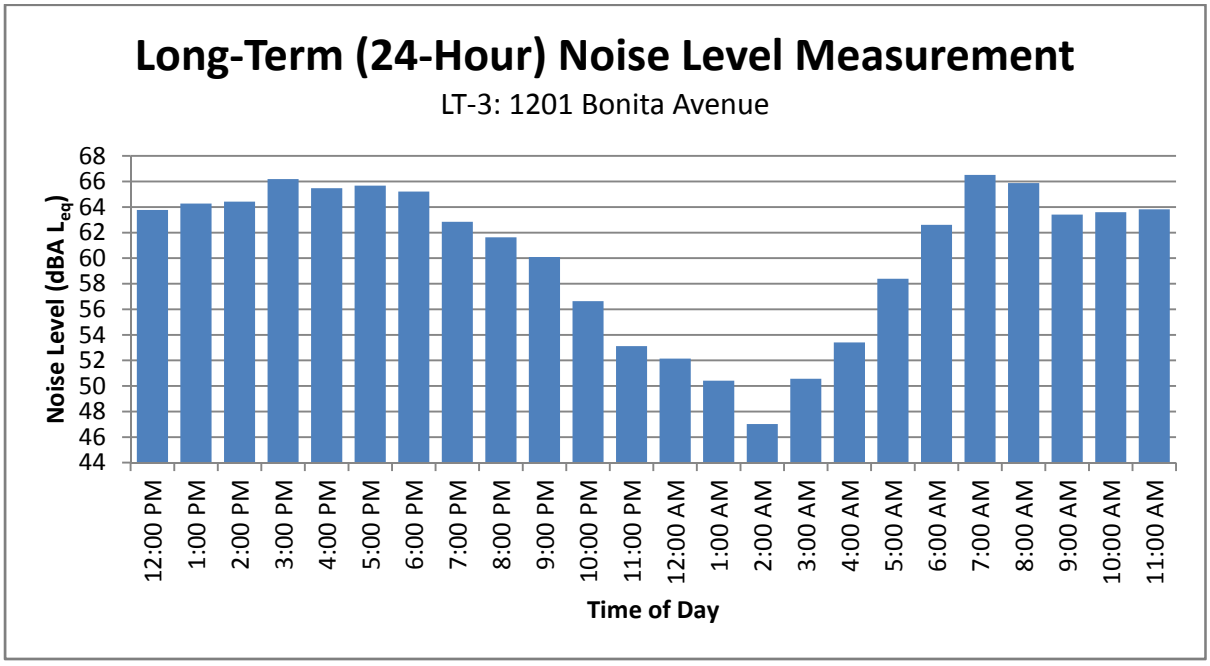

Table M: Long-Term (24-Hour) Noise Level Measurement Results at LT-4

	Start Time	Date	Noise Level (dBA L_{eq})
1	1:00 PM	8/27/2018	51
2	2:00 PM	8/27/2018	50
3	3:00 PM	8/27/2018	52
4	4:00 PM	8/27/2018	52
5	5:00 PM	8/27/2018	53
6	6:00 PM	8/27/2018	52
7	7:00 PM	8/27/2018	51
8	8:00 PM	8/27/2018	48
9	9:00 PM	8/27/2018	48
10	10:00 PM	8/27/2018	45
11	11:00 PM	8/27/2018	44
12	12:00 AM	8/28/2018	46
13	1:00 AM	8/28/2018	45
14	2:00 AM	8/28/2018	46
15	3:00 AM	8/28/2018	43
16	4:00 AM	8/28/2018	44
17	5:00 AM	8/28/2018	45
18	6:00 AM	8/28/2018	57
19	7:00 AM	8/28/2018	57
20	8:00 AM	8/28/2018	49
21	9:00 AM	8/28/2018	52
22	10:00 AM	8/28/2018	50
23	11:00 AM	8/28/2018	49
24	12:00 PM	8/28/2018	51

Source: Compiled by LSA (September 2018).
dBA L_{eq} = equivalent continuous sound level measured in A-weighted decibels

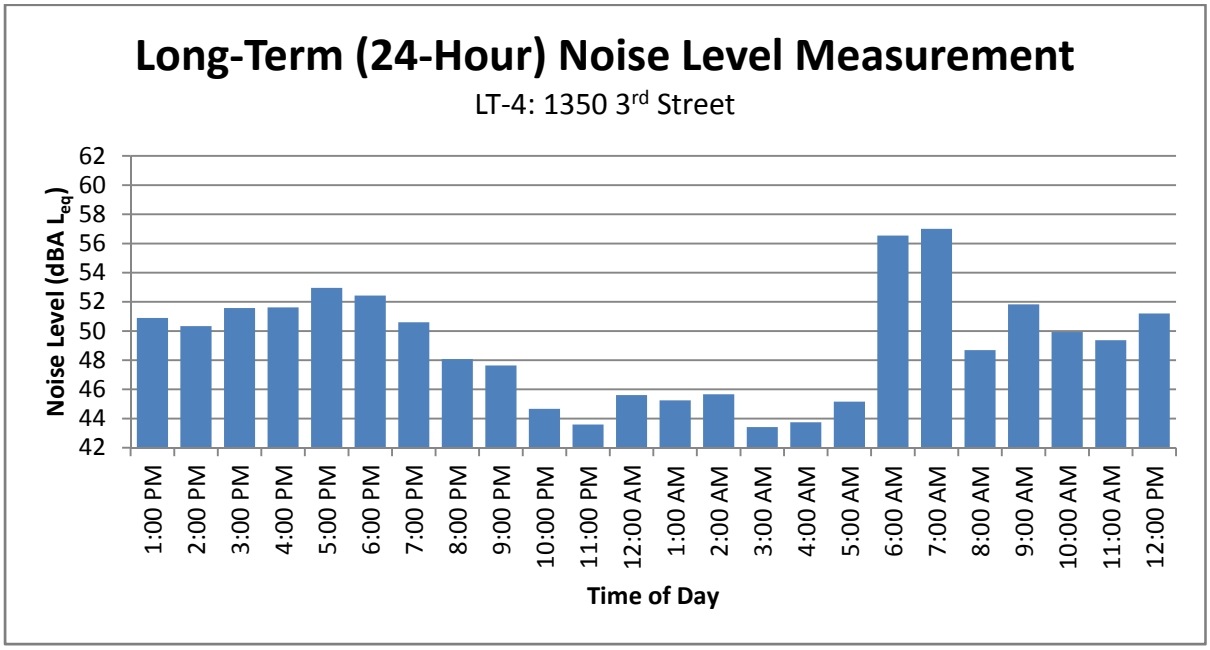

Table N: Long-Term Ambient Noise Monitoring Results

Monitoring No	Location	Date	Start Time	Duration (hours)	Noise Level (dBA CNEL)	Noise Source(s)
LT-1	1306 Palomares Avenue. In front of the industrial use, south of Damien High School.	8/27/2018	12:00 p.m.	24	60.5	Distant traffic on Arrow Highway and occasional traffic on Damien Avenue, on Palomares Avenue, in parking lots, and in driveways. Distant truck at roadway resurfacing on 8/27. Occasional aircraft and occasional passenger train with horn at tracks to the south.
LT-2	2235 Damien Avenue In front of the home, southwest of the driveway to the Damien High School western parking lot.	8/27/2018	11:00 a.m.	24	59.4	Occasional traffic on Damien Avenue, faint traffic on Bonita Avenue. Occasional aircraft and parking lot activity.
LT-3	1201 Bonita Avenue. In the front yard of the residence across from the school parking lot.	8/27/2018	12:00 p.m.	24	65.7	Traffic on Bonita Avenue. Occasional aircraft.
LT-4	1350 3rd Street. West of the David and Margaret Youth and Family Services. East of the Damien High School sports areas.	8/27/2018	1:00 p.m.	24	56.0	Distant traffic on Bonita Avenue; school intercom and bells; and faint constant noise from generator at school. Occasional aircraft, train horns, and some HVAC from structures at David and Margaret Youth and Family Services.

Source: Compiled by LSA (September 2018).
dBA = A-weighted decibels
CNEL = Community Noise Equivalent Level
HVAC = heating, ventilation, and air conditioning

LSA

LEGEND

Project Location

Long-Term Monitoring Locations

FIGURE 4

N

0 100 200

FEET

SOURCE: Bing (2015)

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Damien High School Master Plan Update

Noise Monitoring Locations

Existing Traffic Noise

The guidelines included in the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA-RD-77-108) were used to evaluate traffic-related noise conditions along roadway segments in the project vicinity. This model requires various parameters, including traffic volumes, vehicle mix, vehicle speed, and roadway geometry, to compute typical equivalent noise levels during daytime, evening, and nighttime hours. The resultant noise levels are weighted and summed over 24-hour periods to determine the CNEL values. Traffic volumes were obtained from the *Traffic Assessment and Site Access Analysis – Damien High School Master Plan Update Memorandum* (LSA 2018). The standard vehicle mix for Southern California roadways was used for traffic on these roadway segments. Table O provides the existing traffic noise levels in the project vicinity. These traffic noise levels are representative of a worst-case scenario that assumes flat terrain and no shielding between the traffic and the noise contours. Table O shows that traffic noise levels from roadways surrounding the project are generally low. As shown in Table O, the 70 dBA CNEL noise contour extends less than 50 ft from the Bonita Avenue centerline, while the 65 and 60 dBA CNEL noise contours are 84 ft and 175 ft from the roadway centerline, respectively. Also, the 70, 65, and 60 dBA CNEL noise contours for Damien Avenue and Palomares Avenue extend less than 50 ft from the roadway centerline.

IMPACTS

Short-Term Construction Noise Impacts

Two types of short-term noise impacts could occur during construction of the proposed project. First, construction crew commutes and the transport of construction equipment and materials to the site for the proposed project would incrementally increase noise levels on access roads leading to the site. Although there would be a relatively high single-event noise exposure potential causing intermittent noise nuisance (passing trucks at 50 ft would generate up to a maximum of 84 dBA), the effect on longer-term (hourly or daily) ambient noise levels would be small when compared to existing hourly/daily traffic volumes of 1,458/14,580, 547/5,470, and 228/2,280 on Bonita Avenue, Damien Avenue, and Palomares Street, respectively. These roadways would be used to access the project site. Because construction-related vehicle trips would not approach the hourly/daily traffic volumes of 1,458/14,580, 547/5,470, and 228/2,280 vehicles on Bonita Avenue, Damien Avenue, and Palomares Street, respectively, traffic noise would not increase by 3 dBA. A noise level increase of less than 3 dBA would not be perceptible to the human ear in an outdoor environment. Therefore, short-term, construction-related impacts associated with worker commutes and equipment transport to the project site would be less than significant.

The second type of short-term noise impact is related to noise generated during demolition, excavation, grading, and building erection on the project site. Construction is completed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics.

These various sequential phases would change the character of the noise generated on the site and, therefore, the noise levels surrounding the site as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. Table P lists

Table O: Existing Traffic Noise Levels

Roadway Segment	ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane
Damien Avenue north of Bonita Avenue	8,910	< 50	< 50	59	59.4
Damien Avenue between Bonita Avenue and Project Driveway 1	5,470	< 50	< 50	< 50	57.9
Damien Avenue between Project Driveway 1 and Project Driveway 2	4,860	< 50	< 50	< 50	57.4
Damien Avenue between Project Driveway 2 and Project Driveway 3	3,500	< 50	< 50	< 50	56.0
Damien Avenue between Project Driveway 3 and Palomares Avenue	3,230	< 50	< 50	< 50	55.6
Bonita Avenue west of Damien Avenue	11,370	< 50	71	145	64.6
Bonita Avenue between Damien Avenue and Project Driveway 5	14,580	< 50	82	171	65.7
Bonita Avenue between Project Driveway 5 and Project Driveway 6	14,150	< 50	81	168	65.6
Bonita Avenue east of Project Driveway 6	15,170	< 50	84	175	65.9
Palomares Avenue west of Damien Avenue	2,280	< 50	< 50	< 50	56.0
Palomares Avenue between Damien Avenue and Project Driveway 7	2,280	< 50	< 50	< 50	54.1
Palomares Avenue east of Project Driveway 7	2,280	< 50	< 50	< 50	54.1

Source: Compiled by LSA (2019).
Note: Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information. Noise modeling was performed using the Southern California fleet mix and distributions.
ADT = average daily traffic
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels
ft = foot/feet

Table P: Typical Construction Equipment Noise Levels

Equipment Description	Acoustical Usage Factor[1]	Maximum Noise Level (L_{max}) at 50 Feet[2]
Backhoe	40	80
Compactor (ground)	20	80
Compressor	40	80
Crane	16	85
Dozer	40	85
Dump Truck	40	84
Excavator	40	85
Flatbed Truck	40	84
Forklift	20	85
Front-End Loader	40	80
Grader	40	85
Impact Pile Driver	20	95
Jackhammer	20	85
Pickup Truck	40	55
Pneumatic Tools	50	85
Pump	50	77
Rock Drill	20	85
Roller	20	85
Scraper	40	85
Tractor	40	84
Welder	40	73

Source: *FHWA Highway Construction Noise Handbook,* Table 9.1 (FHWA 2006).
Note: The noise levels reported in this table are rounded to the nearest whole number.
[1] Usage factor is the percentage of time during a construction noise operation that a piece of construction equipment is operating at full power.
[2] Maximum noise levels were developed based on Spec 721.560 from the CA/T program to be consistent with the City of Boston, Massachusetts, Noise Code for the "Big Dig" project.
CA/T = Central Artery/Tunnel
L_{max} = maximum instantaneous noise level
FHWA = Federal Highway Administration

typical construction equipment noise levels recommended for noise impact assessments, based on a distance of 50 ft between the equipment and a noise receptor, taken from the FHWA Roadway Construction Noise Model (RCNM; FHWA 2006).

Typical noise levels range up to 88 dBA L_{max} at 50 ft during the noisiest construction phases. The site preparation phase, which includes excavation and grading of the site, tends to generate the highest noise levels because the noisiest construction equipment is earthmoving equipment. Earthmoving equipment includes excavating machinery such as backfillers, bulldozers, draglines, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders.

Project construction is expected to require the use of front-end loaders, bulldozers, and water trucks/pickup trucks. Noise associated with the use of construction equipment is estimated to be between 55 and 85 dBA L_{max} at a distance of 50 ft from the active construction area for the site preparation phase. As shown in Table P, the maximum noise level generated by each scraper is assumed to be approximately 85 dBA L_{max} at 50 ft. Each dozer would generate approximately 85 dBA L_{max} at 50 ft. The maximum noise level generated by water trucks/pickup trucks is approximately 55 dBA L_{max} at 50 ft from these vehicles. Each doubling of the sound sources with equal strength

increases the noise level by 3 dBA. Assuming that each piece of construction equipment operates at some distance from the other equipment, the worst-case combined noise level during this phase of construction would be 88 dBA L_{max} at a distance of 50 ft from the active construction area. Based on a usage factor of 40 percent, the worst-case combined noise level during this phase of construction would be 84 dBA L_{eq} at a distance of 50 ft from the active construction area.

Table Q lists the closest sensitive receptors surrounding the project site along with their approximate distance to the construction boundary, and the projected construction noise exposure in terms of maximum noise level (dBA L_{max}) and equivalent continuous sound level (dBA L_{eq}).

Table Q: Construction Noise Levels

Sensitive Receptor	Reference Noise Level (dBA L_{max})	Reference Noise Level (dBA L_{eq})	Reference Distance (ft)	Distance (ft)	Noise Level (dBA L_{max})	Noise Level (dBA L_{eq})
On-site School	88	84	50	15	98	94
Off-site Residences	88	84	50	50	88	84
Off-site School[1]	88	84	50	330	72	68
Off-site Commercial	88	84	50	80	84	80

Source: Compiled by LSA (2019).
[1] Joan Macy School/David and Margaret Youth and Family Services Organization.
dBA = A-weighted decibels
ft = foot/feet
L_{eq} = equivalent continuous sound level
L_{max} = maximum instantaneous noise level

On-site school uses would be located as close as 15 ft from the construction boundary and would be exposed to construction noise levels up to 98 dBA L_{max} (94 dBA L_{eq}). Construction noise levels at on-site school uses would exceed the City's daytime construction noise standard of 75 dBA L_{max} for residential uses (the noise standard for which the school was evaluated). In addition, the closest off-site receptors—the residence to the west, the school to the east (Joan Macy School/David and Margaret Youth and Family Services Organization), and the commercial use to the west—are located approximately 50 ft, 330 ft, and 80 ft from the construction boundary, respectively. These off-site receptors would be exposed to construction noise levels of 88 dBA L_{max} (84 dBA L_{eq}), 72 dBA L_{max} (68 dBA L_{eq}), and 84 dBA L_{max} (80 dBA L_{eq}), respectively. Construction noise levels at the closest off-site residence to the west would exceed the City's daytime construction noise standard of 75 dBA L_{max}. In addition, the off-site school to the east and commercial use to the northeast would not exceed the City's daytime construction noise standards of 75 dBA L_{max} for residential uses (the noise standard for which the school was evaluated) and 85 dBA L_{max}, respectively. Therefore, implementation of Mitigation Measures N-1 through N-3 would be required to reduce construction noise at the closest receptors (including on-site school uses) to the maximum extent feasible and would reduce construction noise impacts to a less than significant level.

Mitigation Measure N-1: The construction contractor shall limit demolition and construction activities to between the hours of 7:00 a.m. and 8:00 p.m. on weekdays and Saturdays. Construction activities are prohibited on Sundays and holidays. In accordance with Chapter 8.20 (Noise Control) of the City of La Verne (City) Municipal Code and Section 12.08.440 (Construction Noise) of the County of Los Angeles Noise Ordinance, the construction contractor shall ensure that construction noise levels do not exceed 75 A-weighted decibels (dBA) for mobile equipment and 60 dBA for stationary equipment, as measured at the respective structures of the nearest sensitive receptors for all development applications prepared pursuant to the Damien High School Master Plan Update. Project-specific sensitive receptors consist of on-site school facilities and off-site residential buildings surrounding the project site, as well as off-site commercial uses east and west of the project site and the off-site Joan Macy School/David and Margaret Youth and Family Services Organization (school) east of the project site.

To verify noise levels during demolition and construction, the project proponent shall retain an acoustical engineer to perform noise level monitoring on the first day of demolition and construction activities and pursuant to a weekly schedule thereafter. Additionally, the project proponent shall designate a construction relations officer to serve as a liaison for responding to any concerns regarding construction noise. The liaison's telephone number(s) shall be prominently displayed at each demolition/ construction site for the duration of construction activities.

The findings of the noise monitoring shall be reported to the City Building Official and Community Development Department on a weekly basis. If noise levels during construction do not exceed 75 dBA for mobile equipment or 60 dBA for stationary equipment as measured at the respective structures of the nearest sensitive receptors, no further mitigation is required. However, if noise levels exceed 75 dBA for mobile equipment or 60 dBA for stationary equipment as measured at the respective structures of the nearest sensitive receptors, the City Building Official and Community Development Department must be notified immediately and **Mitigation Measure N-2** shall apply. This measure shall be implemented to the satisfaction of the City Building Official and Community Development Department.

Mitigation Measure N-2: If the acoustical engineer's noise level monitoring results for all development applications prepared pursuant to the Damien High School Master Plan Update indicate that noise levels during

demolition and construction exceed 75 dBA for mobile equipment or 60 dBA for stationary equipment, as measured at the respective structures of the nearest sensitive receptors, the project proponent shall implement a variety of noise-attenuating features to reduce noise levels to within the City's standards to the maximum extent feasible. Such noise attenuating features may include, but would not be limited to:

- A reduction in the number or size of construction equipment to achieve compliant noise levels.
- Equipping all construction equipment with appropriate noise-attenuating devices.
- Maintaining equipment so that vehicles and their loads are secured from rattling and banging.
- Turning equipment off when not in use to avoid unnecessary idling.
- Staging of stationary equipment in areas that will create the greatest distance between construction-related noise sources and noise-sensitive receptors.
- Erection of temporary construction barriers around stationary equipment.
- Equipping construction vehicles with smart back-up alarms that automatically adjust the sound level of the alarm in response to ambient noise levels or, alternatively, employing human spotters to ensure safety when mobile construction equipment is moving in reverse in lieu of back-up alarms.
- Use of hydraulically or electrically powered impact tools (e.g., jackhammers, pavement breakers, and caisson drills) in lieu of pneumatic tools, when feasible, to avoid noise associated with compressed air exhaust from pneumatically powered tools. When use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used. External jackets on the tools themselves shall be used whenever feasible. Quieter procedures, such as the use of drills rather than impact tools, shall be used whenever feasible.
- Erection of temporary noise attenuation perimeter wall(s) where applicable. A 14 ft high temporary construction barriers would provide a noise level reduction of 14 dBA.

- Temporary relocation/rescheduling of on-site classroom uses to an area of the campus or time at which occupants of structures would be exposed to noise levels not to exceed 75 dBA from mobile sources or 60 dBA from stationary sources.

The acoustical engineer shall review the effectiveness of the noise-attenuating features' ability to reduce demolition and construction noise to within 75 dBA for mobile equipment and 60 dBA for stationary equipment, as measured at the respective structures of the nearest sensitive receptors. These measures would ensure any feasible project- and/or site-specific noise attenuation features and practices would be employed as necessary for each development application prepared pursuant to the Damien High School Master Plan Update. Under conditions where the acoustical engineer, in coordination with the City Building Official and Community Development Department, determines that compliance with the City's noise standards would not be technically feasible and that no other reasonable alternative is available to the proponent, **Mitigation Measure N-3** shall be implemented. This measure shall be implemented to the satisfaction of the City Building Official and Community Development Department.

Mitigation Measure N-3: If, after implementation of all reasonably feasible noise attenuation features and practices for all development applications prepared pursuant to the Damien High School Master Plan Update, the acoustical engineer, in coordination with the City Building Official and Community Development Department, may determine that compliance with the City's noise standards would not be technically feasible and that no other reasonable alternative is available to the project proponent. In this case, the proponent shall apply for a variance from the requirements of the construction noise standards in accordance with Section 8.20.020 (Amendments) of the City's Noise Ordinance and Section 12.08.580 (Variances) of the County of Los Angeles Noise Ordinance.

Variances from the requirements of the construction noise standards may be granted by the health officer for a period not to exceed 2 years, subject to such terms, conditions, and requirements as the health officer may deem reasonable. A variance may be granted only if the health officer finds that:

1. Additional time is necessary for the applicant to alter or modify his activity, operation, or noise source to comply with Section 12.08.440 (Construction Noise) of the County of Los Angeles Noise Ordinance; or

2. The activity, operation, or noise source cannot feasibly be done in a manner that would comply with the provisions of Section 12.08.440 (Construction Noise) of the County of Los Angeles Noise Ordinance, and no other reasonable alternative is available to the applicant.

In granting a variance, the health officer may prescribe any conditions or requirements s/he deems necessary to minimize adverse effects upon the community or the surrounding neighborhood. The project proponent shall be required to implement all such conditions or requirements, as verified through inspection by the City Building Official and/or Community Development Department, or as otherwise specified by the health officer.

In granting variances, the health officer shall consider the magnitude of nuisance caused by the offensive noise; the uses of property within the area of impingement by the noise; operations carried on under existing nonconforming rights, conditional use permits, or zone variances; the time factors related to study, design, financing, and construction of remedial work; the economic factors related to age and useful life of the equipment; the general public interest, health, and welfare; the feasibility of plans submitted for correction; and the effect on the community if the variance were refused. This measure shall be implemented to the satisfaction of the City Building Official and Community Development Department.

Short-Term Construction Vibration Impacts

This construction vibration impact analysis discusses the level of human annoyance using vibration levels in VdB and will assess the potential for building damage using vibration levels in PPV (in/sec) because vibration levels calculated in RMS are best for characterizing human response to building vibration, whereas the vibration level in PPV is best used to characterize the potential for damage. As shown in Table F, the FTA guidelines indicate that a vibration level up to 102 VdB (equivalent to 0.5 in/sec in PPV) is considered safe for buildings consisting of reinforced concrete, steel, or timber (no plaster) and would not result in any construction vibration damage (FTA 2018). For a non-engineered timber and masonry building, the construction vibration damage criterion is 94 VdB (0.2 in/sec in PPV). For buildings extremely susceptible to vibration damage, the construction vibration damage criterion is 90 VdB (0.12 in/sec in PPV).

Table R shows the PPV and VdB values at a distance of 25 ft from the construction vibration source. As shown in Table R, bulldozers and other heavy-tracked construction equipment (except for pile drivers and vibratory rollers) generate approximately 87 VdB of ground-borne vibration when measured at a distance of 25 ft, based on the *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018). This level of ground-borne vibration levels would result in potential annoyance

Table R: Vibration Source Amplitudes for Construction Equipment

Equipment	Reference PPV/L_V at 25 ft	
	PPV (in/sec)	L_V (VdB)[1]
Pile Driver (Impact), Typical	0.644	104
Pile Driver (Sonic), Typical	0.170	93
Vibratory Roller	0.210	94
Hoe Ram	0.089	87
Large Bulldozer	**0.089**	**87**
Caisson Drilling	0.089	87
Loaded Trucks[2]	**0.076**	**86**
Jackhammer[2]	0.035	79
Small Bulldozer[2]	0.003	58

Sources: *Transit Noise and Vibration Impact AssessmentManual* (FTA 2018).
[1] RMS vibration velocity in decibels (VdB) is 1 µin/sec.
[2] Equipment shown in **bold** is expected to be used on-site.
µin/sec = microinches per second
ft = foot/feet
FTA = Federal Transit Administration
in/sec = inch/inches per second
L_V = velocity in decibels
PPV = peak particle velocity
RMS = root-mean-square
VdB = vibration velocity decibels

but would not cause any damage to the buildings. Construction vibration, similar to vibration from other sources, would not have any significant effects on outdoor activities (e.g., those outside of commercial and industrial buildings in the project vicinity). Outdoor site preparation for the project is expected to use a bulldozer and a loaded truck. The greatest levels of vibration are anticipated to occur during the site preparation phase. All other phases are expected to result in lower vibration levels. The distance to the nearest buildings for vibration impact analysis is measured between the nearest off-site buildings and the project boundary (assuming the construction equipment would be used at or near the project boundary) because vibration impacts normally occur within the buildings.

The formula for vibration transmission is provided below:

$$L_vdB\ (D) = L_vdB\ (25\ ft) - 30\ Log\ (D/25)$$

$$PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$$

Table S lists the projected vibration level from construction equipment expected to be used on the project site to the nearest buildings in the project vicinity. Construction equipment expected to be used with the highest vibration generation potential includes small rubber-tired bulldozers, loaded trucks, and jackhammers, which would generate 58 VdB (0.003 PPV), 86 VdB (0.076 PPV), and 79 VdB (0.035 PPV) at 25 ft, respectively. Old school buildings on-site that were constructed in the 1920s and 1930s (Spartan Hall and Buildings 100, 200, 300 [north end], and 400) would be susceptible to vibration damage, whereas other on-site school buildings constructed in the 1960s or later would not be susceptible to vibration damage. On-site school buildings (old or not) would be located approximately 15 ft from the construction boundary. As shown in Table S, on-site school buildings (old or not) would experience vibration levels of up to 93 VdB (0.164 PPV [in/sec]).

Table S: Summary of Construction Vibration Levels

Land Use	Direction	Equipment/Activity	Reference Vibration Level (VdB) at 25 ft	Reference Vibration Level (PPV) at 25 ft	Distance (ft)	Maximum Vibration Level (VdB)	Maximum Vibration Level (PPV)
On-site Old School Buildings[1]	N/A	Small bulldozers	58	0.003	15	65	0.006
		Loaded trucks	86	0.076	15	93	0.164
		Jackhammers	79	0.035	15	86	0.075
On-site School Buildings[2]	N/A	Small bulldozers	58	0.003	15	65	0.006
		Loaded trucks	86	0.076	15	93	0.164
		Jackhammers	79	0.035	15	86	0.075
Residential Buildings	West	Small bulldozers	58	0.003	75	44	0.001
		Loaded trucks	86	0.076	75	72	0.015
		Jackhammers	79	0.035	75	65	0.007
Off-site School Buildings[3]	East	Small bulldozers	58	0.003	370	23	0.000
		Loaded trucks	86	0.076	370	51	0.001
		Jackhammers	79	0.035	370	82	0.049

Source: Compiled by LSA (2019).
Note: Old school buildings on site (Spartan Hall and Buildings 100, 200, 300 [north end], and 400) were evaluated using the FTA-recommended building damage threshold of 0.12 PPV (in/sec) (approximately 90 VdB). Other on-site and off-site school buildings and off-site residential buildings were evaluated using the FTA-recommended building damage threshold of 0.2 PPV (in/sec) (approximately 94 VdB).
[1] Old school buildings (Spartan Hall and Buildings 100, 200, 300 [north end], and 400)
[2] School buildings that were constructed in the 1960s or later.
[3] Joan Macy School/David and Margaret Youth and Family Services Organization
ft = foot/feet
FTA = Federal Transit Administration
in/sec = inches per second
PPV = peak particle velocity
VdB = vibration velocity decibels

The closest off-site residential building and the building associated with the Joan Macy School/David and Margaret Youth and Family Services Organization are located approximately 75 ft and 370 ft, respectively, from the project construction boundary. As shown in Table S, the closest off-site residential building and the building associated with the Joan Macy School/David and Margaret Youth and Family Services Organization would experience vibration levels of up to 72 VdB (0.015 PPV [in/sec]) and 51 VdB (0.001 PPV [in/sec]), respectively.

Construction vibration levels at old school buildings on site (Spartan Hall and Buildings 100, 200, 300 [north end], and 400) from construction equipment or activity would exceed the FTA threshold of 90 VdB (0.12 PPV [in/sec]) for building damage when loaded trucks operate at the project construction boundary. The implementation of Mitigation Measure N-4 to prohibit loaded trucks from operating within 20 ft from the old school buildings on-site (Spartan Hall and Buildings 100, 200, north end of 300, and 400) would reduce construction vibration levels to 89 VdB (0.106 PPV [in/sec]). This vibration level would not exceed the FTA threshold of 90 VdB (0.12 PPV [in/sec]) for building damage.

Construction vibration levels at on-site school buildings that are constructed in the 1960's or later, off-site residential buildings to the west, and off-site school buildings to the east from construction equipment or activity would not exceed the FTA threshold of 94 VdB (0.2 PPV [in/sec]) for building damage when loaded trucks operate at the project construction boundary. Construction vibration levels would not results in annoyance for off-site residences to the west or off-site school buildings to the east because construction vibration levels would not reach the annoyance threshold of 78

VdB and 75 VdB, respectively. Howevever, construction vibration levels would have the potential to result in annoyance for on-site school uses because construction vibration levels would exceed 75 VdB. Vibration levels for on-site school uses would be temporary in nature and would no longer occur once construction of the project is completed. Implementation of Mitigation Measure N-4 to prohibit loaded trucks from operating within 20 ft of old school buildings on-site (Spartan Hall and Buildings 100, 200, north end of 300, and 400) would reduce construction vibration levels to 89 VdB (0.106 PPV [in/sec] and would avoid potential damage to these building strucutres. Therefore, implementation of Mitigation Measure N-4 would be required to reduce construction vibration impacts to a less than significant level.

Mitigation Measure N-4: During demolition and construction activities, the project proponent shall ensure all contractors prohibit loaded trucks from operating within 20 feet of Spartan Hall and Buildings 100, 200, 300 (north end), and 400. These are buildings identified to be potentially susceptible to vibration damage during demolition and construction of the projects proposed under the Master Plan Update. Temporary on-site signage in the immediate proximity of Spartan Hall and Buildings 100, 200, 300 (north end), and 400 shall be erected notifying construction personnel of the prohibition. The erection of appropriate signage shall be verified by an acoustical engineer on the first day of demolition and construction activities and pursuant to a weekly schedule thereafter. This measure shall be implemented to the satisfaction of the City Building Official and Community Development Department.

Long-Term Aircraft Noise Impacts

The project is located outside the 60 dBA CNEL impact zone from Brackett Field Airport, based on the Noise and Overflight Factors Map in ALUCP (ALUC 2015). Therefore, the project site is located within an area with maximum noise levels from aircraft operations less than 60 dBA CNEL.

Long-Term Off-Site Traffic Noise Impacts

The guidelines included in the FHWA Highway Traffic Noise Prediction Model (FHWA-RD-77-108) were used to evaluate highway traffic-related noise conditions along roadway segments in the project vicinity. This model requires various parameters, including traffic volumes, vehicle mix, vehicle speed, and roadway geometry, to compute typical equivalent noise levels during daytime, evening, and nighttime hours. The resultant noise levels are weighted and summed over 24-hour periods to determine the CNEL values. Traffic volumes were obtained from the *Traffic Assessment and Site Access Analysis – Damien High School Master Plan Update* (LSA 2018). The standard vehicle mix for Southern California roadways was used for traffic on these roadway segments. Tables T and U provide the traffic noise levels for the existing with and without project, and opening year 2029 with and without project scenarios, respectively. These noise levels represent the worst-case scenario, which assumes no shielding is provided between the traffic and the location where the noise contours are drawn. Appendix A provides the specific assumptions used in developing these noise levels and model printouts.

Table T: Existing Traffic Noise Levels Without and With Project

Roadway Segment	Existing Without Project					Existing With Project						
	ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	ADT	Change in ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase over Baseline CNEL (dBA) 50 ft from Centerline of Outermost Lane
Damien Avenue north of Bonita Avenue	8,910	< 50	< 50	59	59.4	8,910	0	< 50	< 50	59	59.4	0.0
Damien Avenue between Bonita Avenue and Project Driveway 1	5,470	< 50	< 50	< 50	57.9	5,470	0	< 50	< 50	< 50	57.9	0.0
Damien Avenue between Project Driveway 1 and Project Driveway 2	4,860	< 50	< 50	< 50	57.4	4,860	0	< 50	< 50	< 50	57.4	0.0
Damien Avenue between Project Driveway 2 and Project Driveway 3	3,500	< 50	< 50	< 50	56.0	4,800	1,300	< 50	< 50	< 50	57.3	1.3
Damien Avenue between Project Driveway 3 and Palomares Avenue	3,230	< 50	< 50	< 50	55.6	3,320	90	< 50	< 50	< 50	55.7	0.1
Bonita Avenue west of Damien Avenue	11,370	< 50	71	145	64.6	11,370	0	< 50	71	145	64.6	0.0
Bonita Avenue between Damien Avenue and Project Driveway 5	14,580	< 50	82	171	65.7	14,580	0	< 50	82	171	65.7	0.0
Bonita Avenue between Project Driveway 5 and Project Driveway 6	14,150	< 50	81	168	65.6	14,150	0	< 50	81	168	65.6	0.0
Bonita Avenue east of Project Driveway 6	15,170	< 50	84	175	65.9	15,170	0	< 50	84	175	65.9	0.0
Palomares Avenue west of Damien Avenue	2,280	< 50	< 50	< 50	56.0	2,280	0	< 50	< 50	< 50	56.0	0.0
Palomares Avenue between Damien Avenue and Project Driveway 7	2,280	< 50	< 50	< 50	54.1	2,560	280	< 50	< 50	< 50	54.6	0.5
Palomares Avenue east of Project Driveway 7	2,280	< 50	< 50	< 50	54.1	2,150	-130	< 50	< 50	< 50	53.8	-0.3

Source: Compiled by LSA (2019).
Note: Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.
ADT = average daily traffic
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels
ft = foot/feet

Table U: Opening Year (2029) Traffic Noise Levels Without and With Project

Roadway Segment	Opening Year (2029) Without Project					Opening Year (2029) With Project						
	ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	ADT	Change in ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase over Baseline CNEL (dBA) 50 ft from Centerline of Outermost Lane
Damien Avenue north of Bonita Avenue	9,090	< 50	< 50	60	59.5	9,090	0	< 50	< 50	60	59.5	0.0
Damien Avenue between Bonita Avenue and Project Driveway 1	5,530	< 50	< 50	< 50	57.9	5,530	0	< 50	< 50	< 50	57.9	0.0
Damien Avenue between Project Driveway 1 and Project Driveway 2	4,920	< 50	< 50	< 50	57.4	4,920	0	< 50	< 50	< 50	57.4	0.0
Damien Avenue between Project Driveway 2 and Project Driveway 3	3,560	< 50	< 50	< 50	56.0	4,860	1,300	< 50	< 50	< 50	57.4	1.4
Damien Avenue between Project Driveway 3 and Palomares Avenue	3,290	< 50	< 50	< 50	55.7	3,380	90	< 50	< 50	< 50	55.8	0.1
Bonita Avenue west of Damien Avenue	11,740	< 50	72	148	64.7	11,740	0	< 50	72	148	64.7	0.0
Bonita Avenue between Damien Avenue and Project Driveway 5	15,020	< 50	84	174	65.8	15,020	0	< 50	84	174	65.8	0.0
Bonita Avenue between Project Driveway 5 and Project Driveway 6	14,580	< 50	82	171	65.7	14,580	0	< 50	82	171	65.7	0.0
Bonita Avenue east of Project Driveway 6	15,590	< 50	86	179	66.0	15,590	0	< 50	86	179	66.0	0.0
Palomares Avenue west of Damien Avenue	2,330	< 50	< 50	< 50	56.1	2,330	0	< 50	< 50	< 50	56.1	0.0
Palomares Avenue between Damien Avenue and Project Driveway 7	2,330	< 50	< 50	< 50	54.2	2,640	310	< 50	< 50	< 50	54.7	0.5
Palomares Avenue east of Project Driveway 7	2,330	< 50	< 50	< 50	54.2	2,220	-110	< 50	< 50	< 50	54.0	-0.2

Source: Compiled by LSA (2019).
Note: Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.
ADT = average daily traffic
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels
ft = foot/feet

Tables T and U show that the project-related traffic noise increase would be no greater than 1.4 dBA. Although the project would not generate any new trips, the project-related traffic noise increases are due to the reconfiguration and relocation of parking lots. Noise level increases below 3 dBA would not be perceptible to the human ear in an outdoor environment. Therefore, traffic noise impacts from project-related traffic on off-site sensitive receptors would be less than significant, and no mitigation measures are required.

Land Use Compatibility Assessment

The land use compatibility of the project site was assessed based on the Noise/Land Use Compatibility Matrix contained in the City of La Verne General Plan. Based on Table C, a noise level of 65 dBA CNEL is conditionally acceptable for schools.

Table U shows that the 70 and 65 dBA CNEL impact zones along Bonita Avenue, Damien Avenue, and Palomares Avenue adjacent to the project are within 50 ft of the roadway centerline. As noise-sensitive areas associated with the school are not within 50 ft of the Bonita Avenue, Damien Avenue, and Palomares Avenue centerlines, the proposed project would not be exposed to traffic noise levels that exceed 65 dBA CNEL. No mitigation measures are required.

Long-Term Vibration Impacts

The proposed Damien High School would not generate vibration. In addition, vibration levels generated from project-related traffic on the adjacent roadways (Bonita Avenue, Damien Avenue, and Palomares Avenue) are unusual for on-road vehicles because the rubber tires and suspension systems of on-road vehicles provide vibration isolation. Vibration generated from project-related traffic on the adjacent roadways would be less than significant and no mitigation measures are required.

Long-Term Off-Site Stationary Noise Impacts

Adjacent off-site land uses would be potentially exposed to stationary-source noise impacts from the proposed on-site truck delivery and truck loading/unloading activities; heating, ventilation, and air conditioning (HVAC) equipment; and parking lot activities.

Truck Delivery and Truck Loading/Unloading Activities

Existing truck delivery and truck loading/unloading activities occur on the west side of the project site, adjacent to the lunch area approximately 125 ft from the closest residence to the west across Damien Avenue. These activities occur during school hours. The location of the truck loading/unloading activities would be relocated to the west side of the new student center building (as shown on Figure 3) and would remain approximately 125 ft from the closest residence to the west across Damien Avenue.

Truck delivery and truck loading/unloading activities would occur during school hours and would not occur during the City's prohibited hours between 10:00 p.m. and 6:00 a.m. The location of truck delivery and truck loading/unloading activities would remain in a relatively similar location, and no perceptible noise increases would result from truck delivery and truck loading/unloading activities.

Therefore, no off-site noise impacts would occur from on-site truck delivery and truck loading/ unloading activities. No mitigation measures are required.

HVAC Equipment

The existing school buildings have a number of existing rooftop HVAC units, which operate during school hours. The project would construct new buildings that include new rooftop HVAC units. These would operate at the same time as existing HVAC units (during school hours). New school buildings associated with the project would include a student center, classrooms, a chapel with classrooms, and a performing arts center. It is assumed that each new school building would have at least four rooftop HVAC units. Rooftop HVAC equipment would generate noise levels of 66.6 dBA L_{eq} at 5 ft based on previous measurements conducted by LSA.

The closest off-site residence is located west of the project across Damien Avenue. The approximate distance from the new rooftop HVAC units to the closest residence to the west across Damien Avenue ranges between 160 ft and 648 ft. At these distances, new HVAC units would generate a noise level of 44 dBA L_{eq}. This noise level is much lower than the measured ambient noise level of 59.4 dBA CNEL. Therefore, no off-site noise impacts would occur from new on-site HVAC equipment. No mitigation measures are required.

Parking Lot Activities

The project would restripe existing surface parking on the northwestern corner of the project site, reconfigure existing parking lots on the west side of the project site, and construct a new surface parking lot at the southwest corner of the project site. Surface parking activities would generate noise that would potentially impact adjacent land uses. As discussed above, noise generated from parking activities would include noise generated by vehicles traveling at slow speeds, engine start-up noise, car door slams, car horns, car alarms, and tire squeals. These activities would occur during daytime hours. Representative parking activities would generate approximately 60 to 70 dBA L_{max} at 50 ft. Noise levels generated from parking activities are intermittent in nature.

Restriping existing surface parking on the northwestern corner of the project site and reconfiguring existing parking lots on the west side of the project site would generate noise levels from parking activities similar to existing parking activities at the same distance to the closest residence to the west across Damien Avenue. No perceptible noise increases would result from parking activities at these two locations.

The new surface parking lot southwest of the project is located approximately 65 ft from the closest residence to the west across Damien Avenue and approximately 80 ft from the closest light industrial use across Palomares Street. At a distance of 65 ft and 80 ft, noise would be attenuated by 2 dBA and 4 dBA, respectively, compared to the noise level measured at 50 ft from the source. Noise generated from the new surface parking lot southwest of the project would reach 68 dBA L_{max} (70 dBA - 2 dBA = 68 dBA) and 66 dBA L_{max} (70 dBA - 4 dBA = 66 dBA), respectively. Intermittent noise levels from parking activities would not exceed the City's exterior maximum noise standard of 70 dBA L_{max} for residential uses and 90 dBA L_{max} for industrial uses. Therefore, no off-site exterior noise impacts would occur from the new surface parking lot located southwest of the project site. No mitigation measures are required.

Based on the United States Environmental Protection Agency's (EPA) Protective Noise Levels (1978), with a combination of exterior walls, doors, and windows, standard construction for Southern California (warm climate) commercial or residential buildings would provide more than 24 dBA in exterior-to-interior noise reduction with windows closed and 12 dBA or more with windows open (the national average is 25 dBA with windows closed and 15 dBA with windows open). With windows and doors open, interior noise levels at these buildings would be 56 dBA L_{max} (68 dBA - 12 dBA = 56 dBA). With windows and doors closed, interior noise levels would be 44 dBA L_{max} (68 dBA - 24 dBA = 44 dBA). Intermittent noise levels from parking activities would exceed the City's interior noise standard of 55 dBA for residential uses with windows and doors open, while the City's interior noise standard would not be exceed with windows and doors closed. As existing residences would have mechanical ventilation systems such as air conditioning, no off-site interior noise impacts would occur from the new surface parking lot. No mitigation measures are required.

MITIGATION MEASURES

Short-Term Construction Noise Impacts

The following mitigation measures would be required to reduce construction noise at the closest receptors to the maximum extent feasible:

Mitigation Measure N-1: The construction contractor shall limit demolition and construction activities to between the hours of 7:00 a.m. and 8:00 p.m. on weekdays and Saturdays. Construction activities are prohibited on Sundays and holidays. In accordance with Chapter 8.20 (Noise Control) of the City of La Verne (City) Municipal Code and Section 12.08.440 (Construction Noise) of the County of Los Angeles Noise Ordinance, the construction contractor shall ensure that construction noise levels do not exceed 75 A-weighted decibels (dBA) for mobile equipment and 60 dBA for stationary equipment, as measured at the respective structures of the nearest sensitive receptors for all development applications prepared pursuant to the Damien High School Master Plan Update. Project-specific sensitive receptors consist of on-site school facilities and off-site residential buildings surrounding the project site, as well as off-site commercial uses east and west of the project site and the off-site Joan Macy School/David and Margaret Youth and Family Services Organization (school) east of the project site.

To verify noise levels during demolition and construction, the project proponent shall retain an acoustical engineer to perform noise level monitoring on the first day of demolition and construction activities and pursuant to a weekly schedule thereafter. Additionally, the project proponent shall designate a construction relations officer to serve as a liaison for responding to any concerns regarding construction noise. The liaison's telephone

number(s) shall be prominently displayed at each demolition/ construction site for the duration of construction activities.

The findings of the noise monitoring shall be reported to the City Building Official and Community Development Department on a weekly basis. If noise levels during construction do not exceed 75 dBA for mobile equipment or 60 dBA for stationary equipment as measured at the respective structures of the nearest sensitive receptors, no further mitigation is required. However, if noise levels exceed 75 dBA for mobile equipment or 60 dBA for stationary equipment as measured at the respective structures of the nearest sensitive receptors, the City Building Official and Community Development Department must be notified immediately and **Mitigation Measure N-2** shall apply. This measure shall be implemented to the satisfaction of the City Building Official and Community Development Department.

Mitigation Measure N-2: If the acoustical engineer's noise level monitoring results for all development applications prepared pursuant to the Damien High School Master Plan Update indicate that noise levels during demolition and construction exceed 75 dBA for mobile equipment or 60 dBA for stationary equipment, as measured at the respective structures of the nearest sensitive receptors, the project proponent shall implement a variety of noise-attenuating features to reduce noise levels to within the City's standards to the maximum extent feasible. Such noise attenuating features may include, but would not be limited to:

- A reduction in the number or size of construction equipment to achieve compliant noise levels.
- Equipping all construction equipment with appropriate noise-attenuating devices.
- Maintaining equipment so that vehicles and their loads are secured from rattling and banging.
- Turning equipment off when not in use to avoid unnecessary idling.
- Staging of stationary equipment in areas that will create the greatest distance between construction-related noise sources and noise-sensitive receptors.
- Erection of temporary construction barriers around stationary equipment.

- Equipping construction vehicles with smart back-up alarms that automatically adjust the sound level of the alarm in response to ambient noise levels or, alternatively, employing human spotters to ensure safety when mobile construction equipment is moving in reverse in lieu of back-up alarms.

- Use of hydraulically or electrically powered impact tools (e.g., jackhammers, pavement breakers, and caisson drills) in lieu of pneumatic tools, when feasible, to avoid noise associated with compressed air exhaust from pneumatically powered tools. When use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used. External jackets on the tools themselves shall be used whenever feasible. Quieter procedures, such as the use of drills rather than impact tools, shall be used whenever feasible.

- Erection of temporary noise attenuation perimeter wall(s) where applicable. A 14 ft high temporary construction barriers would provide a noise level reduction of 14 dBA.

- Temporary relocation/rescheduling of on-site classroom uses to an area of the campus or time at which occupants of structures would be exposed to noise levels not to exceed 75 dBA from mobile sources or 60 dBA from stationary sources.

The acoustical engineer shall review the effectiveness of the noise-attenuating features' ability to reduce demolition and construction noise to within 75 dBA for mobile equipment and 60 dBA for stationary equipment, as measured at the respective structures of the nearest sensitive receptors. These measures would ensure any feasible project- and/or site-specific noise attenuation features and practices would be employed as necessary for each development application prepared pursuant to the Damien High School Master Plan Update. Under conditions where the acoustical engineer, in coordination with the City Building Official and Community Development Department, determines that compliance with the City's noise standards would not be technically feasible and that no other reasonable alternative is available to the proponent, **Mitigation Measure N-3** shall be implemented. This measure shall be implemented to the satisfaction of the City Building Official and Community Development Department.

Mitigation Measure N-3: If, after implementation of all reasonably feasible noise attenuation features and practices for all development applications prepared pursuant to the Damien High School Master Plan Update, the acoustical engineer, in coordination with the City Building Official

and Community Development Department, may determine that compliance with the City's noise standards would not be technically feasible and that no other reasonable alternative is available to the project proponent. In this case, the proponent shall apply for a variance from the requirements of the construction noise standards in accordance with Section 8.20.020 (Amendments) of the City's Noise Ordinance and Section 12.08.580 (Variances) of the County of Los Angeles Noise Ordinance.

Variances from the requirements of the construction noise standards may be granted by the health officer for a period not to exceed 2 years, subject to such terms, conditions, and requirements as the health officer may deem reasonable. A variance may be granted only if the health officer finds that:

1. Additional time is necessary for the applicant to alter or modify his activity, operation, or noise source to comply with Section 12.08.440 (Construction Noise) of the County of Los Angeles Noise Ordinance; or

2. The activity, operation, or noise source cannot feasibly be done in a manner that would comply with the provisions of Section 12.08.440 (Construction Noise) of the County of Los Angeles Noise Ordinance, and no other reasonable alternative is available to the applicant.

In granting a variance, the health officer may prescribe any conditions or requirements s/he deems necessary to minimize adverse effects upon the community or the surrounding neighborhood. The project proponent shall be required to implement all such conditions or requirements, as verified through inspection by the City Building Official and/or Community Development Department, or as otherwise specified by the health officer.

In granting variances, the health officer shall consider the magnitude of nuisance caused by the offensive noise; the uses of property within the area of impingement by the noise; operations carried on under existing nonconforming rights, conditional use permits, or zone variances; the time factors related to study, design, financing, and construction of remedial work; the economic factors related to age and useful life of the equipment; the general public interest, health, and welfare; the feasibility of plans submitted for correction; and the effect on the community if the variance were refused. This measure shall be implemented to the satisfaction of the City Building Official and Community Development Department.

Short-Term Construction Vibration Impacts

The following mitigation measure would be required to avoid building damage:

Mitigation Measure N-4: During demolition and construction activities, the project proponent shall ensure all contractors prohibit loaded trucks from operating within 20 feet of Spartan Hall and Buildings 100, 200, 300 (north end), and 400. These are buildings identified to be potentially susceptible to vibration damage during demolition and construction of the projects proposed under the Master Plan Update. Temporary on-site signage in the immediate proximity of Spartan Hall and Buildings 100, 200, 300 (north end), and 400 shall be erected notifying construction personnel of the prohibition. The erection of appropriate signage shall be verified by an acoustical engineer on the first day of demolition and construction activities and pursuant to a weekly schedule thereafter. This measure shall be implemented to the satisfaction of the City Building Official and Community Development Department.

Long-Term Aircraft Noise Impacts

No mitigation measures are required.

Long-Term Traffic Noise Impacts

No mitigation measures are required.

Long-Term Vibration Impacts

No mitigation measures are required.

Long-Term Stationary Noise Impacts

No mitigation measures are required.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

Implementation of mitigation measures for short-term construction noise and vibration impacts would result in less than significant impacts.

REFERENCES

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APPENDIX A

FHWA TRAFFIC NOISE MODEL PRINTOUTS

TABLE Existing NP-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Damien Avenue North of Bonita Avenue
NOTES: Damien High School Master Plan Update - Existing NP

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 8910 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 15 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 59.39

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	59.5	124.9

TABLE Existing NP-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Damien Avenue Between Bonita Avenue and Project Driveway 1
NOTES: Damien High School Master Plan Update - Existing NP

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 5470 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 8 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.90

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	90.0

TABLE Existing NP-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Damien Avenue Between Project Driveway 1 and Project Driveway 2
NOTES: Damien High School Master Plan Update - Existing NP

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 4860 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 8 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.39

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	83.2

TABLE Existing NP-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Damien Avenue Between Project Driveway 2 and Project Driveway 3
NOTES: Damien High School Master Plan Update - Existing NP

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3500 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 8 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 55.96

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	67.0

TABLE Existing NP-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Damien Avenue Between Project Driveway 3 and Palomares Avenue
NOTES: Damien High School Master Plan Update - Existing NP

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3230 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 8 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 55.61

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	63.6

TABLE Existing NP-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Bonita Avenue West of Damien Avenue
NOTES: Damien High School Master Plan Update - Existing NP

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 11370 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 25 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.60

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	71.0	145.4	309.5

TABLE Existing NP-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Bonita Avenue Between Damien Avenue and Project Driveway 5
NOTES: Damien High School Master Plan Update - Existing NP

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 14580 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 25 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.68

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	82.4	170.9	365.0

TABLE Existing NP-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Bonita Avenue Between Project Driveway 5 and Project Driveway 6
NOTES: Damien High School Master Plan Update - Existing NP

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 14150 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 25 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.55

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	80.9	167.6	357.8

TABLE Existing NP-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Bonita Avenue East of Project Driveway 6
NOTES: Damien High School Master Plan Update - Existing NP

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 15170 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 25 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.85

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	84.4	175.4	374.7

TABLE Existing NP-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Palomares Avenue West of Damien Avenue
NOTES: Damien High School Master Plan Update - Existing NP

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2280 SPEED (MPH): 30 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 8 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 55.96

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	67.0

TABLE Existing NP-11
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Palomares Avenue Between Damien Avenue and Project Driveway 7
NOTES: Damien High School Master Plan Update - Existing NP

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2280 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 8 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 54.10

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	50.7

TABLE Existing NP-12
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Palomares Avenue East of Project Driveway 7
NOTES: Damien High School Master Plan Update - Existing NP

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2280 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 8 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 54.10

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	50.7

TABLE Existing P-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Damien Avenue North of Bonita Avenue
NOTES: Damien High School Master Plan Update - Existing P

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 8910 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 15 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 59.39

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	59.5	124.9

TABLE Existing P-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Damien Avenue Between Bonita Avenue and Project Driveway 1
NOTES: Damien High School Master Plan Update - Existing P

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 5470 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 8 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.90

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	90.0

TABLE Existing P-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Damien Avenue Between Project Driveway 1 and Project Driveway 2
NOTES: Damien High School Master Plan Update - Existing P

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 4860 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 8 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.39

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	83.2

TABLE Existing P-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Damien Avenue Between Project Driveway 2 and Project Driveway 3
NOTES: Damien High School Master Plan Update - Existing P

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 4800 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 8 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.33

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	82.5

TABLE Existing P-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Damien Avenue Between Project Driveway 3 and Palomares Avenue
NOTES: Damien High School Master Plan Update - Existing P

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3320 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 8 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 55.73

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	64.8

TABLE Existing P-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Bonita Avenue West of Damien Avenue
NOTES: Damien High School Master Plan Update - Existing P

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 11370 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 25 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.60

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	71.0	145.4	309.5

TABLE Existing P-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Bonita Avenue Between Damien Avenue and Project Driveway 5
NOTES: Damien High School Master Plan Update - Existing P

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 14580 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 25 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.68

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	82.4	170.9	365.0

TABLE Existing P-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Bonita Avenue Between Project Driveway 5 and Project Driveway 6
NOTES: Damien High School Master Plan Update - Existing P

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 14150 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 25 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.55

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	80.9	167.6	357.8

TABLE Existing P-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Bonita Avenue East of Project Driveway 6
NOTES: Damien High School Master Plan Update - Existing P

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 15170 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 25 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.85

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	84.4	175.4	374.7

TABLE Existing P-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Palomares Avenue West of Damien Avenue
NOTES: Damien High School Master Plan Update - Existing P

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2280 SPEED (MPH): 30 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 8 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 55.96

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	67.0

TABLE Existing P-11
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Palomares Avenue Between Damien Avenue and Project Driveway 7
NOTES: Damien High School Master Plan Update - Existing P

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2560 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 8 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 54.60

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	54.6

TABLE Existing P-12
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Palomares Avenue East of Project Driveway 7
NOTES: Damien High School Master Plan Update - Existing P

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2150 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 8 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 53.84

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Opening Year NP-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Damien Avenue North of Bonita Avenue
NOTES: Damien High School Master Plan Update - Opening Year NP

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 9090 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 15 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 59.47

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	60.2	126.5

TABLE Opening Year NP-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Damien Avenue Between Bonita Avenue and Project Driveway 1
NOTES: Damien High School Master Plan Update - Opening Year NP

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 5530 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 8 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.95

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	90.6

TABLE Opening Year NP-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Damien Avenue Between Project Driveway 1 and Project Driveway 2
NOTES: Damien High School Master Plan Update - Opening Year NP

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 4920 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 8 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.44

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	83.9

TABLE Opening Year NP-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Damien Avenue Between Project Driveway 2 and Project Driveway 3
NOTES: Damien High School Master Plan Update - Opening Year NP

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3560 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 8 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 56.03

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	67.8

TABLE Opening Year NP-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Damien Avenue Between Project Driveway 3 and Palomares Avenue
NOTES: Damien High School Master Plan Update - Opening Year NP

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3290 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 8 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 55.69

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	64.4

TABLE Opening Year NP-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Bonita Avenue West of Damien Avenue
NOTES: Damien High School Master Plan Update - Opening Year NP

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 11740 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 25 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.74

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	72.4	148.4	316.1

TABLE Opening Year NP-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Bonita Avenue Between Damien Avenue and Project Driveway 5
NOTES: Damien High School Master Plan Update - Opening Year NP

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 15020 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 25 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.81

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	83.9	174.2	372.3

TABLE Opening Year NP-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Bonita Avenue Between Project Driveway 5 and Project Driveway 6
NOTES: Damien High School Master Plan Update - Opening Year NP

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 14580 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 25 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.68

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	82.4	170.9	365.0

TABLE Opening Year NP-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Bonita Avenue East of Project Driveway 6
NOTES: Damien High School Master Plan Update - Opening Year NP

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 15590 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 25 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.97

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	85.8	178.5	381.6

TABLE Opening Year NP-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Palomares Avenue West of Damien Avenue
NOTES: Damien High School Master Plan Update - Opening Year NP

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2330 SPEED (MPH): 30 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 8 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 56.05

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	68.0

TABLE Opening Year NP-11
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Palomares Avenue Between Damien Avenue and Project Driveway 7
NOTES: Damien High School Master Plan Update - Opening Year NP

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2330 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 8 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 54.19

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	51.4

TABLE Opening Year NP-12
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Palomares Avenue East of Project Driveway 7
NOTES: Damien High School Master Plan Update - Opening Year NP

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2330 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 8 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 54.19

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL	70 CNEL	65 CNEL	60 CNEL	55 CNEL
	0.0	0.0	0.0	51.4

TABLE Opening Year P-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Damien Avenue North of Bonita Avenue
NOTES: Damien High School Master Plan Update - Opening Year P

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 9090 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 15 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 59.47

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	60.2	126.5

TABLE Opening Year P-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Damien Avenue Between Bonita Avenue and Project Driveway 1
NOTES: Damien High School Master Plan Update - Opening Year P

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 5530 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 8 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.95

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	90.6

TABLE Opening Year P-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Damien Avenue Between Project Driveway 1 and Project Driveway 2
NOTES: Damien High School Master Plan Update - Opening Year P

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 4920 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 8 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.44

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	83.9

TABLE Opening Year P-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Damien Avenue Between Project Driveway 2 and Project Driveway 3
NOTES: Damien High School Master Plan Update - Opening Year P

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 4860 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 8 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.39

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	83.2

TABLE Opening Year P-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Damien Avenue Between Project Driveway 3 and Palomares Avenue
NOTES: Damien High School Master Plan Update - Opening Year P

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3380 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 8 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 55.81

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	65.5

TABLE Opening Year P-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Bonita Avenue West of Damien Avenue
NOTES: Damien High School Master Plan Update - Opening Year P

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 11740 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 25 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.74

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	72.4	148.4	316.1

TABLE Opening Year P-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Bonita Avenue Between Damien Avenue and Project Driveway 5
NOTES: Damien High School Master Plan Update - Opening Year P

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 15020 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 25 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.81

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	83.9	174.2	372.3

TABLE Opening Year P-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Bonita Avenue Between Project Driveway 5 and Project Driveway 6
NOTES: Damien High School Master Plan Update - Opening Year P

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 14580 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 25 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.68

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	82.4	170.9	365.0

TABLE Opening Year P-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Bonita Avenue East of Project Driveway 6
NOTES: Damien High School Master Plan Update - Opening Year P

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 15590 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 25 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.97

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	85.8	178.5	381.6

TABLE Opening Year P-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Palomares Avenue West of Damien Avenue
NOTES: Damien High School Master Plan Update - Opening Year P

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2330 SPEED (MPH): 30 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 8 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 56.05

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	68.0

TABLE Opening Year P-11
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Palomares Avenue Between Damien Avenue and Project Driveway 7
NOTES: Damien High School Master Plan Update - Opening Year P

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2640 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 8 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 54.74

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	55.7

TABLE Opening Year P-12
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/28/2018
ROADWAY SEGMENT: Palomares Avenue East of Project Driveway 7
NOTES: Damien High School Master Plan Update - Opening Year P

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2220 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 8 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 53.98

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

Appendix F

Traffic Impact Analysis (On Flash Drive)

CARLSBAD
FRESNO
IRVINE
LOS ANGELES
PALM SPRINGS
POINT RICHMOND
RIVERSIDE
ROSEVILLE
SAN LUIS OBISPO

MEMORANDUM

DATE: January 21, 2019

TO: Luke Seibert, Senior Planner, City of La Verne

FROM: Ambarish Mukherjee, AICP, P.E.

SUBJECT: Traffic Assessment and Site Access Analysis- Damien High School Master Plan Update (LSA Project No. LVR1801)

LSA has prepared this traffic assessment/site access analysis (study) for the proposed Damien High School (school) Master Plan Update, located at 2280 Damien Avenue, between Bonita Avenue to the north and Palomares Avenue to the south, in the City of La Verne (City). The proposed project will upgrade the school facilities with the addition of approximately 73,100 square feet of new development, demolition of approximately 6,000 square feet of existing development and modification of the internal circulation pattern, parking and access points. However, the proposed development does not result in any changes in the existing numbers of students, faculty, or staff. Figure 1 illustrates the regional and project location, Figure 2 illustrates the existing site plan, and Figure 3 illustrates the proposed master plan. (All figures attached.) Figure 2 also includes the location of all existing driveways while Figure 3 illustrates the location of all driveways upon completion of the project. Table A summarizes the access types of each of the existing and proposed driveways as illustrated in Figures 2 and 3, respectively.

Table A: Existing and Proposed Driveways

Intersections	Existing Access	Proposed Access
Damien Avenue		
• Project Driveway 1	Exit Only (Egress)	Exit Only (Egress)
• Project Driveway 2	Full Access (Ingress | Egress)	Full Access (Ingress | Egress)
• Project Driveway 3	Enter Only (Ingress)	Full Access (Ingress | Egress)
• Project Driveway 4*	Full Access (Ingress | Egress)	Full Access (Ingress | Egress)
Bonita Avenue		
• Project Driveway 5	Full Access (Ingress | Egress)	Full Access (Ingress | Egress)
• Project Driveway 6	Full Access (Ingress | Egress)	Full Access (Ingress | Egress)
Palomares Avenue		
• Project Driveway 7	*Does Not Exist*	Full Access (Ingress | Egress)

*Project Driveway 4 currently serves as a service access point only and will continue to do so after project completion.

Since the proposed project does not result in any increase in student enrollment, the project is not anticipated to generate any additional trips during the weekday school operations. Additionally, while the Master Plan proposes to redistribute parking lots within the site, it is not anticipated that

this will result in any changes to the trip arrival/departure pattern at a regional level compared to the existing trip pattern. Therefore, a focused traffic analysis was conducted to evaluate the changes in traffic circulation around the school and at the school access driveways used by the faculty, students, or staff.

Although the project will be built in three phases, the study has evaluated traffic issues under full project buildout conditions when all project traffic is redistributed due to the proposed project. Therefore, the following four scenarios were analyzed:

- Existing Conditions;
- Existing Plus Project (Phase 3) Conditions;
- Opening Year Without Project Conditions; and
- Opening Year With Project (Phase 3) Conditions.

Traffic conditions were examined for the weekday a.m. peak hour when both school traffic and adjacent street traffic are at their peak (worst-case scenario). In the case of schools, the a.m. peak hour of vehicle trip generation coincides with the a.m. peak commute hour (i.e., the highest hour between 7:00 and 9:00 a.m.).

Study Intersections

As the project would not change the regional trip distribution, based on the Master Plan and consultation with City staff, the following intersections adjacent to the school were analyzed for access and operational analysis:

1. Damien Avenue/Bonita Avenue;
2. Damien Avenue/Project Driveway 1;
3. Damien Avenue/Project Driveway 2;
4. Damien Avenue/Project Driveway 3;
5. Damien Avenue/Palomares Avenue;
6. Project Driveway 7/Palomares Avenue;
7. Sedalia Avenue-Project Driveway 5/Bonita Avenue; and
8. Project Driveway 6/Bonita Avenue.

Figure 2 and Figure 3 illustrate the study area intersections. Figure 4 illustrates the existing road geometrics and traffic control at the study intersections. Figure 5 illustrates the With Project road geometrics and traffic control at the study intersections.

Volume Development Methodology

The existing traffic volumes include existing traffic school trips. With construction of the proposed project, the existing school traffic will be redistributed due to reallocation of parking within the

school site. Additionally, school traffic includes both "Drop-off" trips as well as traffic that enters the site and parks ("Parking Trips"). Therefore, to analyze the traffic conditions with the proposed project, it is necessary to identify the school trips from the existing traffic volumes. Following is a step-by-step description of the methodology used to develop traffic volumes for all analysis scenarios.

Step 1: Existing Traffic Volumes

Existing traffic volumes at the study intersections were developed from a.m. peak hour traffic counts collected at the seven existing study intersections on May 17, 2018. Figure 6 illustrates the existing a.m. peak hour traffic volumes at the study intersections.

Step 2: Existing Project Trips

As discussed above, school traffic has been separated into two categories: Drop-Off Trips and Parking Trips. The total trip generation for the existing school was developed using the inbound and outbound school traffic counts at the existing school driveways. Table B illustrates the total trips generated by the project. As illustrated in Table B, Damien High School generates 618 inbound and 348 outbound trips during the a.m. peak hour. (Tables B through H attached.) Figure 6 illustrates the numbers of inbound and outbound trips at the project driveways. The difference between the inbound and outbound trips was considered as Parking Trips while the remainder of the trips was considered as Drop-Off Trips. As illustrated in Table B, 348 inbound trips were estimated as inbound Drop-Off Trips and remaining 270 trips were estimated as inbound Parking Trips. Trip assignment for existing school trips was developed based on proportionate percentage of existing traffic volumes at each of the adjacent major intersections (Damien Avenue/Bonita Avenue and Damien Avenue/ Palomares Avenue). Figure 7 illustrates the existing school trip assignment at the study intersections. Figure 8 illustrates the trip distribution of the school traffic at the study intersections under the existing scenario, which has been developed using the existing school trip assignment. This trip distribution helps in identifying the regional trip assignment, which will be required to redistribute school trips under With Project conditions.

Step 3: Existing Background Traffic Volume

To develop existing plus project traffic volumes, it is required to first remove existing school trips from the existing traffic volumes and then add redistributed school traffic to these volumes. To estimate Drop-Off Trips and Parking Trip assignments at the study intersections, the following methodology was used:

1. All Inbound Drop-Off Trips accessing through Project Driveway 5 and Project Driveway 6 on Bonita Avenue exit through Project Driveway 1, Project Driveway 5, or Project Driveway 6.
2. All Inbound Drop-Off Trips accessing through Project Driveway 2 and Project Driveway 3 on Damien Avenue exit through the same driveways.
3. All Parking Trips accessing through Project Driveway 5 and Project Driveway 6 use only the northeast corner parking lot (senior students' parking lot).
4. All Parking Trips accessing through Project Driveway 2 and Project Driveway 3 uses the other remaining on-site parking lots.

Drop-Off Trip assignment at the intersections of Damien Avenue/Bonita Avenue and Damien Avenue/Palomares Avenue is the product of school trip distribution percentages and total Drop-Off Trips at the study intersections. Figure 9 illustrates the existing Drop-Off Trips at the study intersections.

The Parking Trip assignment at the study intersections was obtained by subtracting the Drop-Off Trips from the total school trips. Figure 10 illustrates the existing Parking Trips at the study intersections. As illustrated in Figure 10, 116 Parking Trips access the school site through Project Driveway 5 and Project Driveway 6, and remaining 154 Parking Trips access the school through either Project Driveway 2 or Project Driveway 3. Therefore, as discussed above, 116 Parking Trips access the northeast corner/senior parking lot, while the remaining 154 Parking Trips are distributed among the remaining parking lots.

For purposes of this analysis, the 154 existing Parking Trips accessing through Project Driveway 2 or Project Driveway 3 have been proportionately assigned to the remaining parking lots, except the senior parking lot. Figure 11 illustrates the Parking Trips assignment at each parking lot for the existing condition.

Existing background traffic volumes were developed by subtracting existing school trips (Drop-off and Parking Trips) from the existing traffic volumes. Figure 12 illustrates the existing background traffic volumes.

Step 4: Existing Plus Project Traffic Volume

To develop existing plus project traffic volumes, redistributed project traffic will need to be added to existing background traffic volumes. The trip redistribution for the Master Plan Update is the result of redistribution of parking lots and changes in the access types in some project driveways. Additionally, the Master Plan Update does not result in an increase of the number of students, faculty, or staff. Therefore, total inbound and outbound trips to the school and the regional distribution pattern will remain unchanged. Following is an explanation for the redistribution of the school traffic in the project opening year:

1. **With Project Drop-Off Trips:** The Master Plan does not change the access type of Project Driveway 1, Project Driveway 5, or Project Driveway 6 or the parking lot at the northeast corner. Therefore, it was estimated that Drop-Off and Parking Trips accessing the school through these driveways would remain unchanged. Additionally, Drop-Off Trips previously accessing the project through Project Driveway 2 and Project Driveway 3 would now access the site through Project Driveway 3. Therefore, Drop-Off Trips accessing the project through Project Driveway 3 in the opening year is the sum of the Drop-Off Trips accessing the project through Project Driveway 2 and Project Driveway 3 for the existing scenario. The opening year Drop-Off Trip assignment is the result of this redistribution. Figure 13 illustrates With Project Drop-Off Trips assignment at the study intersections.
2. **With Project Parking Trips:** Inbound trips through Project Driveway 2 are restricted to faculty only. Additionally, as the number of faculty remains unchanged, parking trips assigned to the faculty parking lot will remain the same. As previously noted, Parking Trips accessing via the driveways along Bonita Avenue will remain unchanged. Therefore, the

remainder of Parking Trips was redistributed to each parking lot according to the parking stalls available for each parking lot. Figure 14 illustrates the Parking Trips at the proposed school parking lots. The With Project Parking Trip assignment has been developed based on the regional trip distribution of existing school trips and the number of trips being generated from each of the proposed parking lots. Figure 15 illustrates With Project Parking Trip assignment at the study intersections.

3. **Total With Project Trip Assignment:** Total school trips were developed by adding the project Parking Trips to Drop-Off Trips at the study intersections. Figure 16 illustrates with project school trip assignment at the study intersections.
4. **Existing Plus Project Traffic Volumes:** Existing Plus Project traffic volumes was developed by adding total project assignment traffic to existing background traffic volumes and is illustrated in Figure 17.

Step 5: Opening Year Background Traffic Volumes

The background volumes for opening year were developed by adding background growth and trips from cumulative projects to the existing background volumes. The existing to opening year traffic growth rate was derived from the Southern California Association of Governments (SCAG) 2016–2040 Regional Transportation Plan/Sustainable Community Strategy Final Growth Forecast by Jurisdiction table. The table is included in the scoping agreement letter, which is Attachment B. A table illustrating calculation of the background growth rate is included in Attachment C.

Information about approved and pending projects was obtained from the City, as well as from the neighborhood jurisdiction of the City of San Dimas and the City of Pomona. Table C illustrates the trips generated by the cumulative projects. Figure 18 illustrates the cumulative projects' locations in relation to the project. Figure 19 illustrates the cumulative trip assignment at the study intersections. Figure 20 illustrates the opening year background traffic volumes at the study intersections.

Step 6: Opening Year Without Project Traffic Volumes

Opening Year Without Project traffic volumes were developed by adding existing school trips to the opening year background traffic volumes. Figure 21 illustrates the Opening Year Without Project traffic volumes.

Step 7: Opening Year With Project Traffic Volumes

Opening Year With Project traffic volumes were developed by adding proposed school trips to the opening year background traffic volumes. Figure 22 illustrates the Opening Year With Project traffic volumes.

Detailed volume development worksheets are included in Attachment D.

Levels of Service Definition and Procedures

Traffic studies in the City are prepared using the Los Angeles County Department of Public Works *Traffic Impact Analysis Report Guidelines*, which recommends using the Intersection Capacity

Utilization (ICU) methodology. This study includes analysis of intersections and driveways adjacent to the proposed project, which have a substantial presence of pedestrian and bicycle traffic. ICU methodology cannot evaluate traffic conditions when multiple modes of transportation are present. Additionally, ICU methodology can only be applied to signalized intersections and all school driveways are unsignalized. Therefore, for purposes of this analysis, *Highway Capacity Manual 6* (HCM 6) methodology was used, which incorporates multimodal analysis using the Synchro 10 and HCS7 software. Following is a brief description of the HCM methodology:

Roadway operations and the relationship between capacity and traffic volumes are generally expressed in terms of levels of service (which are defined using the letter grades A through F). These levels recognize that, while an absolute limit exists as to the amount of traffic traveling through a given intersection (the absolute capacity), the conditions that motorists experience rapidly deteriorate as traffic approaches the absolute capacity. Under such conditions, congestion is experienced. There is general instability in the traffic flow, which means that relatively small incidents (e.g., momentary engine stall) can cause considerable fluctuations in speeds and delays. This near-capacity situation is labeled Level of Service (LOS) E. Beyond LOS E, capacity has been exceeded, and arriving traffic will exceed the ability of the intersection to accommodate it. An upstream queue will then form and continue to expand in length until the demand volume again declines.

A complete description of the meaning of level of service can be found in the Transportation Research Board Special Report 209 (HCM 6), which establishes levels of service A through F for intersections as shown in Table D. Table E shows the LOS criteria for signalized and unsignalized intersections.

Project Significance Threshold

All study intersections fall under the jurisdiction of the City, which uses LOS D as its minimum level of service for intersections. According to the City's significance criteria, a significant project impact occurs if the pre-project condition is at or better than the minimum acceptable LOS (D) and the addition of project trips results in unacceptable LOS (E or F), or the project contributes to an existing inacceptable LOS.

Level of Service Analysis

Existing Conditions

LOS analysis was conducted for existing a.m. peak hour conditions to determine current intersection performances. Table F summarizes the existing a.m. peak hour levels of service for the study intersections and indicates that all study area intersections currently operate at satisfactory levels of service. Detailed level of service worksheets are included in Attachment E.

Existing With Project Conditions

LOS analysis was conducted for existing With Project a.m. peak hour conditions to determine projected intersection performances. Table F summarizes the existing a.m. peak hour levels of service for the study intersections and indicates that all study area intersections are forecast to

operate at satisfactory levels of service. Detailed level of service worksheets are included in Attachment E.

Opening Year Without Project Conditions

LOS analysis was conducted for Opening Year Without Project a.m. peak hour conditions to determine projected intersection performances. Table G summarizes the opening year Without Project a.m. peak hour levels of service for the study intersections and indicates that all intersections are forecast to operate at satisfactory levels of service. Detailed level of service worksheets are included in Attachment E.

Opening Year With Project Conditions

LOS analysis was conducted for Opening Year With Project a.m. peak hour conditions to determine projected intersection performances. Table G summarizes the Opening Year With Project a.m. peak hour levels of service for the study intersections and indicates that all intersections are forecast to operate at satisfactory levels of service. Detailed level of service worksheets are included in Attachment E.

Level of Service Conclusion

In summary, all study intersections operate at satisfactory LOS under both existing and opening year conditions. The project does not create any impact in any of the scenarios.

Intersection Queuing Analysis

Existing With Project Conditions

Intersection queuing analysis was conducted to estimate the 95th percentile queue length at the school driveways for existing With Project a.m. peak hour conditions. Table H summarizes the results of this analysis. Detailed queuing analysis worksheets are included in Attachment F. As illustrated in Table H, 95th percentile queue lengths are forecast not to exceed the proposed storage lengths at the project driveways.

Opening Year With Project Conditions

Intersection queuing analysis was conducted to estimate the 95th percentile queue length at the school driveways for Opening Year With Project a.m. peak hour conditions. Table H summarizes the results of this analysis. Detailed queuing analysis worksheets are included in Attachment F. As illustrated in Table H, 95th percentile queue lengths are forecast not to exceed the proposed storage lengths at the project driveways.

Conclusion

The findings of this study illustrates that Damien High School Master Plan Update does not result in any significant traffic impact at the project driveways or adjacent intersections in any of the analysis scenarios. All driveways and intersections are forecast to operate at satisfactory level of service.

Should you have any questions, please do not hesitate to contact me at (951) 781-9310 or email me at Ambarish.Mukherjee@lsa.net.

Attachments

Attachment A: Figures and Tables
- Figure 1: Regional and Project Location
- Figure 2: Existing Site Plan- Damien High School
- Figure 3: Proposed Master Plan- Damien High School
- Figure 4: Existing (2018) Intersection Geometrics and Traffic Control
- Figure 5: With Project Intersection Geometrics and Traffic Control
- Figure 6: Existing (2018) Peak Hour Traffic Volumes
- Figure 7: Existing (2018) School Trip Assignment
- Figure 8: Existing School Trip Distribution
- Figure 9: Existing Drop-Off Trips
- Figure 10: Existing Parking Trips
- Figure 11: Existing Parking Lots Trip Assignment
- Figure 12: Existing Background Traffic Volumes
- Figure 13: Project Drop-Off Trips
- Figure 14: Opening Year Parking Lot Trip Assignment
- Figure 15: Project Parking Trips
- Figure 16: Project School Trips Assignment
- Figure 17: Existing With Project Peak Hour Traffic Volumes
- Figure 18: Cumulative Projects Locations
- Figure 19: Cumulative Projects Trip Assignment
- Figure 20: Opening Year Background Traffic Volumes
- Figure 21: Opening Year without Project Peak Hour Traffic Volumes
- Figure 22: Opening Year with Project Peak Hour Traffic Volumes

- Table B: Project Trip Generation
- Table C: Cumulative Projects Trip Generation
- Table D: Level of Service Definitions for Intersections
- Table E: Level of Service Criteria for Unsignalized and Signalized Intersections
- Table F: Existing Intersection Levels of Service
- Table G: Opening Year Intersection Levels of Service
- Table H: Driveway Queuing Analysis

Attachment B: Scoping Agreement
Attachment C: Existing-Opening Year Growth Rate Calculation
Attachment D: Volume Development Worksheets
Attachment E: Intersection LOS Calculation Worksheets
Attachment F: Queuing Calculation Worksheets

ATTACHMENT A: FIGURES AND TABLES

LSA

FIGURE 1

N

0 1000 2000
FEET

Damien High School Master Plan Update
Traffic Assessment/ Site Impact Analysis

Regional and Project Location

SOURCE: Google Earth, 2016; ESRI Streetmap, 2013.

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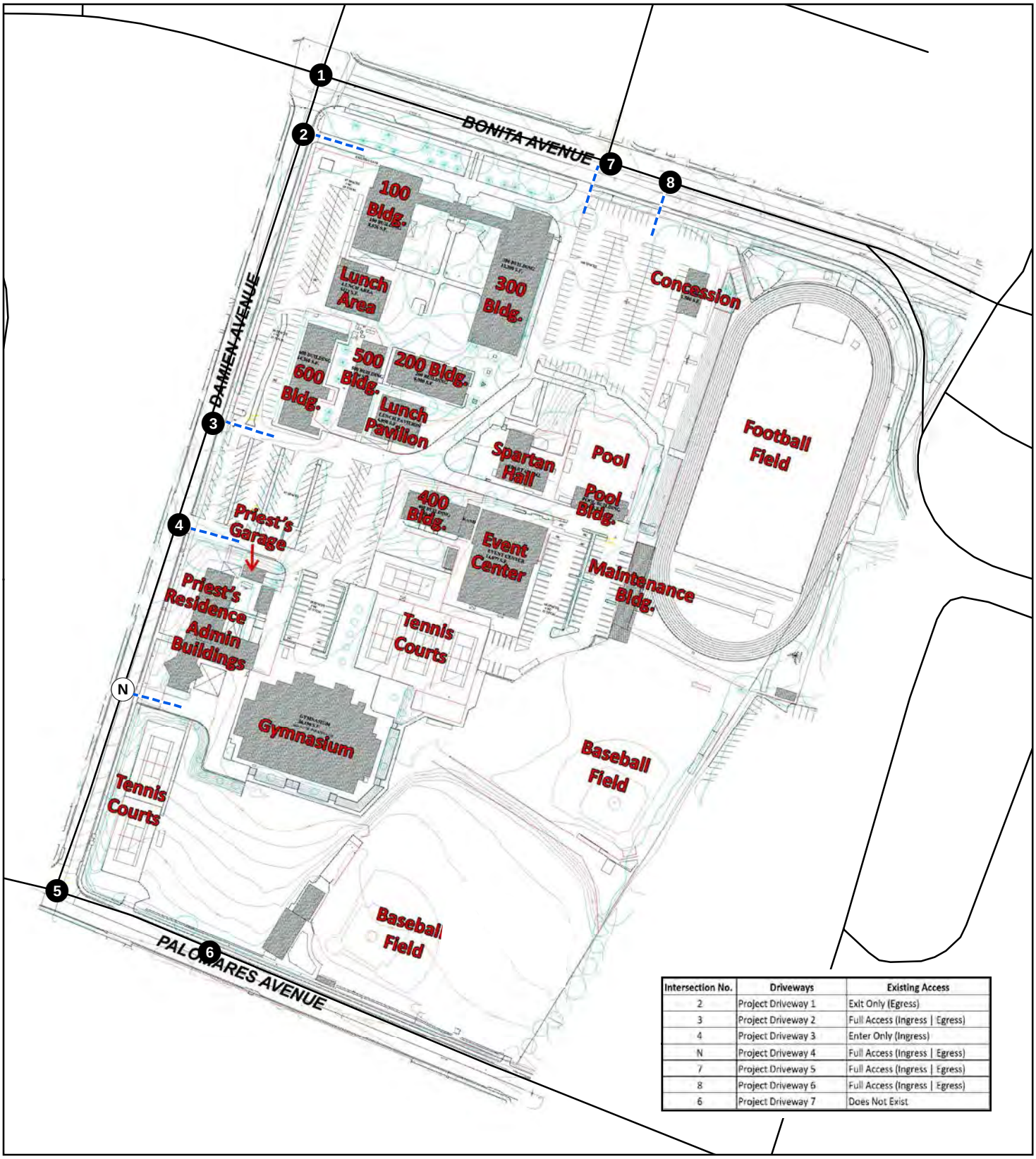

Intersection No.	Driveways	Existing Access
2	Project Driveway 1	Exit Only (Egress)
3	Project Driveway 2	Full Access (Ingress | Egress)
4	Project Driveway 3	Enter Only (Ingress)
N	Project Driveway 4	Full Access (Ingress | Egress)
7	Project Driveway 5	Full Access (Ingress | Egress)
8	Project Driveway 6	Full Access (Ingress | Egress)
6	Project Driveway 7	Does Not Exist

LSA

LEGEND

- Study Area Intersection
- Intersection Not Considered for Access Analysis
- Existing Driveway

N

0 100 200

FEET

FIGURE 2

Damien High School Master Plan Update
Site Access Analysis

Existing Site - Damien High School

SOURCE: ESRI Streetmap, 2013; Kalban Architects, 2017.

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Intersection No.	Driveways	Proposed Access
2	Project Driveway 1	Exit Only (Egress)
3	Project Driveway 2	Full Access (Ingress | Egress)
4	Project Driveway 3	Full Access (Ingress | Egress)
N	Project Driveway 4	Full Access (Ingress | Egress)
7	Project Driveway 5	Full Access (Ingress | Egress)
8	Project Driveway 6	Full Access (Ingress | Egress)
6	Project Driveway 7	Full Access (Ingress | Egress)

LSA

LEGEND

- Study Area Intersection
- Intersection Not Considered for Access Analysis
- Existing Driveway
- Proposed Driveway

N

0 100 200
FEET

FIGURE 3

Damien High School Master Plan Update
Site Access Analysis

Proposed Master Plan - Damien High School

SOURCE: ESRI Streetmap, 2013; Kalban Architects, 2018.

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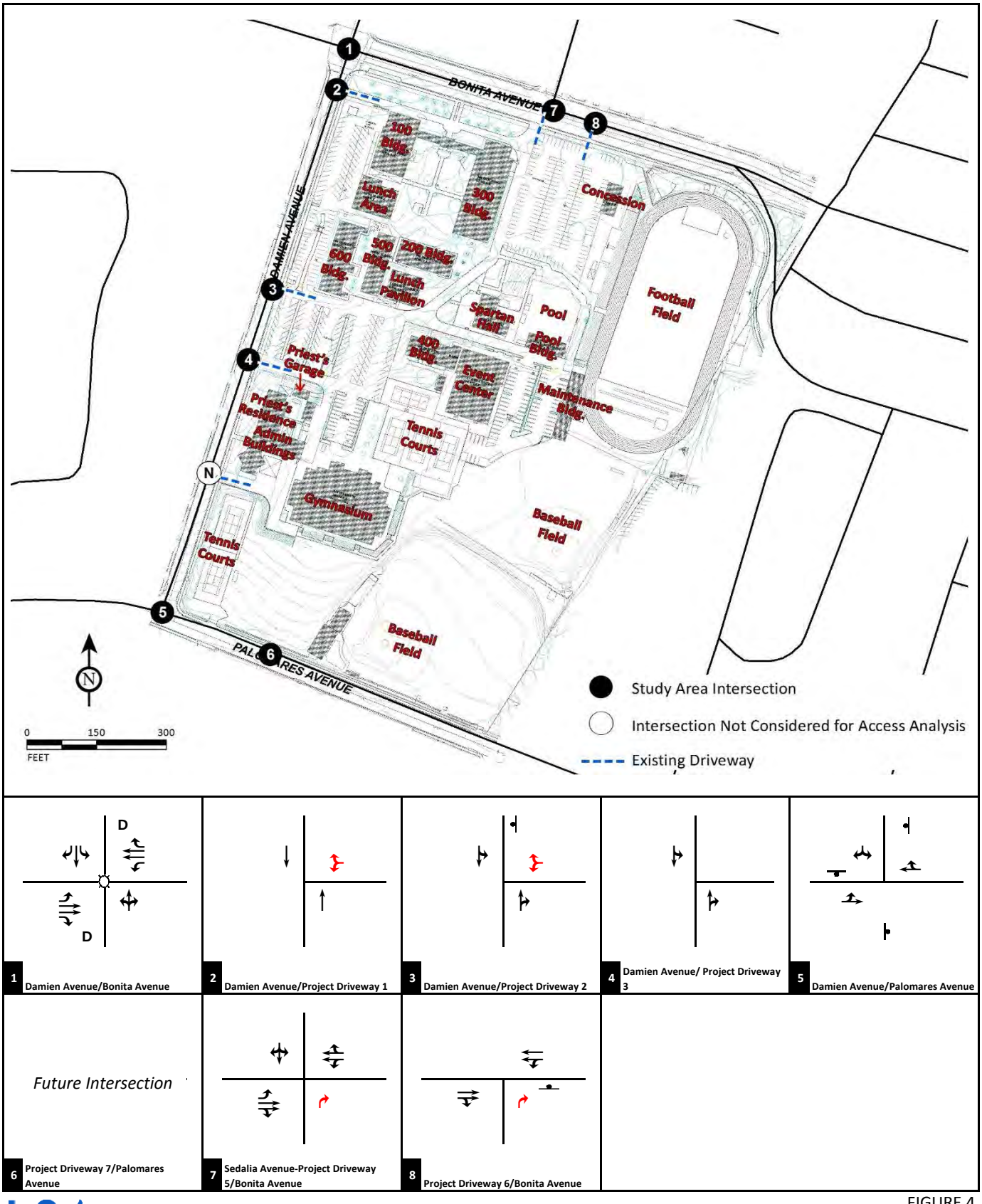

FIGURE 4

LSA

Legend

Signal

Stop Sign

Project Driveway

D De-Facto Right-Turn

Damien High School Master Plan Update

Traffic Assesment/ Site Impact Analysis

Existing (2018) Intersection Geometrics and Traffic Control

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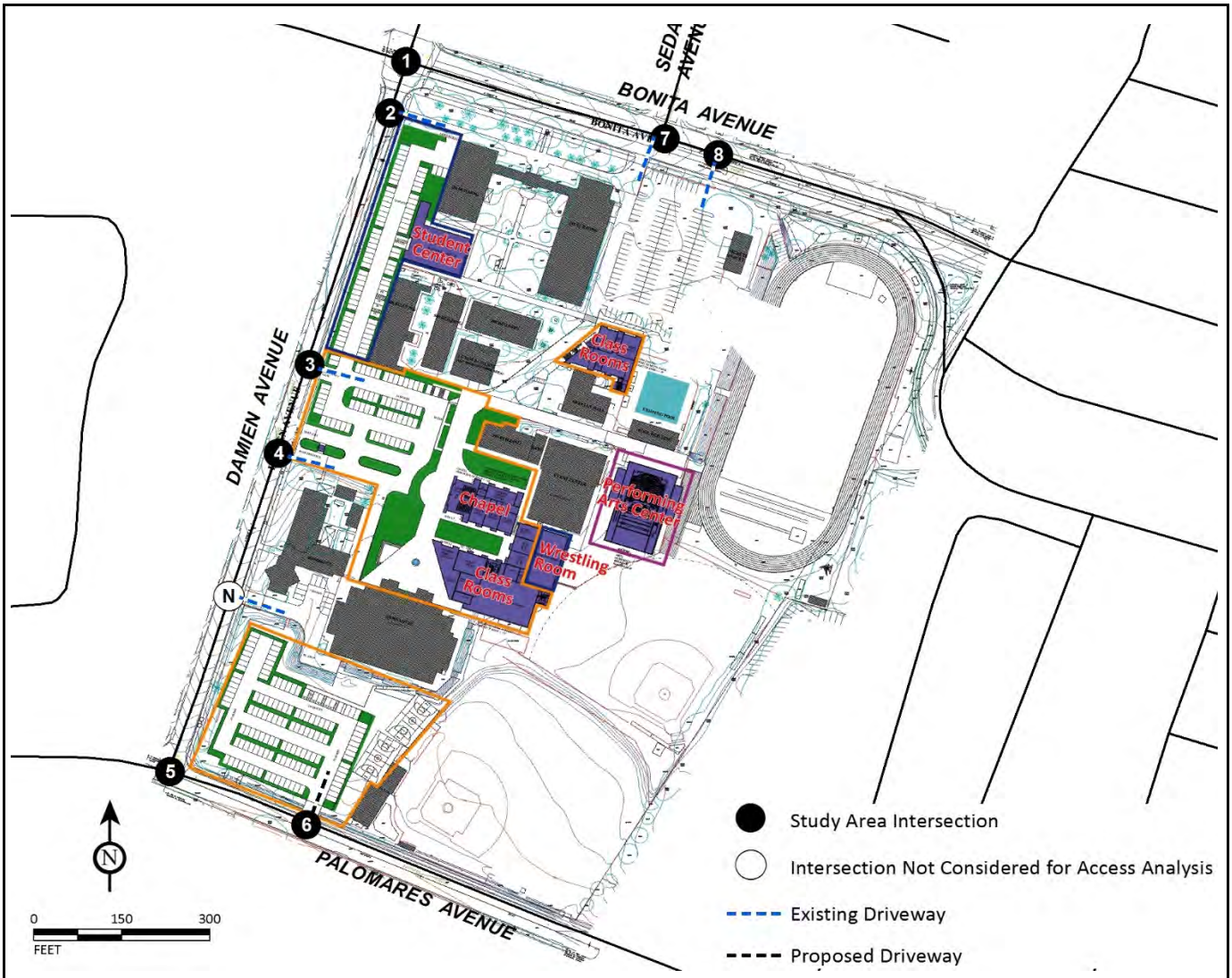

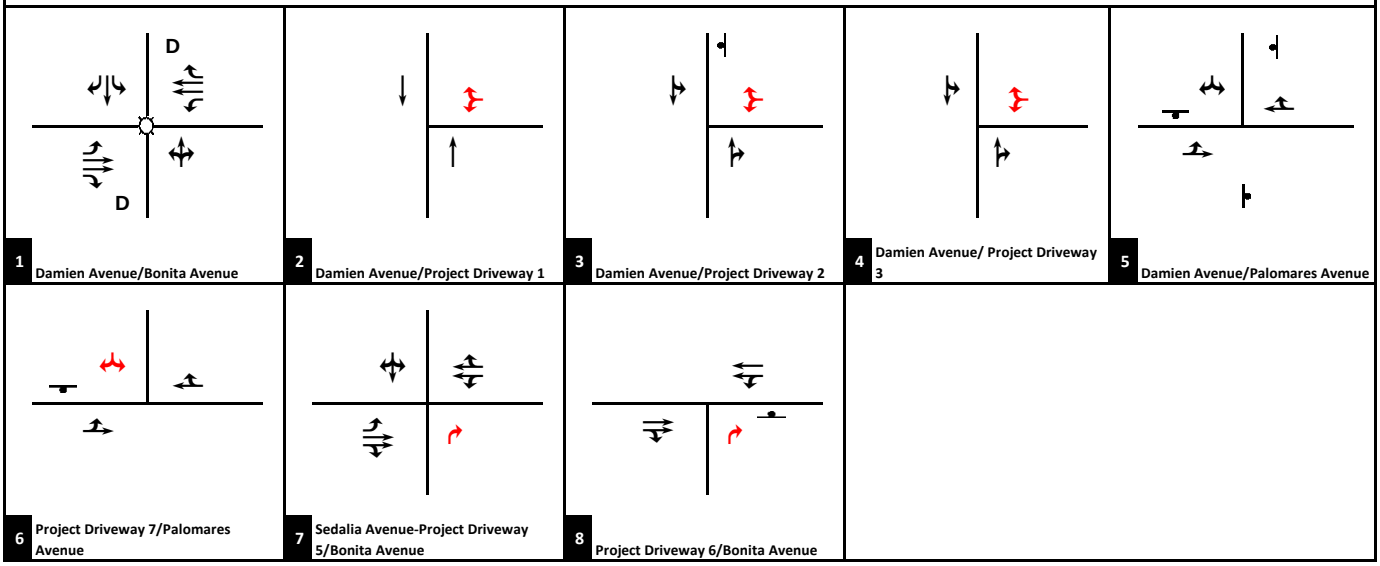

LSA

FIGURE 5

Legend

Signal

Stop Sign

Project Driveway

D De-Facto Right-Turn

Damien High School Master Plan Update

Traffic Assesment/ Site Impact Analysis

With Project Intersection Geometrics and Traffic Control

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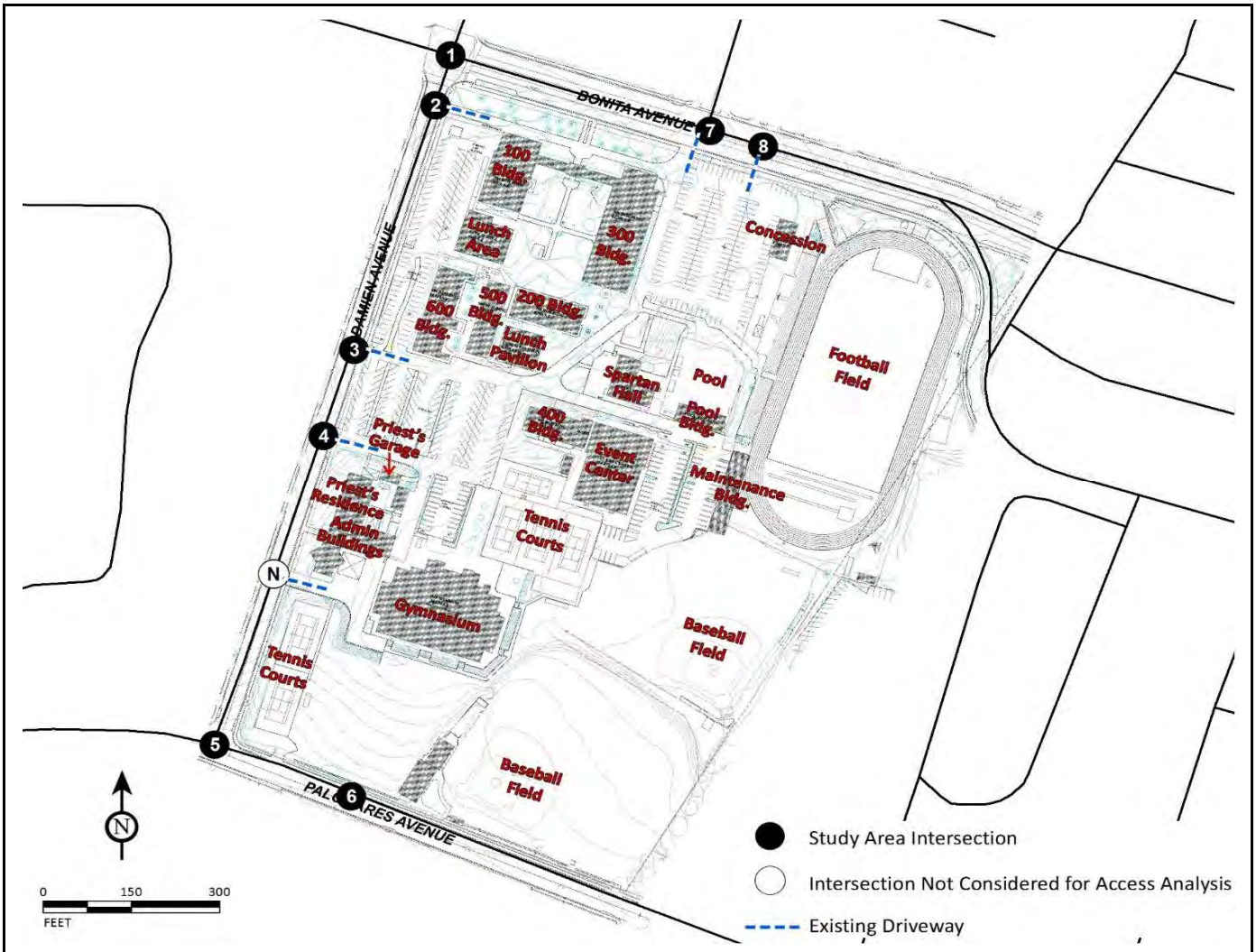

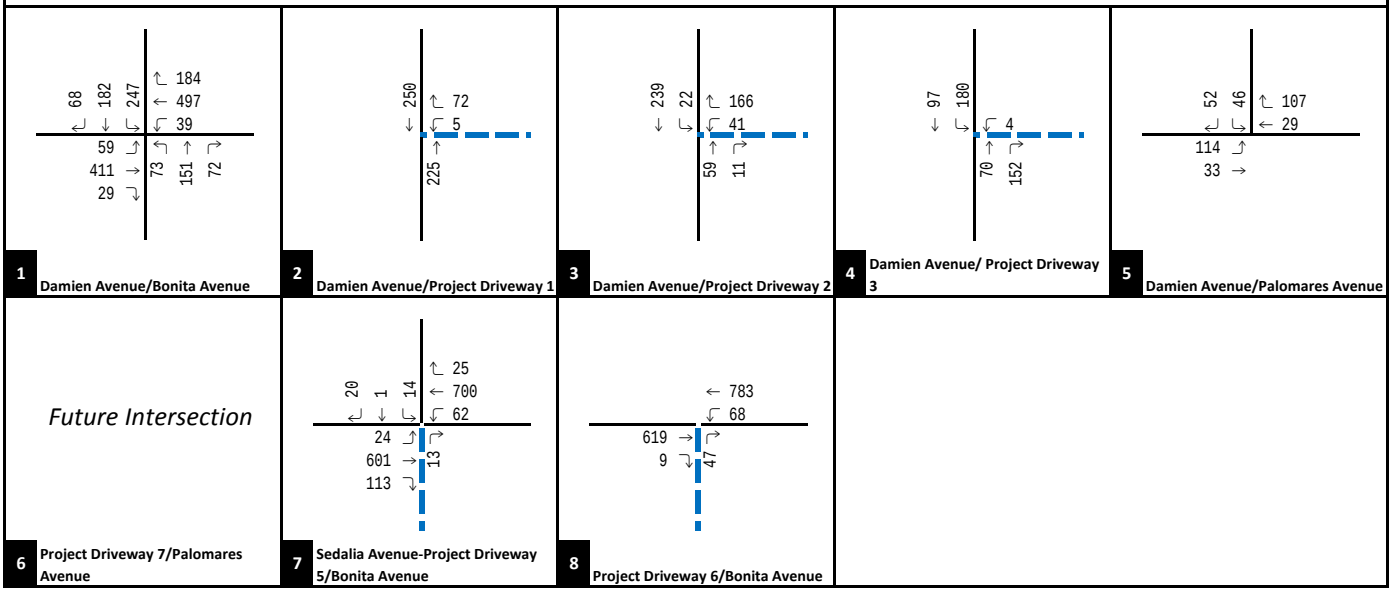

FIGURE 6

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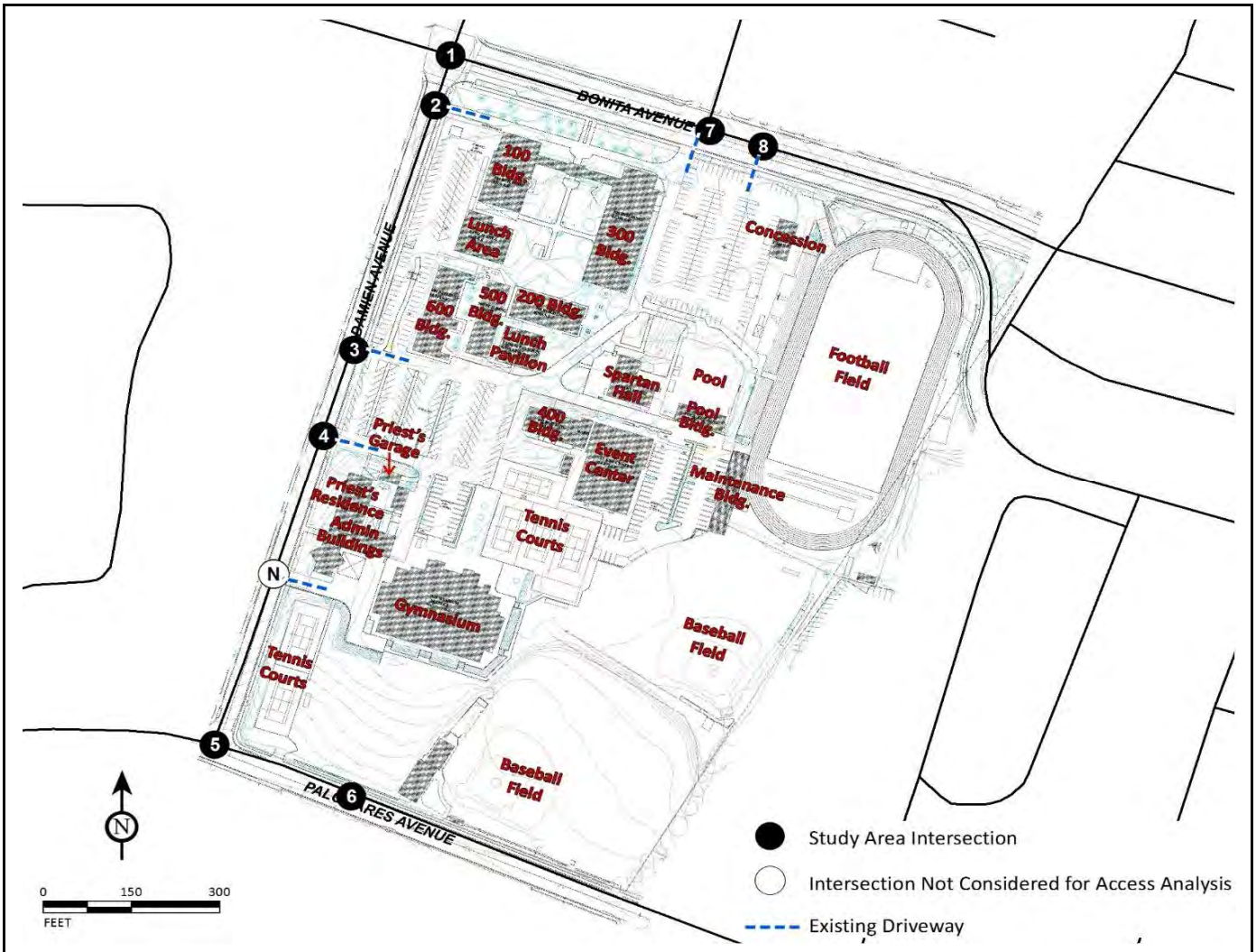
AM Peak Hour Volumes

Damien High School Master Plan Update

Traffic Assessment/Site Access Analysis

Existing (2018) Peak Hour Traffic Volumes



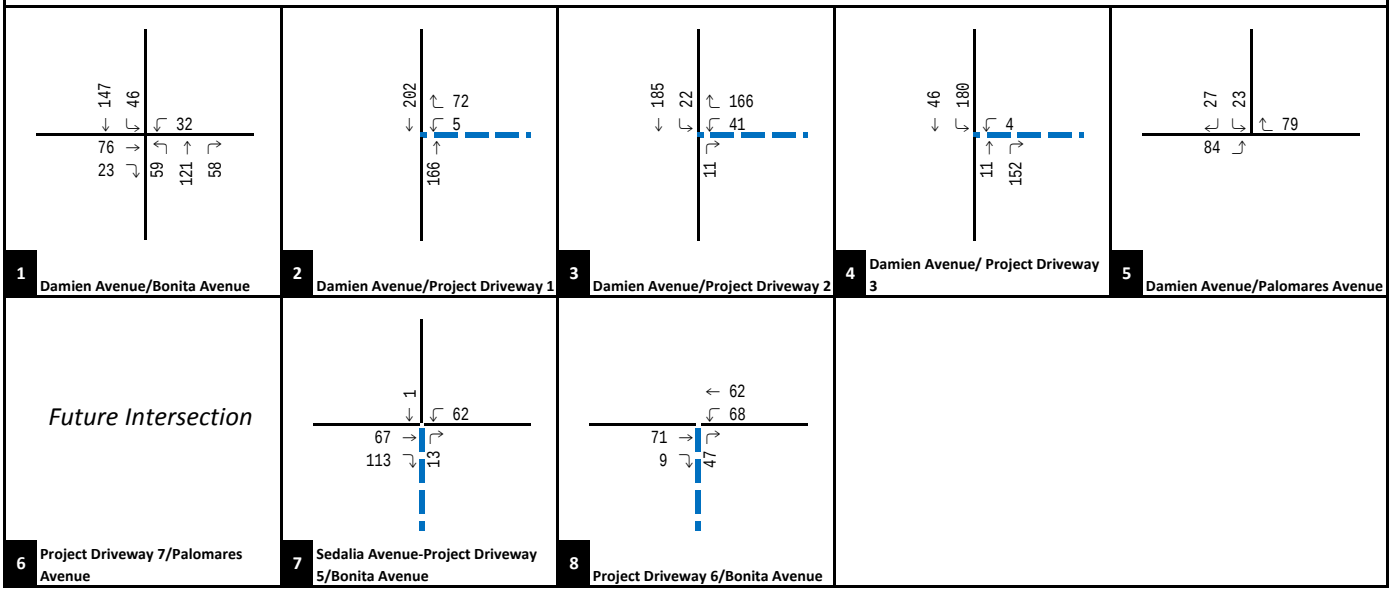


FIGURE 7

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AM Peak Hour Volumes

Damien High School Master Plan Update

Traffic Assessment/Site Access Analysis

Existing (2018) School Trip Assignment

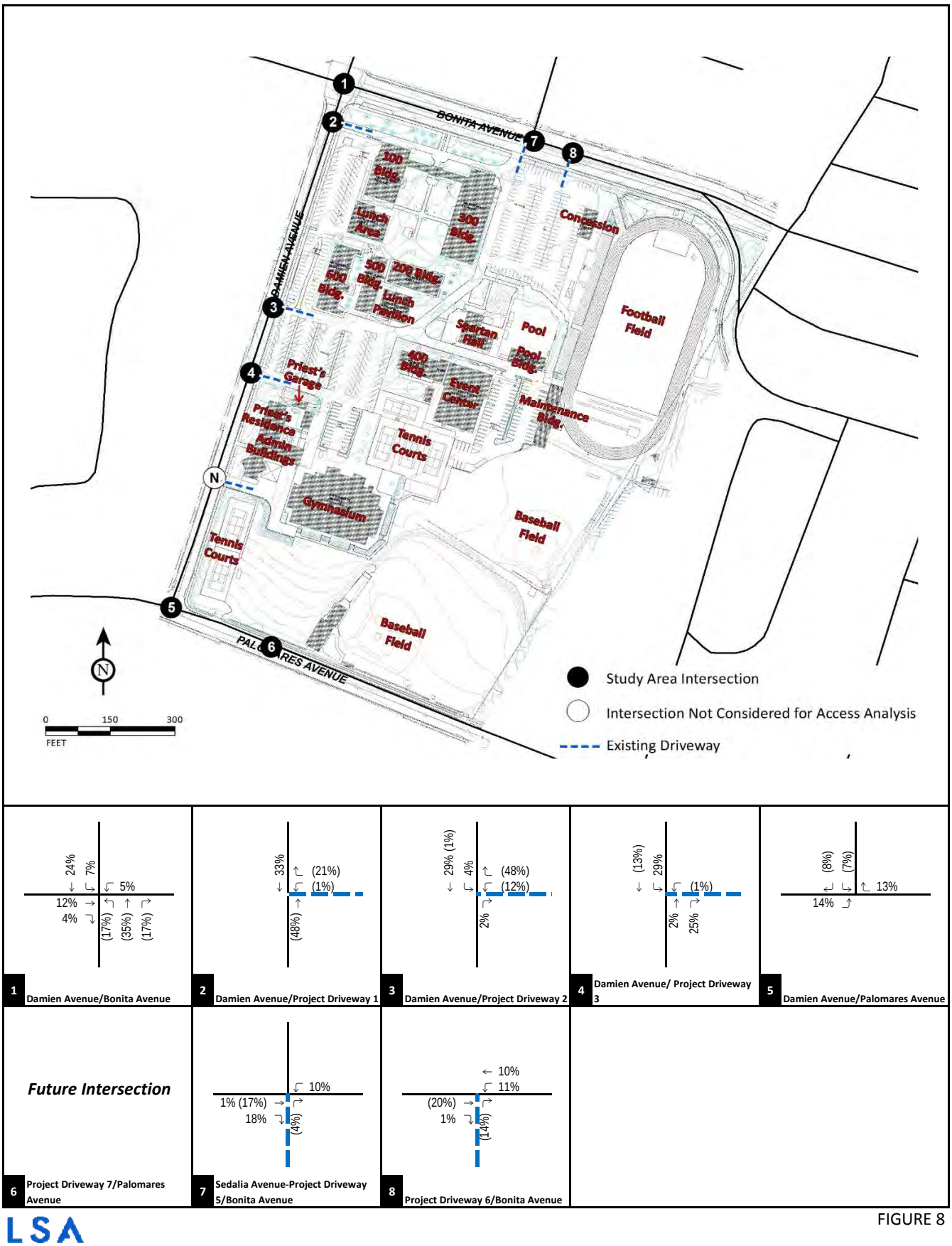

FIGURE 8

LSA

XX% (YY%)
Inbound (Outbound) Trip Distribution

Damien High School Master Plan Update
Traffic Assessment/Site Access Analysis

Existing School Trip Distribution

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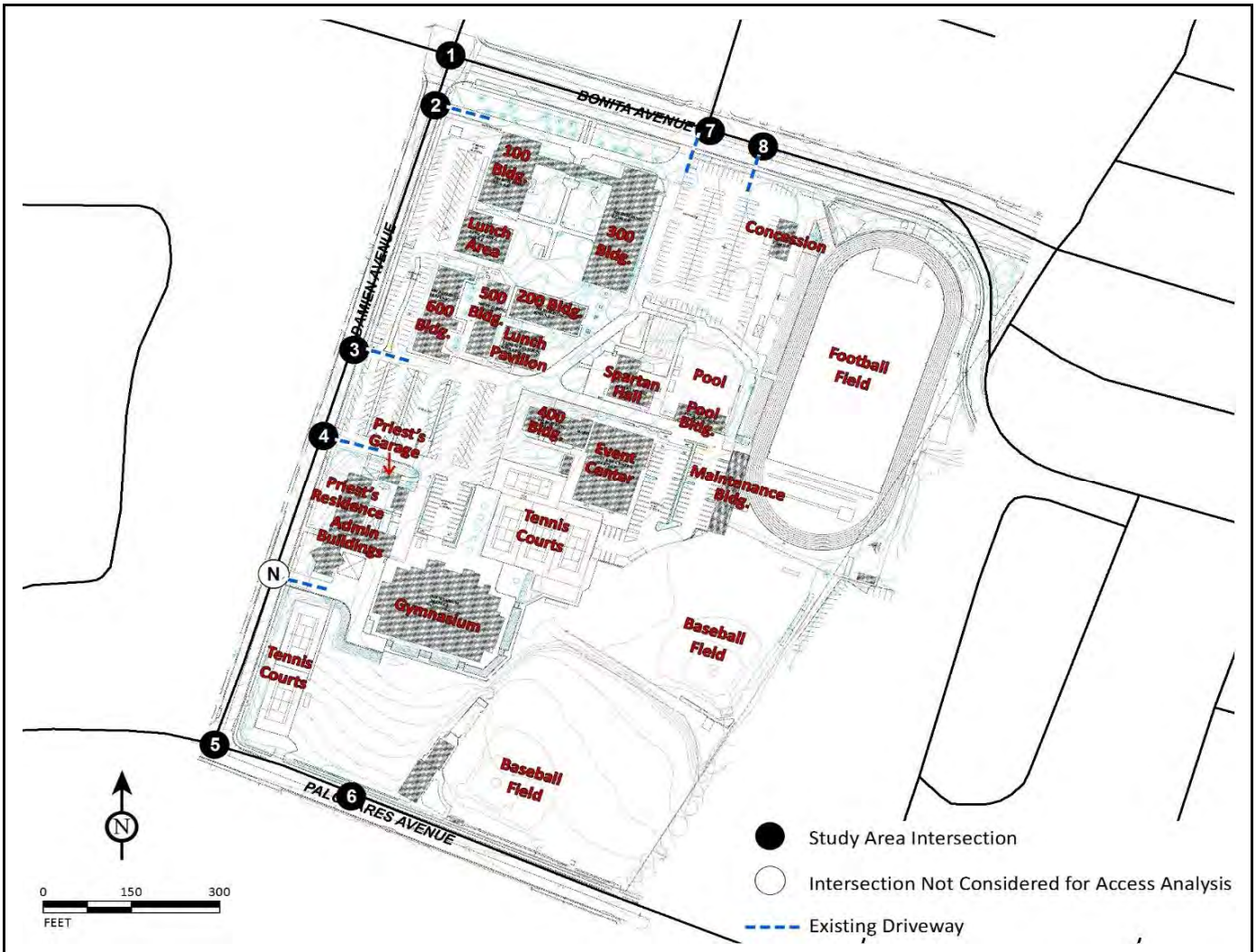

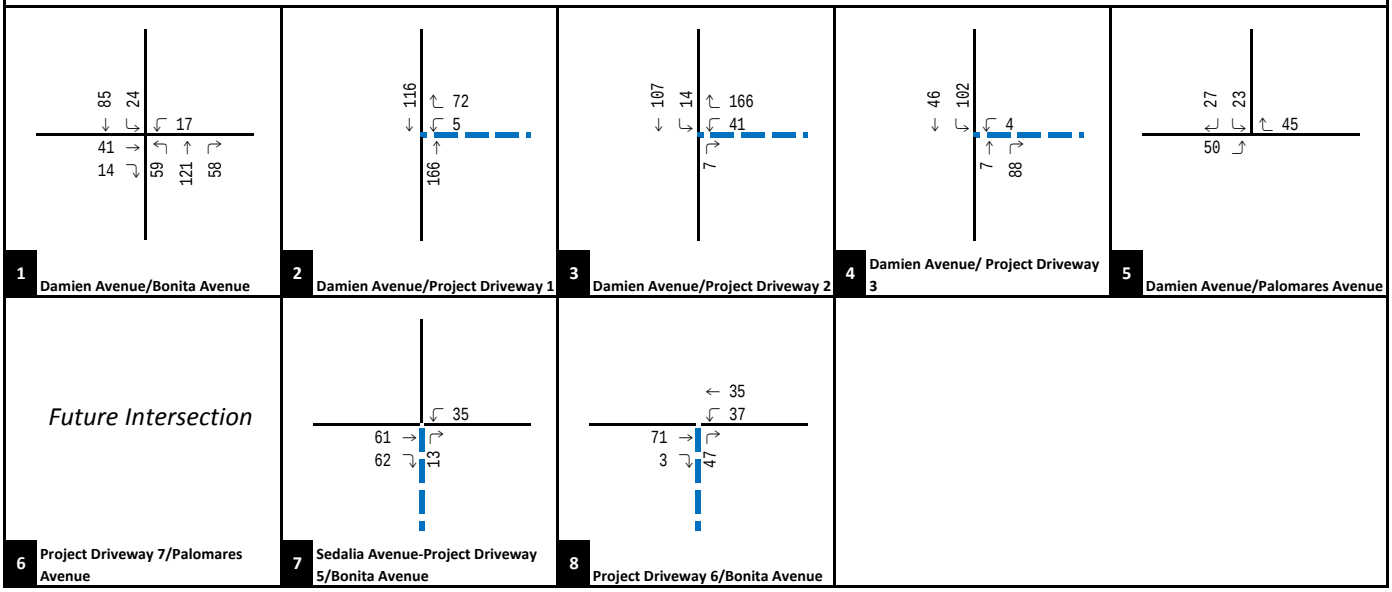

FIGURE 9

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AM Peak Hour Volumes

Damien High School Master Plan Update

Traffic Assessment/Site Access Analysis

Existing Drop-Off Trips

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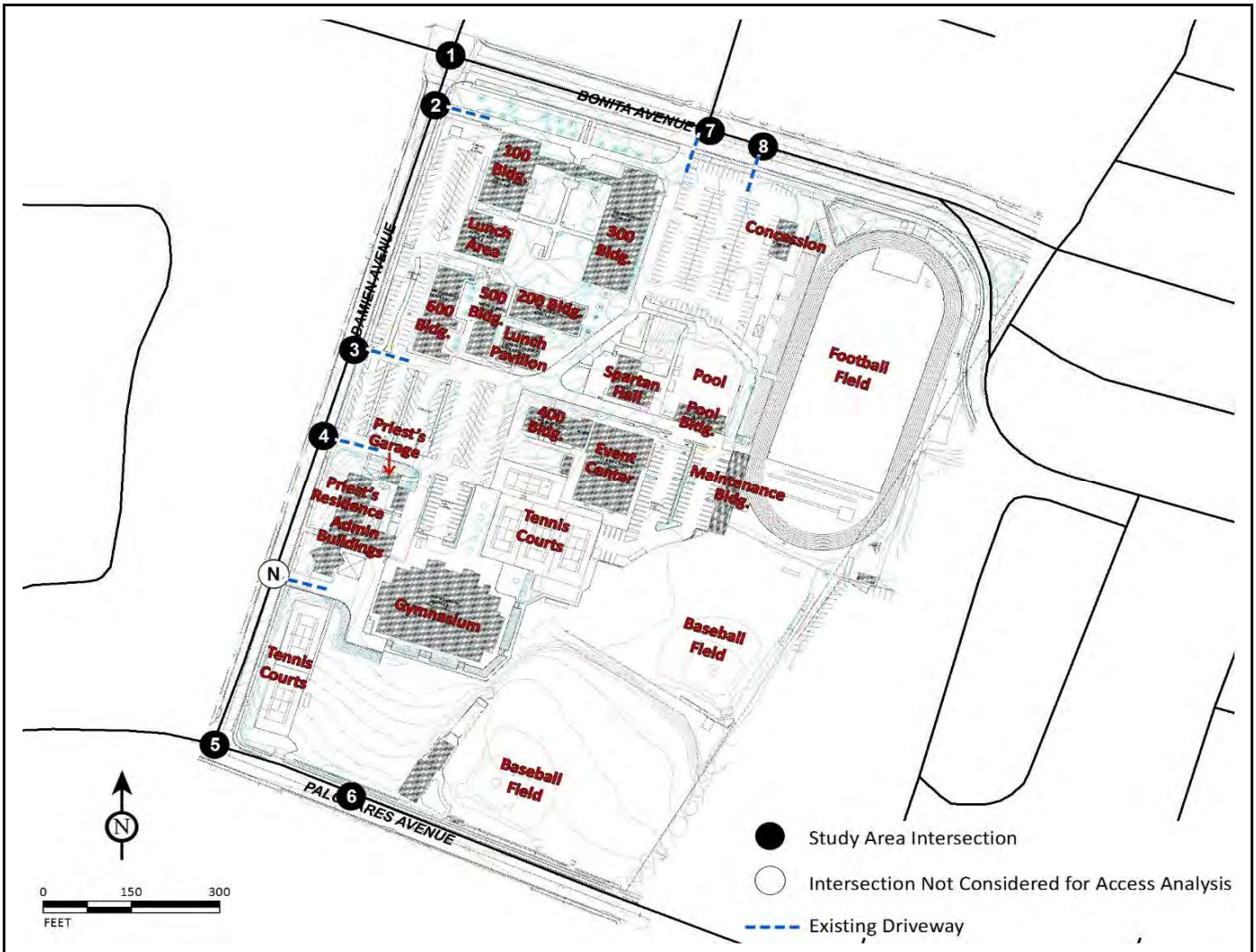
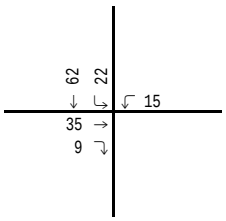
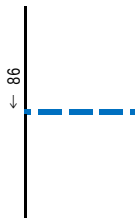
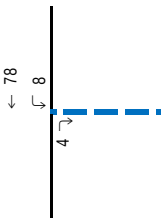




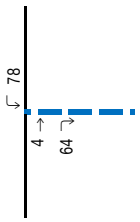
1 Damien Avenue/Bonita Avenue



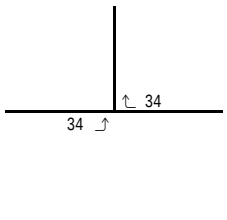
2 Damien Avenue/Project Driveway 1



3 Damien Avenue/Project Driveway 2



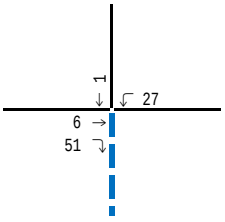
4 Damien Avenue/ Project Driveway 3



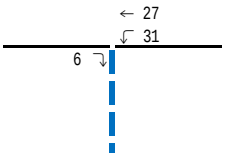
5 Damien Avenue/Palomares Avenue

Future Intersection

6 Project Driveway 7/Palomares Avenue



7 Sedalia Avenue-Project Driveway 5/Bonita Avenue



8 Project Driveway 6/Bonita Avenue

FIGURE 10

LSA

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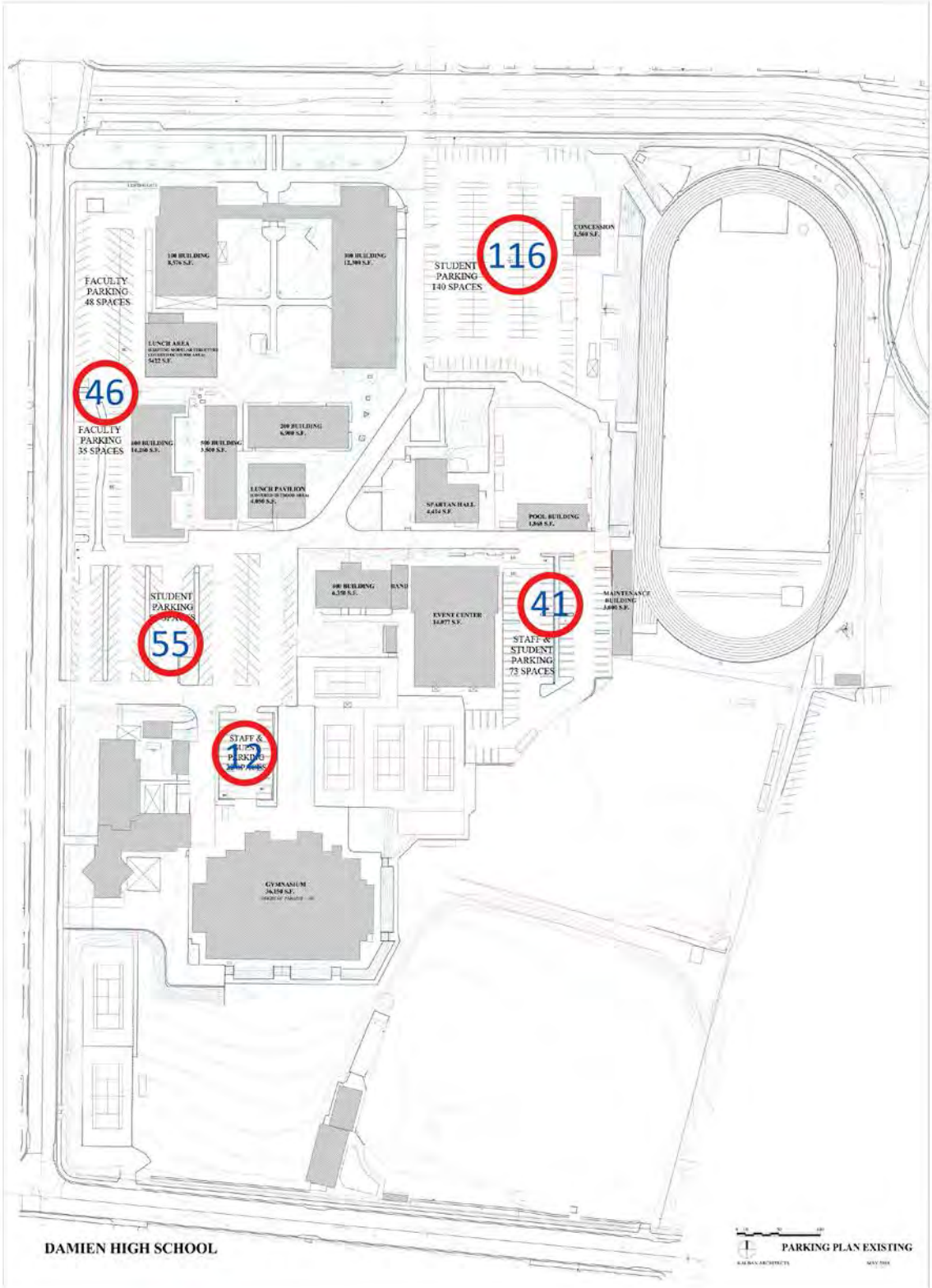
AM Peak Hour Volumes

Damien High School Master Plan Update

Traffic Assessment/Site Access Analysis

Existing Parking Trips



LSA

FIGURE 11

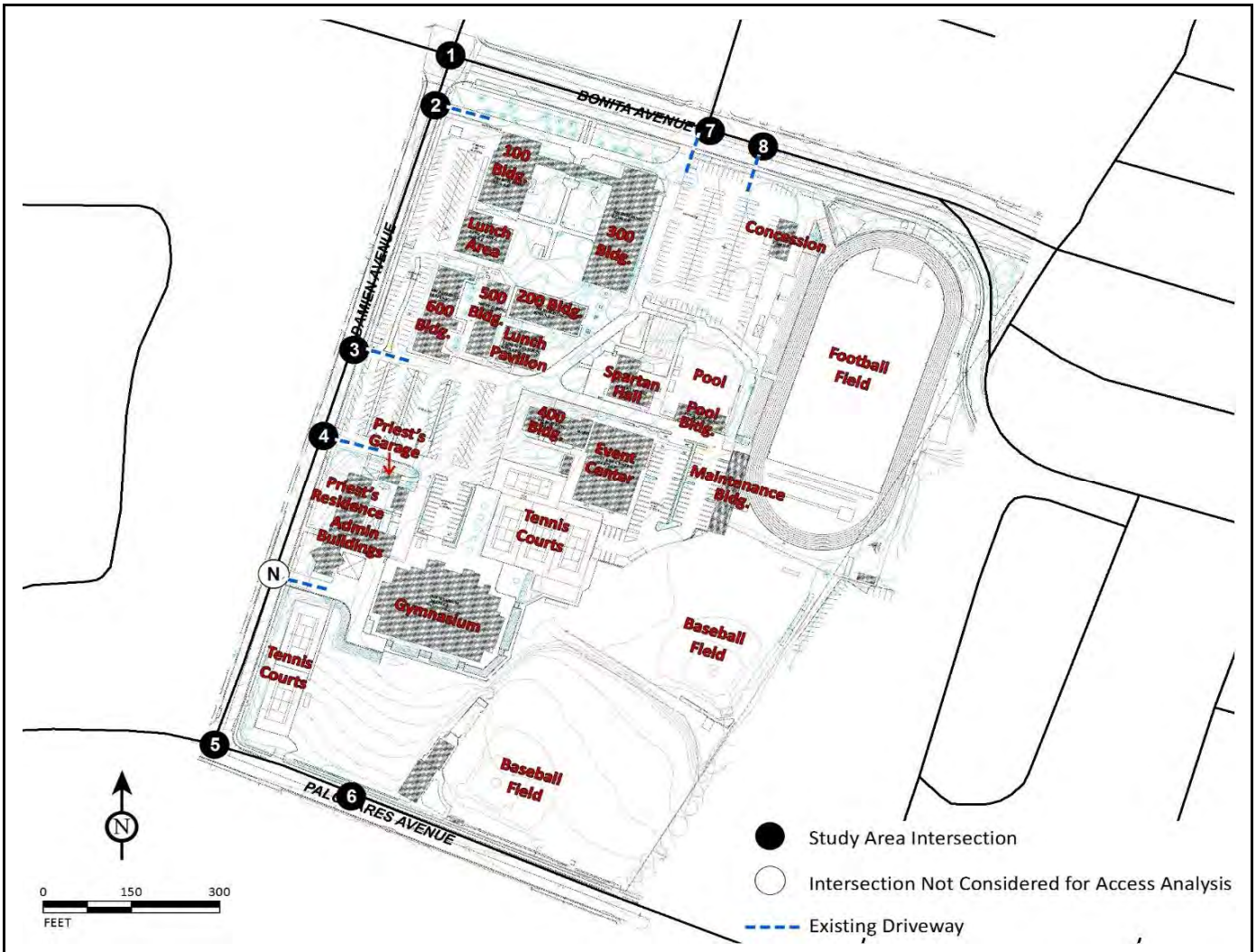
Parking Lot Trip Assignment

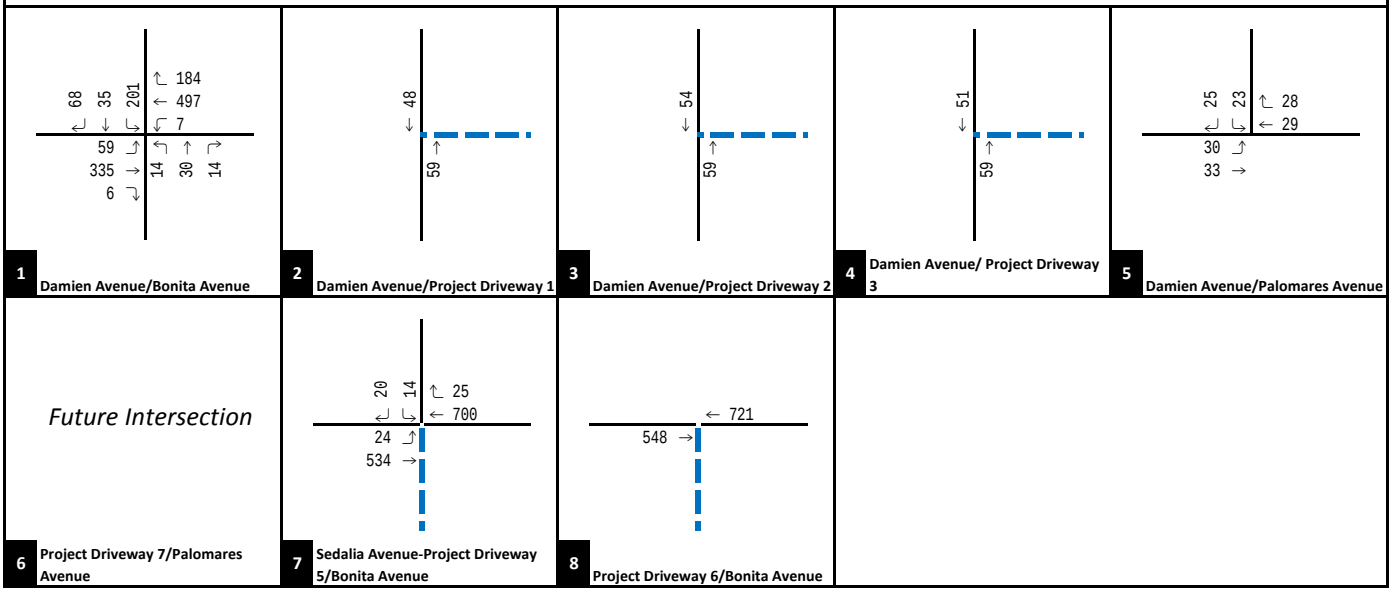
N

Damien High School Master Plan Update
Traffic Assessment/Site Access Analysis

Existing Parking Lot Trip Assignment

SOURCE: Kalaban Architects, 2018
I:\LVR1801\Reports\Traffic\fig12_parking.ai (08/13/2018)





1 Damien Avenue/Bonita Avenue
2 Damien Avenue/Project Driveway 1
3 Damien Avenue/Project Driveway 2
4 Damien Avenue/ Project Driveway 3
5 Damien Avenue/Palomares Avenue
6 Project Driveway 7/Palomares Avenue
7 Sedalia Avenue-Project Driveway 5/Bonita Avenue
8 Project Driveway 6/Bonita Avenue

LSA

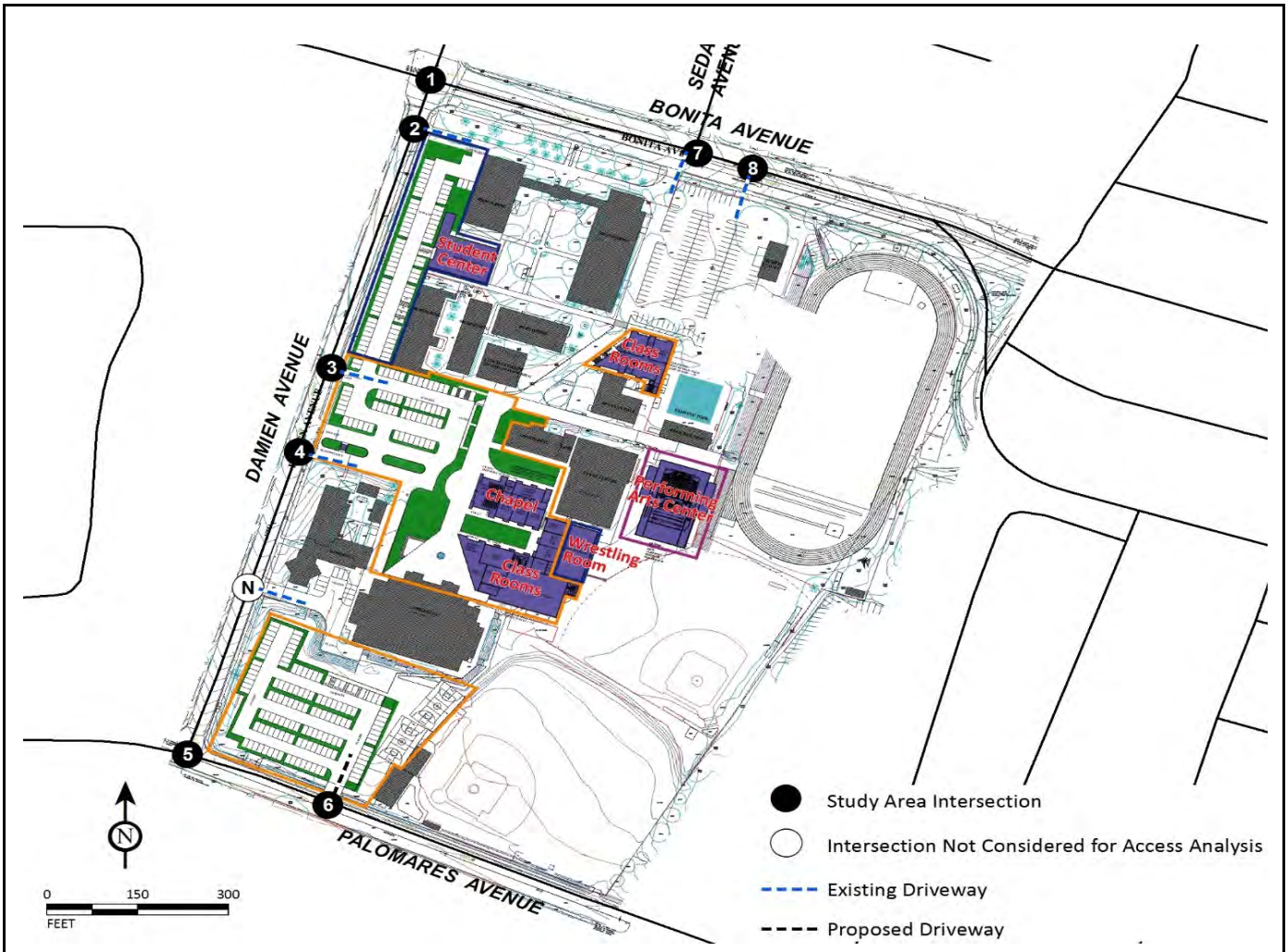
FIGURE 12

XXX

AM Peak Hour Volumes

Damien High School Master Plan Update
Traffic Assessment/Site Access Analysis
Existing Background Traffic Volumes

R:\LVR1801_Damien HS MND\Tech Studies\Traffic\z30-Vol- Exist - Background.xlsx\Figure (8/16/2018)



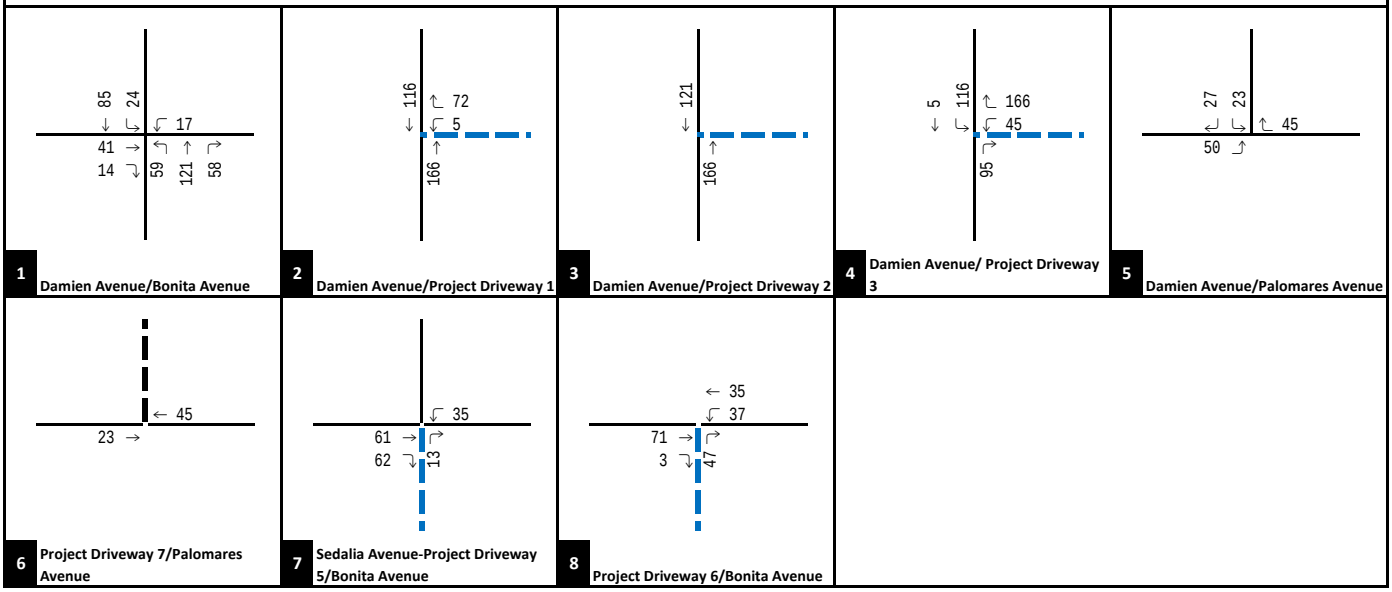
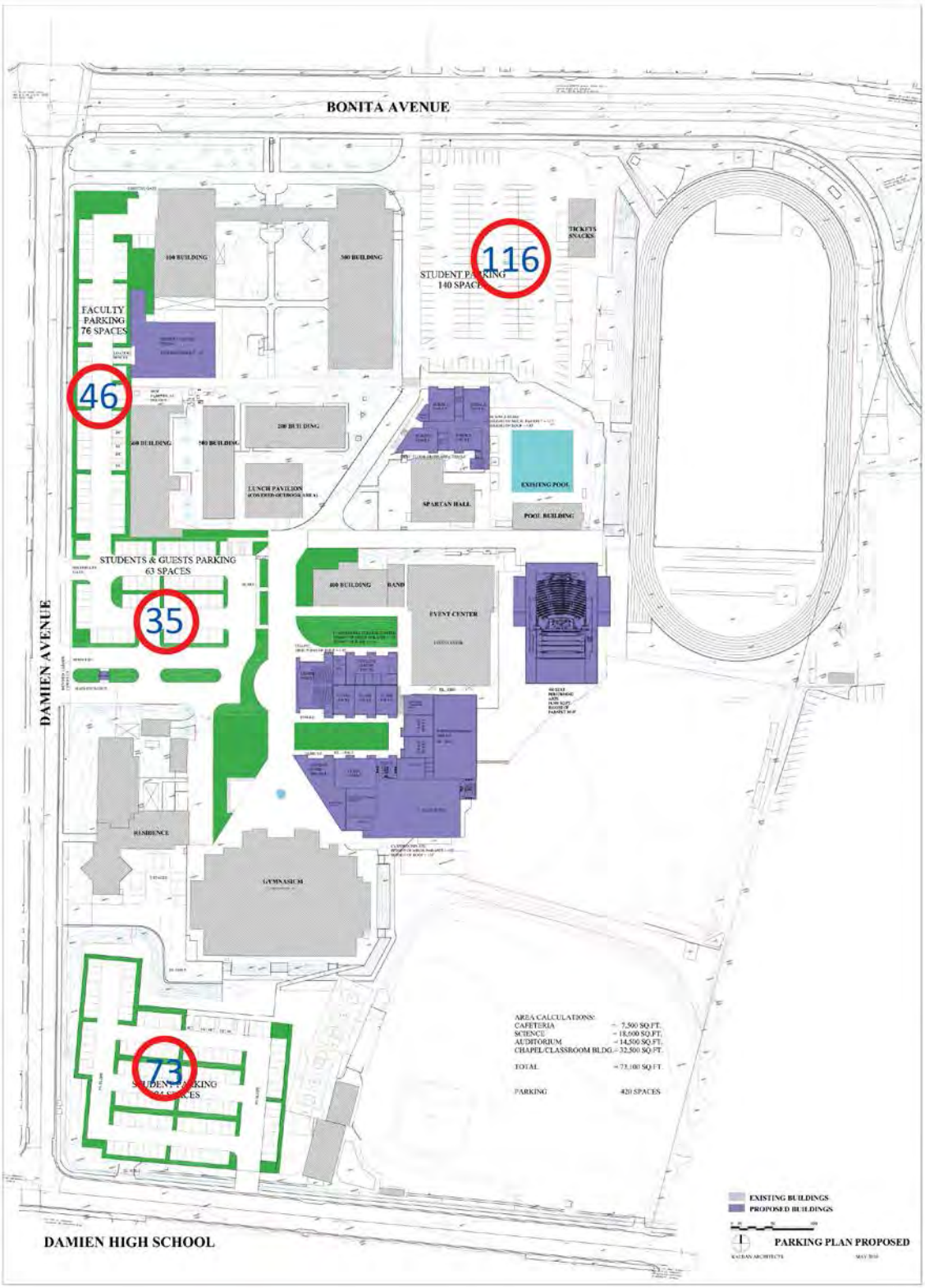


FIGURE 13

XXX
AM Peak Hour Volumes

Damien High School Master Plan Update
Traffic Assessment/Site Access Analysis
Project Drop-Off Trips



LSA

FIGURE 14

Parking Lot Trip Assignment

N

Damien High School Master Plan Update
Traffic Assessment/Site Access Analysis

Opening Year Parking Lot Trip Assignment

SOURCE: Kalaban Architects, 2018
I:\LVR1801\Reports\Traffic\fig14_parkingOY.ai (08/13/2018)

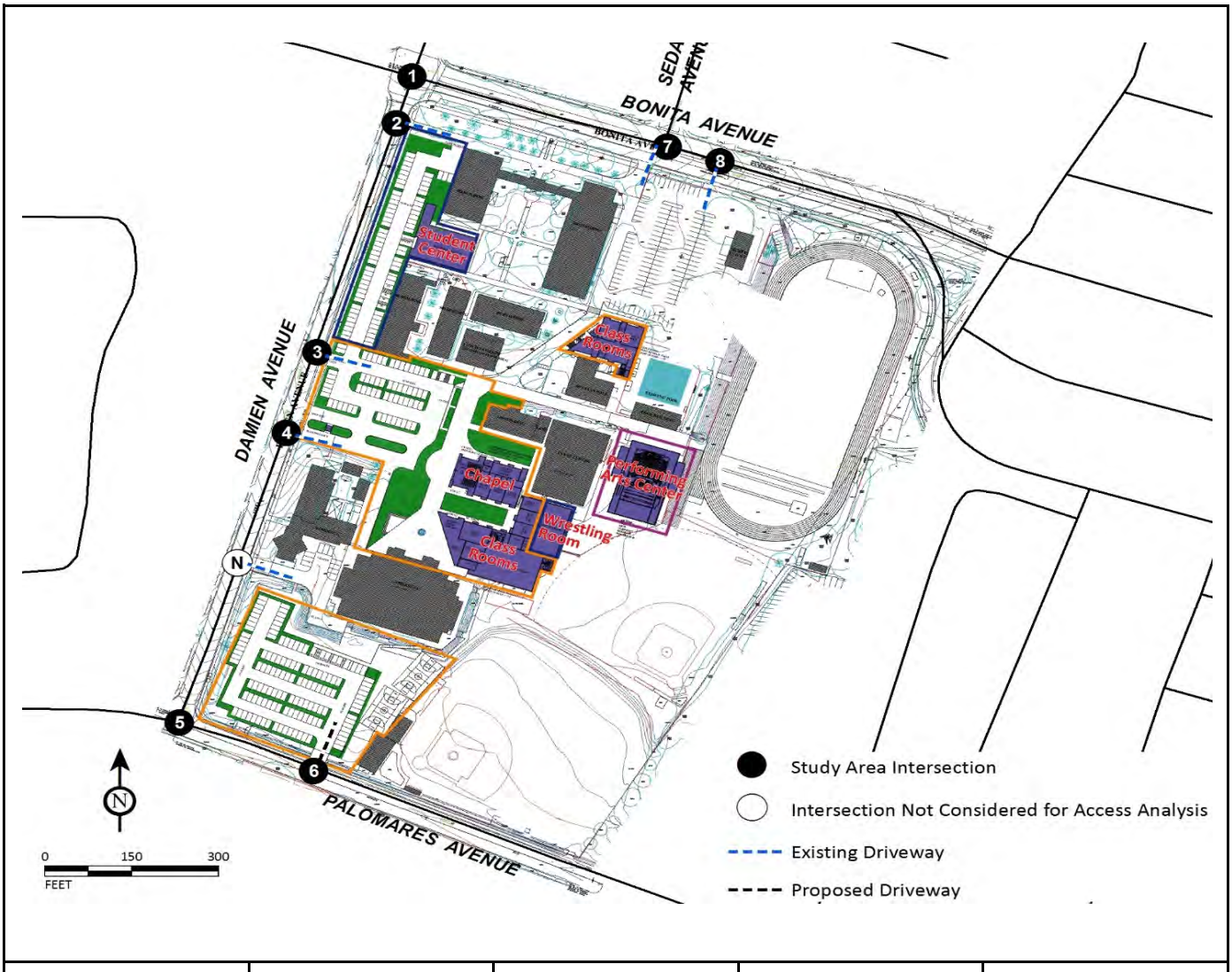


FIGURE 15

XXX
AM Peak Hour Volumes

Damien High School Master Plan Update
Traffic Assessment/Site Access Analysis
Project Parking Trips

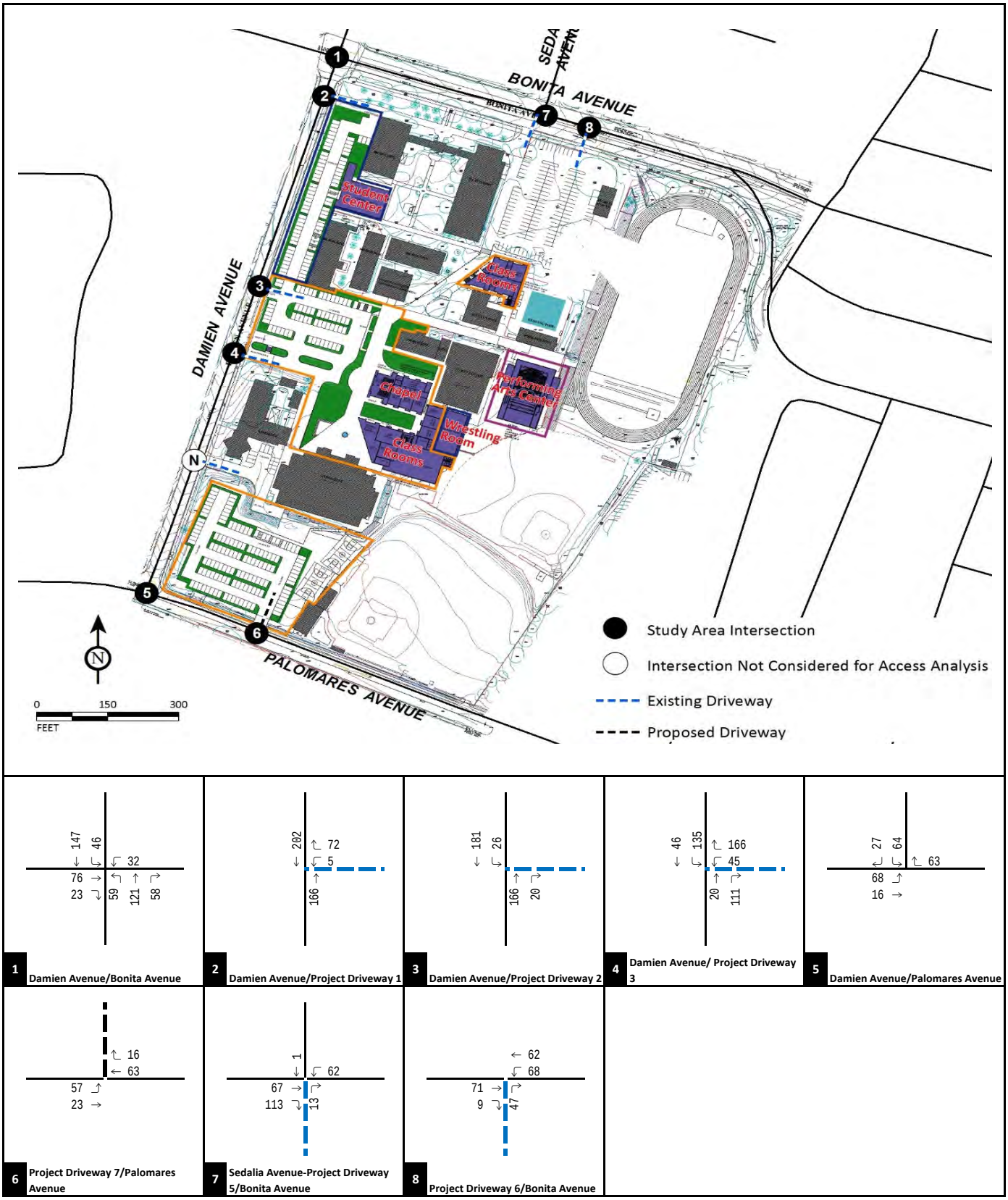
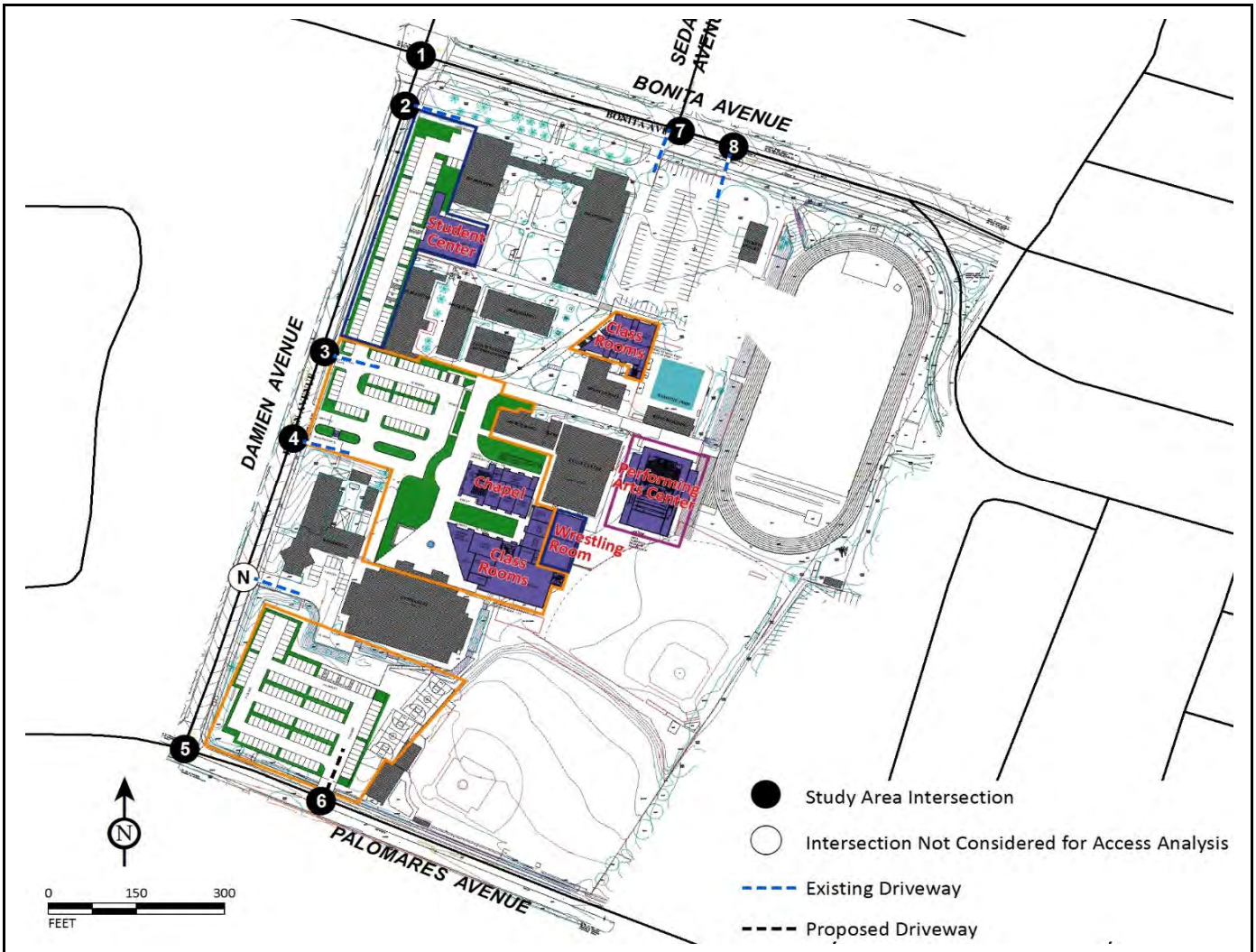
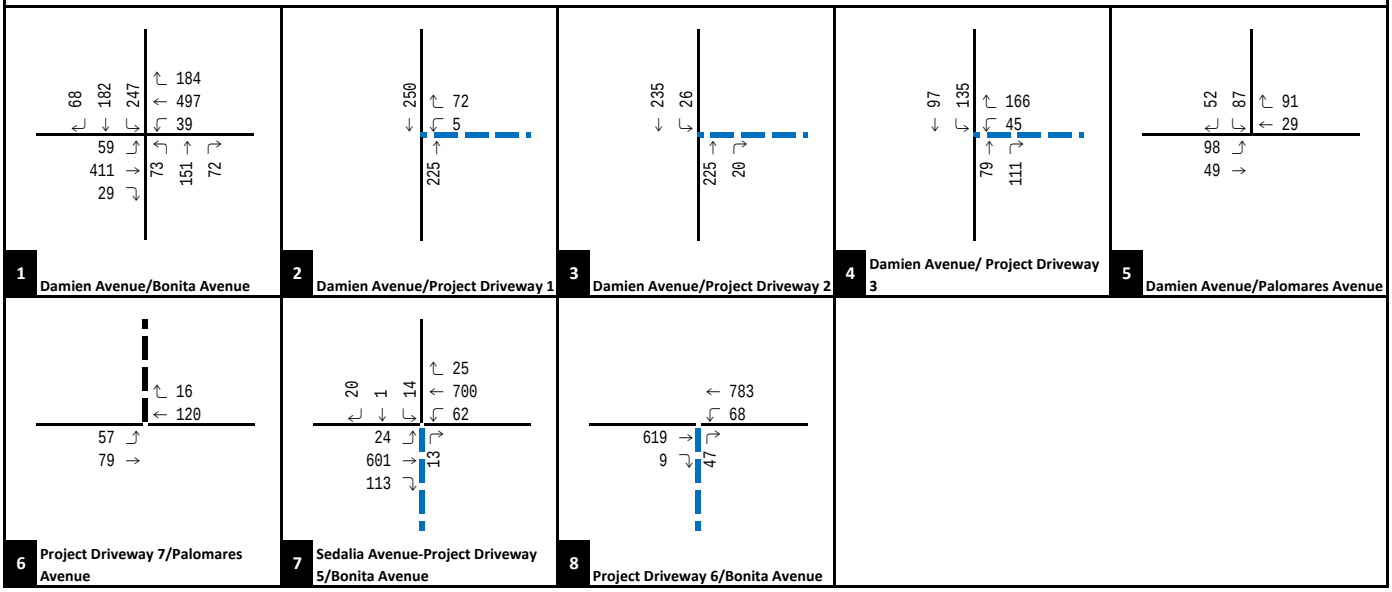


FIGURE 16

XXX
AM Peak Hour Volumes

Damien High School Master Plan Update
Traffic Assessment/Site Access Analysis
Project School Trips Assignment





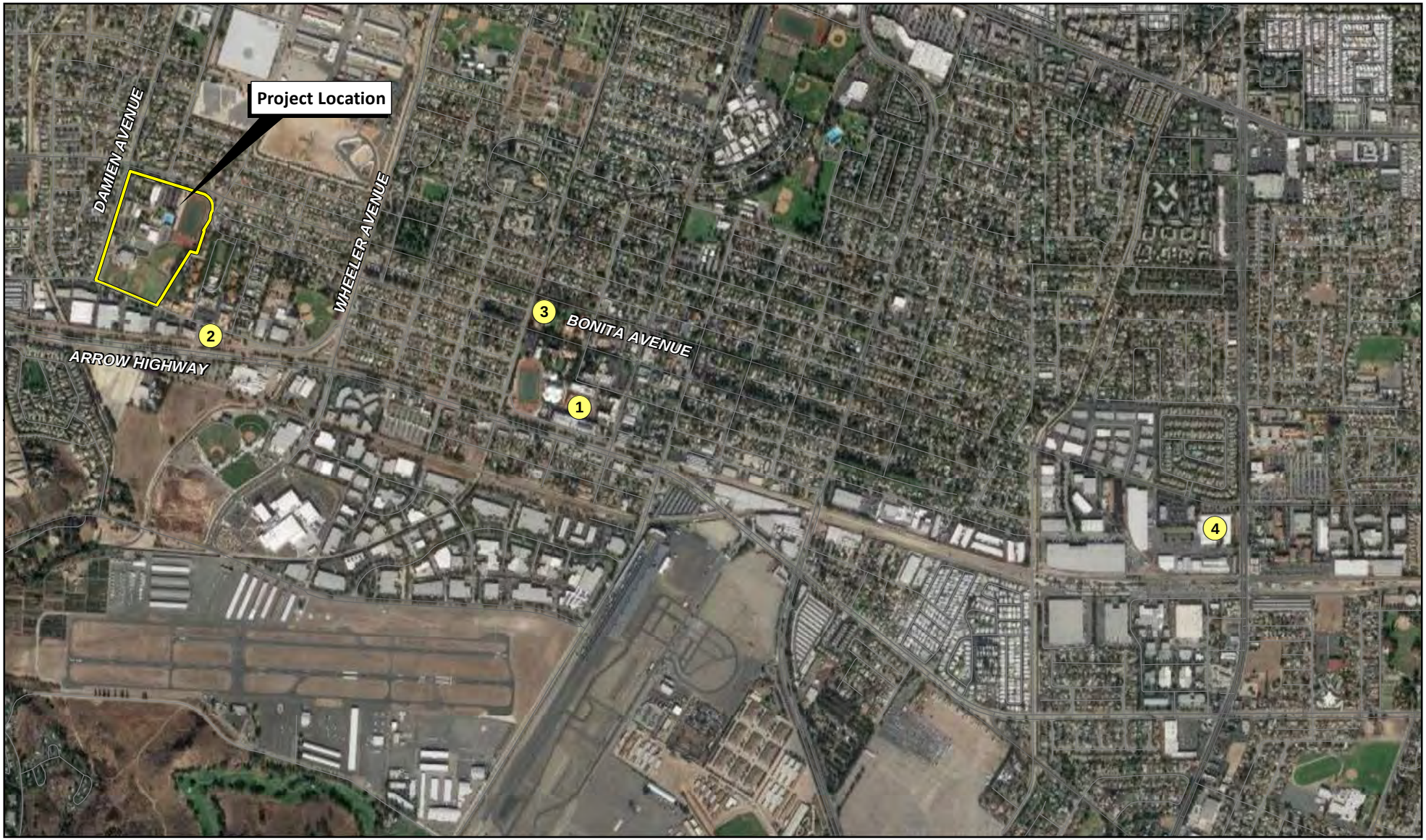
1 Damien Avenue/Bonita Avenue
2 Damien Avenue/Project Driveway 1
3 Damien Avenue/Project Driveway 2
4 Damien Avenue/ Project Driveway 3
5 Damien Avenue/Palomares Avenue
6 Project Driveway 7/Palomares Avenue
7 Sedalia Avenue-Project Driveway 5/Bonita Avenue
8 Project Driveway 6/Bonita Avenue

LSA

FIGURE 17

XXX
AM Peak Hour Volumes

Damien High School Master Plan Update
Traffic Assessment/Site Access Analysis
Existing Plus Project Peak Hour Traffic Volumes



LSA

LEGEND

Project Location

Cumulative Project Location

FIGURE 18

0 750 1500

FEET

SOURCE: Google Earth, 2016; ESRI Streetmap, 2013.

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Damien High School Master Plan Update
Traffic Assesment/Site Access Analysis

Cumulative Projects Location

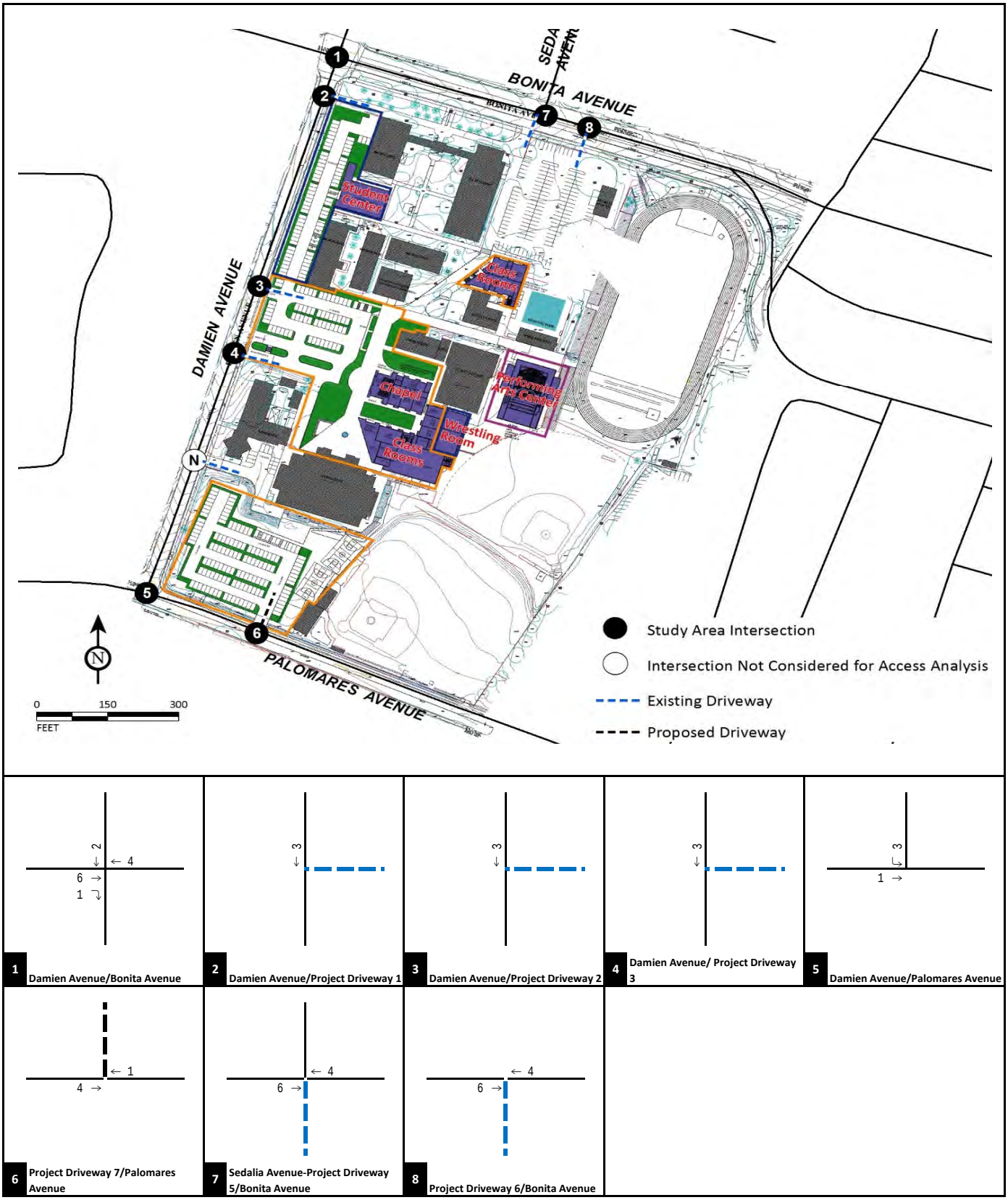
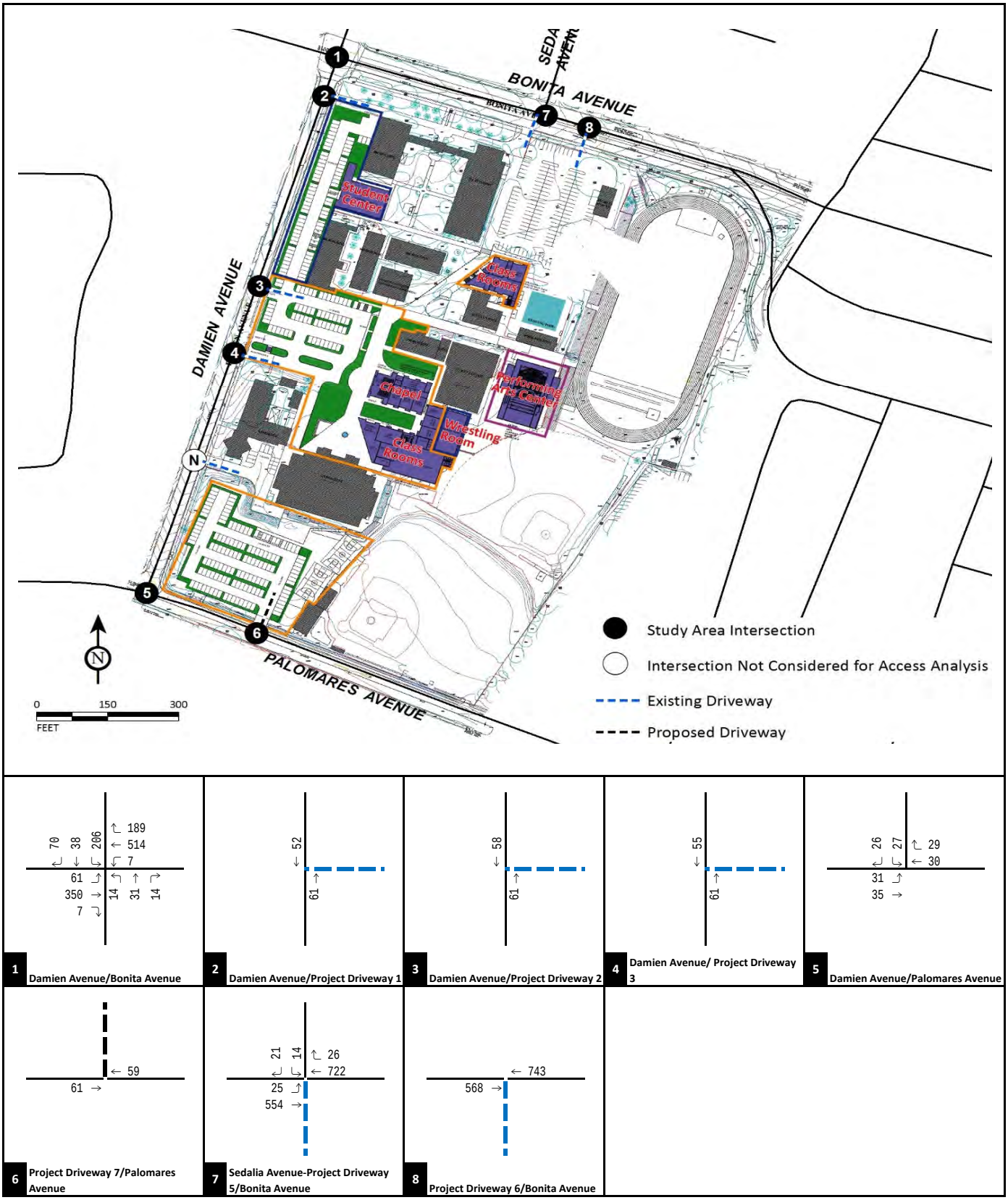


FIGURE 19

XXX
AM Peak Hour Volumes

Damien High School Master Plan Update
Traffic Assessment/Site Access Analysis
Cumulative Projects Trip Assignment



LSA

FIGURE 20

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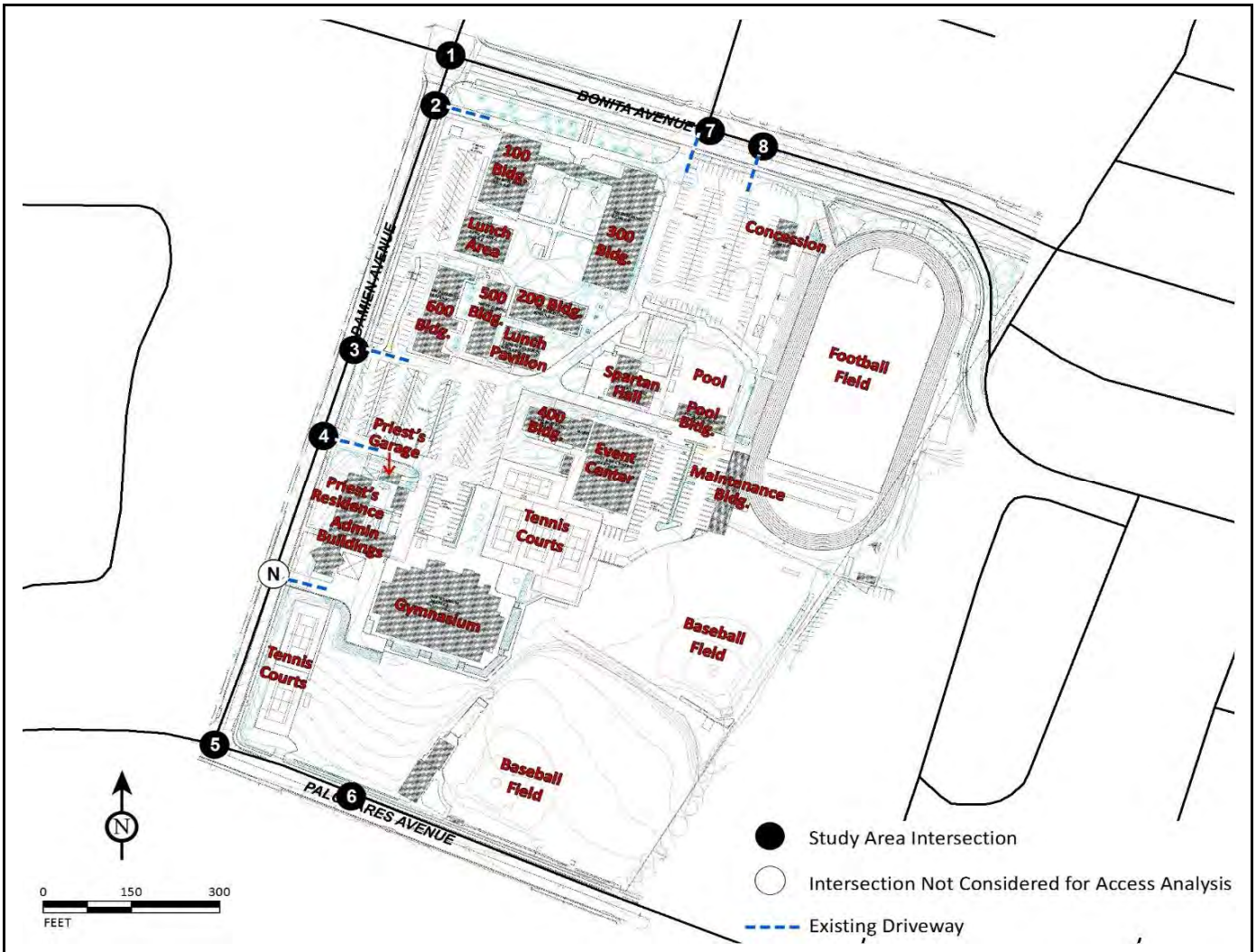
AM Peak Hour Volumes

Damien High School Master Plan Update

Traffic Assessment/Site Access Analysis

Opening Year(2029) Background Traffic Volumes



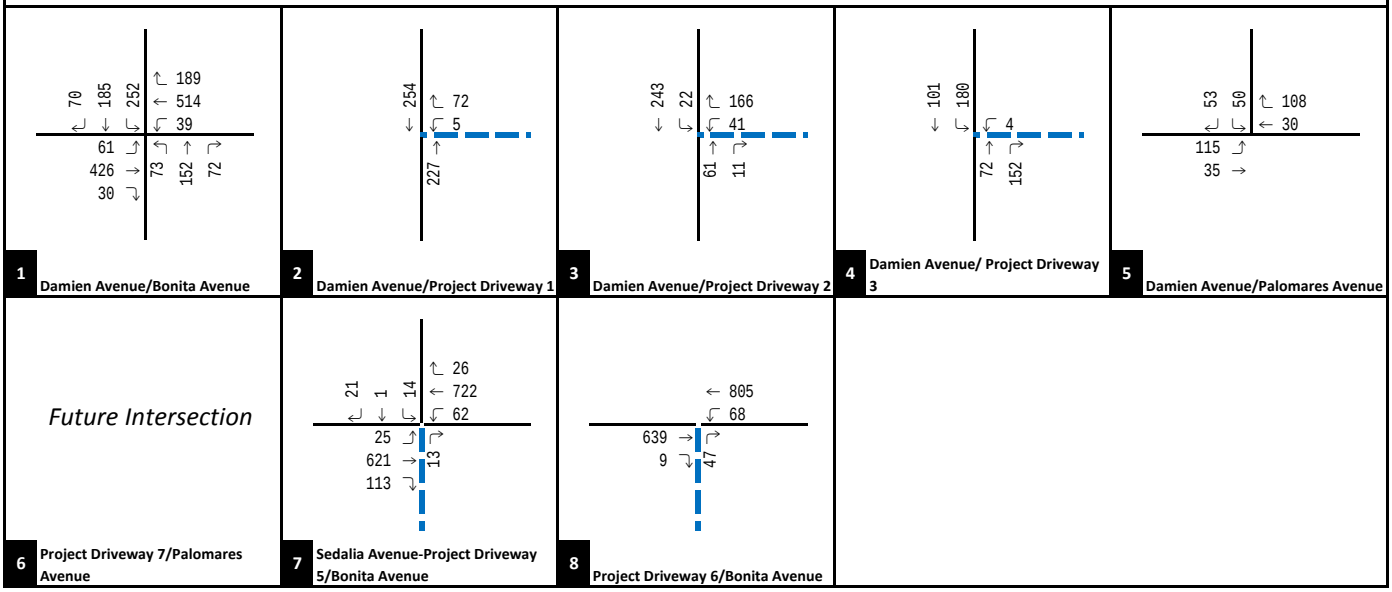


FIGURE 21

LSA

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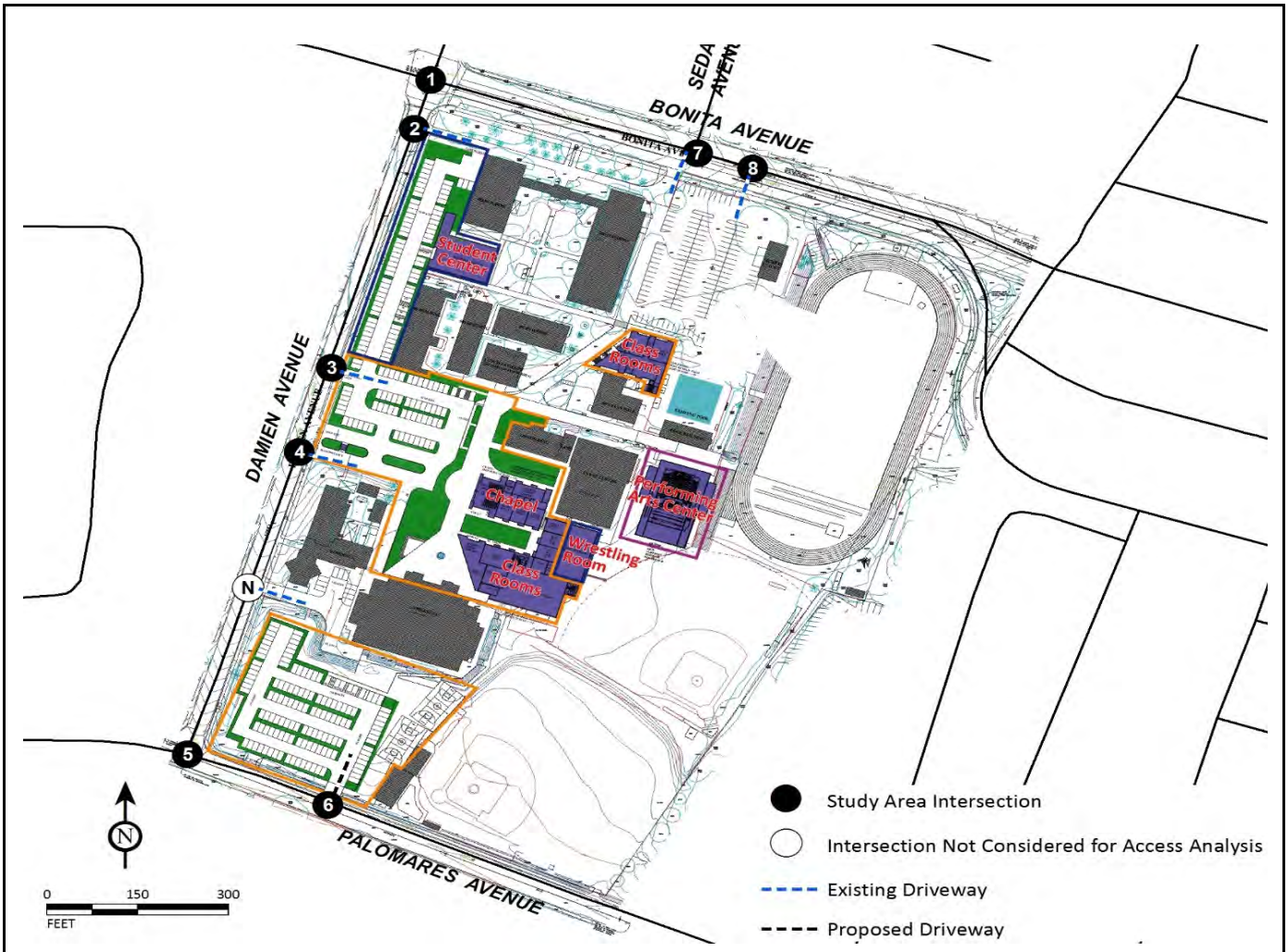
AM Peak Hour Volumes

Damien High School Master Plan Update

Traffic Assessment/Site Access Analysis

Opening Year without Project Peak Hour Traffic Volumes



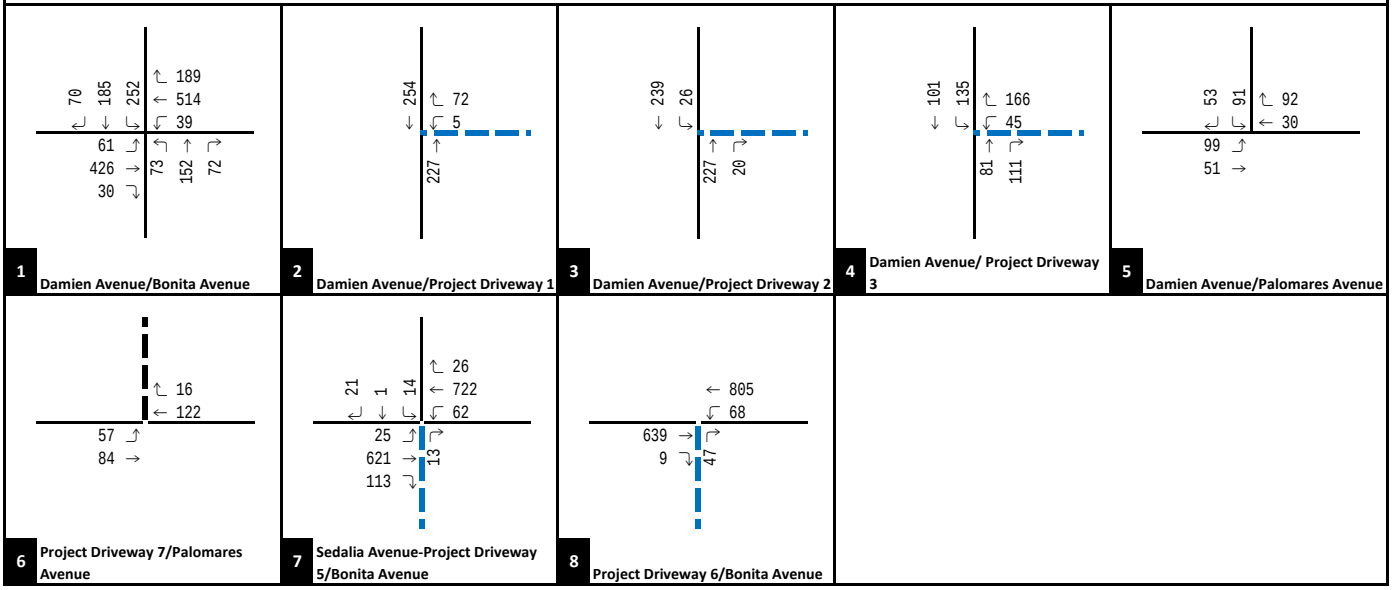


FIGURE 22

LSA

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AM Peak Hour Volumes

Damien High School Master Plan Update

Traffic Assessment/Site Access Analysis

Opening Year (2029) with Project Peak Hour Traffic Volumes

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Table B - Project Trip Generation

Land Use	Units	A.M. Peak Hour In	A.M. Peak Hour Out	A.M. Peak Hour Total
Damien High School	940 Students			
Trips/Unit		*Not Applicable*		
Trip Generation[1]		618	348	966
Drop-Off Trips		348	348	696
Parking Trips		270	-	270
	Total Trip Generation	**618**	**348**	**966**

Notes:

[1] Rates based on Damien High School Driveways Traffic Counts on May 17, 2018.

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Table C - Cumulative Projects Trip Generation

Project Number	Project Name	Land Use	Units		A.M. Peak Hour In	Out	Total
1	**ULV Residence + Dining Hall**		674	STU			
		Trip Generation[1]			72	20	92
2	**Reeves Building Expansion**		8.00	TSF			
		Trips/Unit[2]			1.00	0.16	1.16
		Trip Generation			8	1	9
3	**Ludwick Center**		125	STU			
		Trips/Unit[3]			0.12	0.03	0.15
		Trip Generation			15	4	19
4	**Bonita Station**		650	DU			
		Trips/Unit[4]			0.09	0.27	0.36
		Trip Generation			61	173	234
	Total Trips				**156**	**198**	**354**

Notes:

TSF = Thousand Square Feet; DU = Dwelling Units; AC = Acres; STU = Students; BED= Beds; RM= Room

1 Trips obtained from University of La Verne Facilities and Technology MP Traffic Impact Analysis, Linscott, Law and Greenspan, 2016. Trips from the Phases I and II of the La Verne Campus were adapted as a conservative estimate.

2 Rates based on Land Use 710 - "General Office Building" from the ITE *Trip Generation Manual,* 10th Edition.

3 Rates based on Land Use 550 - "University/College" from the ITE *Trip Generation Manual,* 10th Edition.

4 Rates based on Land Use 221 - "Multifamily Housing (Mid-Rise)" from the ITE *Trip Generation Manual,* 10th Edition.

Table D: Intersection Level of Service Definitions

LOS	Description
A	No approach phase is fully utilized by traffic and no vehicle waits longer than one red indication. Typically, the approach appears quite open, turns are made easily and nearly all drivers find freedom of operation.
B	This service level represents stable operation, where an occasional approach phase is fully utilized and a substantial number are approaching full use. Many drivers begin to feel restricted within platoons of vehicles.
C	This level still represents stable operating conditions. Occasionally drivers may have to wait through more than one red signal indication, and backups may develop behind turning vehicles. Most drivers feel somewhat restricted, but not objectionably so.
D	This level encompasses a zone of increasing restriction approaching instability at the intersection. Delays to approaching vehicles may be substantial during short peaks within the peak period; however, enough cycles with lower demand occur to permit periodic clearance of developing queues, thus preventing excessive backups.
E	Capacity occurs at the upper end of this service level. It represents the most vehicles that any particular intersection approach can accommodate. Full utilization of every signal cycle is seldom attained no matter how great the demand.
F	This level describes forced flow operations at low speeds, where volumes exceed capacity. These conditions usually result from queues of vehicles backing up from a restriction downstream. Speeds are reduced substantially and stoppages may occur for short or long periods of time due to the congestion. In the extreme case, both speed and volume can drop to zero.

Table E: Level of Service Criteria for Unsignalized and Signalized Intersections

Level of Service	Unsignalized Intersection Average Delay per Vehicle (sec.)	Signalized Intersection Average Delay per Vehicle (sec.)
A	≤ 10	≤ 10
B	> 10 and ≤ 15	> 10 and ≤ 20
C	> 15 and ≤ 25	> 20 and ≤ 35
D	> 25 and ≤ 35	> 35 and ≤ 55
E	> 35 and ≤ 50	> 55 and ≤ 80
F	> 50	> 80

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Table F - Existing Intersection Levels of Service

Intersection	Control	Existing AM Peak Hour Delay (sec.)	Existing AM Peak Hour LOS	Existing + Project AM Peak Hour Delay (sec.)	Existing + Project AM Peak Hour LOS
1 . Damien Avenue/Bonita Avenue	Signal	14.9	B	14.9	B
2 . Damien Avenue/Project Driveway 1	OWSC	11.7	B	12.3	B
3 . Damien Avenue/Project Driveway 2	OWSC	14.4	B	8.4	A
4 . Damien Avenue/ Project Driveway 3	OWSC	25.3	D	22.6	C
5 . Damien Avenue/Palomares Avenue	AWSC	9.4	A	9.9	A
6 . Project Driveway 7/Palomares Avenue	OWSC	*Does not Exist*		7.6	A
7 . Sedalia Avenue-Project Driveway 5/Bonita Avenue	TWSC	21.0	C	21.0	C
8 . Project Driveway 6/Bonita Avenue	OWSC	9.6	A	9.6	A

Notes:

OWSC- One Way Stop Control; TWSC- Two Way Stop Control; AWSC- All Way Stop Control

Delay = Average control delay in seconds.

LOS = Level of Service

* Exceeds LOS Standard

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Table G - Project Opening Year(2029) Intersection Levels of Service

Intersection	Control	OY without Project AM Peak Hour Delay (sec.)	OY without Project AM Peak Hour LOS	OY + Project AM Peak Hour Delay (sec.)	OY + Project AM Peak Hour LOS
1 . Damien Avenue/Bonita Avenue	Signal	14.9	B	14.9	B
2 . Damien Avenue/Project Driveway 1	OWSC	12.3	B	12.3	B
3 . Damien Avenue/Project Driveway 2	OWSC	14.4	B	8.3	A
4 . Damien Avenue/ Project Driveway 3	OWSC	25.4	D	22.6	C
5 . Damien Avenue/Palomares Avenue	AWSC	9.4	A	10.0	A
6 . Project Driveway 7/Palomares Avenue	OWSC	*Does not Exist*		7.6	A
7 . Sedalia Avenue-Project Driveway 5/Bonita Avenue	TWSC	21.8	C	21.8	C
8 . Project Driveway 6/Bonita Avenue	OWSC	9.6	A	9.6	A

Notes:

OWSC- One Way Stop Control; TWSC- Two Way Stop Control; AWSC- All Way Stop Control

Delay = Average control delay in seconds.

LOS = Level of Service

* Exceeds LOS Standard

LSA

Table H - Driveway Queuing Analysis

Intersection	Movement	Storage Length[1] (ft/ln)	Existing + Project 95th Percentile Queue AM	OY + Project 95th Percentile Queue AM
2 . Damien Avenue/Project Driveway 1	**WBLR***	250	88	99
3 . Damien Avenue/Project Driveway 2	**WBLR***	250	-	-
4 . Damien Avenue/ Project Driveway 3	**WBLR***	200	82	97
6 . Project Driveway 7/Palomares Avenue	**WBLR***	175	-	-
7 . Sedalia Avenue-Project Driveway 5/Bonita Avenue	**NBR**[2] **WBL**	125 TWLTL	42 25	42 25
8 . Project Driveway 6/Bonita Avenue	**NBR**[2] **WBL**	125 TWLTL	43 25	43 25

Notes:

ft/ln = feet per lane

Bold = Queue exceeds available storage.

[1] Storage length for all movements at Project Driveway calculated based on the site plan and Google Earth aerial photography.

* Queue reported from Simtraffic

[2] Queue reported from HCS7

ATTACHMENT B: SCOPING AGREEMENT

CARLSBAD
FRESNO
IRVINE
LOS ANGELES
PALM SPRINGS
POINT RICHMOND
RIVERSIDE
ROSEVILLE
SAN LUIS OBISPO

August 2, 2018

Luke Seibert
Senior Planner
City of La Verne Community Development
Department
3660 "D" Street
La Verne, CA 91750-3599

Subject: Damien High School Master Plan Update- Traffic Assessment/Site Access Analysis Scoping Letter (LSA Project No. LVR1801)

Dear Mr. Seibert:

LSA will be preparing a traffic assessment/site access analysis (study) for the proposed Damien High School Master Plan Update, located at 2280 Damien Avenue, between Bonita Avenue in the north and Palomares Avenue in the south, in the City of La Verne (City). The proposed project will upgrade the school facilities with the addition of approximately 73,100 square feet of development, demolition of approximately 6,000 square feet of existing development and modification of the internal circulation pattern and access points. However, the proposed development does not result in any changes in the existing numbers of students, faculty or staff. Figure 1 illustrates the regional and project location, Figure 2 illustrates the existing site plan and Figure 3 illustrates the proposed master plan (All figures attached). Figure2 also includes the location of all existing driveways while Figure 3 illustrates the location of all driveways upon completion of the project. Table A summarizes the access types of each of the existing and proposed driveways as illustrated in Figures 2 and 3 respectively.

Table A: EXISTING AND PROPOSED DRIVEWAYS

DRIVEWAYS		
Intersections	**Existing Access**	**Proposed Access**
Damien Avenue		
• Project Driveway 1	Exit Only (Egress)	Exit Only (Egress)
• Project Driveway 2	Full Access (Ingress | Egress)	Full Access (Ingress | Egress)
• Project Driveway 3	Enter Only (Ingress)	Full Access (Ingress | Egress)
• Project Driveway 4*	Full Access (Ingress | Egress)	Full Access (Ingress | Egress)
Bonita Avenue		
• Project Driveway 5	Full Access (Ingress | Egress)	Full Access (Ingress | Egress)
• Project Driveway 6	Full Access (Ingress | Egress)	Full Access (Ingress | Egress)
Palomares Avenue		

1500 Iowa Avenue, Suite 200, Riverside, California 92507 951.781.9310 www.lsa.net

• Project Driveway 7	*Does Not Exist*	Full Access (Ingress | Egress)

* Project Driveway 4 currently serves as a service access point only and will continue to do so after project completion.

Since, the proposed project will not result in any increase in student enrollment, the project is not anticipated to generate any additional trips during the weekday school operations. Additionally, while the master plan proposes to redistribute parking lots within the site, it is not anticipated that this will result in any changes in trip arrival/departure pattern at a regional level compared to the existing trip pattern. Therefore, a focused traffic analysis is being recommended that will only evaluate the changes in traffic circulation around the school and at the school access driveways used by the students or staff. Based on these assumptions the following scope of work is being proposed for the preparation of this study.

SCOPE OF WORK

The study will be prepared based on consultation with City staff and will generally follow the requirements as established by the City. The study will evaluate the four existing and one new project driveways as well as the intersections of Damien Avenue/Bonita Avenue and Damien Avenue/Palomares Avenue. Although the project will be built in three phases, the study will evaluate traffic issues under full project build-out conditions when all project traffic is redistributed due to the proposed project. Therefore, the following four scenarios will be analyzed:

- Existing Conditions;
- Existing Plus Project (Phase 3) Conditions;
- Opening Year Without Project Conditions; and
- Opening Year With Project (Phase 3) Conditions.

Study Intersections Analysis

Traffic conditions will be examined for the weekday a.m. peak hour when both the school traffic as well as the adjacent street traffic are at their peak (worst-case scenario). In the case of schools, the a.m. peak hour of vehicle trip generation coincides with the a.m. peak commute hour (i.e., the highest hour between 7:00 and 9:00 a.m.). Based on the Master Plan and consultation with City staff, access and operational analysis are proposed for the following intersections:

1. Damien Avenue/Bonita Avenue;
2. Damien Avenue/Project Driveway 1;
3. Damien Avenue/Project Driveway 2;
4. Damien Avenue/Project Driveway 3;
5. Damien Avenue/Palomares Avenue
6. Project Driveway 7/Palomares Avenue
7. Sedalia Avenue-Project Driveway 5/Bonita Avenue; and,

8. Project Driveway 6/Bonita Avenue.

Previously referenced Figure 2 and Figure 3 illustrates the study area intersections.

Existing Traffic Conditions

To establish existing site conditions, the study needs to collect traffic counts at the existing driveways and the two adjacent intersections. Therefore, intersection turning movement counts during the a.m. peak hour were collected at the seven existing study intersections on May 17, 2018. Figure 4 illustrates the existing a.m. peak hour traffic volumes at the study intersections. Existing a.m. peak hour traffic conditions and levels of service will be assessed for the project driveways. Traffic studies in the City are prepared using the Los Angeles County Department of Public Works Traffic Impact Analysis report Guidelines which recommends using the Intersection Capacity Utilization (ICU) methodology. Typically, there is a significance of bicycle and pedestrian traffic around a school site. ICU methodology is not capable of evaluating traffic conditions when multiple modes of transportation are involved. Therefore, for purposes of this analysis, LSA recommends using the Highway Capacity Manual 6 (HCM 6) methodology which incorporates multimodal analysis and Synchro 10 software. Additionally, analysis of unsignalized driveways is better represented in Synchro and SimTraffic software. ICU methodology can only be applied to signalized intersections.

Opening Year Without Project Traffic Conditions

Traffic volumes for opening year without project conditions will be developed by applying a growth rate to existing traffic volumes and by adding traffic volumes from approved and pending projects to existing traffic volumes. The growth rate has been developed using the household and employment data from the 2016-2040 RTP/SCS Final Growth Forecast by Jurisdiction Table. The calculated growth rate is 2.56% from existing (2018) to opening year (2029). The 2016-2040 RTP/SCS Final Growth Rate Table is attached in Appendix A. Cumulative project information were obtained from the City as well adjacent jurisdictions (City of San Dimas and Pomona). The cumulative projects were shortlisted based on projects that are anticipated to add traffic to the study area intersections. Figure 5 illustrates the cumulative projects to be included in the analysis. Table B provides a detailed description for each of the selected cumulative project. The resulting intersection levels of service will be calculated at the study intersections.

Project Trip Characteristics and Changes to Traffic Patterns

The existing driveway counts inventory will provide an estimate of existing traffic pattern to and from the site. Based on the reconfiguration and/or addition of driveways and rearrangement of parking lots within the site, the school traffic will accordingly be redistributed at the school driveways and the two adjacent intersections.

Existing and Opening Year With Project Conditions

To develop with project conditions traffic volumes, the existing school traffic will be removed from the without project traffic volumes and then the proposed redistributed project traffic will be added back in. This will result in development of with project conditions traffic volumes for both existing

and opening year conditions. The resulting intersection levels of service will be calculated at the study intersections.

Site Access Impacts and Recommended Improvements

The study will evaluate possible traffic operations issues at the study intersections. If required, improvements will be recommended at these locations that will help address traffic operations issues due to the redistribution of project traffic.

Site Access Analysis Memorandum

A draft and final technical site access analysis memorandum will be prepared to include the above study, and findings. The memorandum will be included as an appendix to the Initial Study.

Required access geometrics, stacking and queuing requirements will be recommended at the site access locations and any improvements if required at the adjacent intersections. The required improvements will be documented in the site access analysis memorandum.

We would appreciate if you could review the scope of this study outlined in this letter and the accompanying figures to the proposed study area intersections, cumulative projects and recommended growth rate. Should the City have any comments or require additional information, please do not hesitate to contact me at (951) 781-9310.

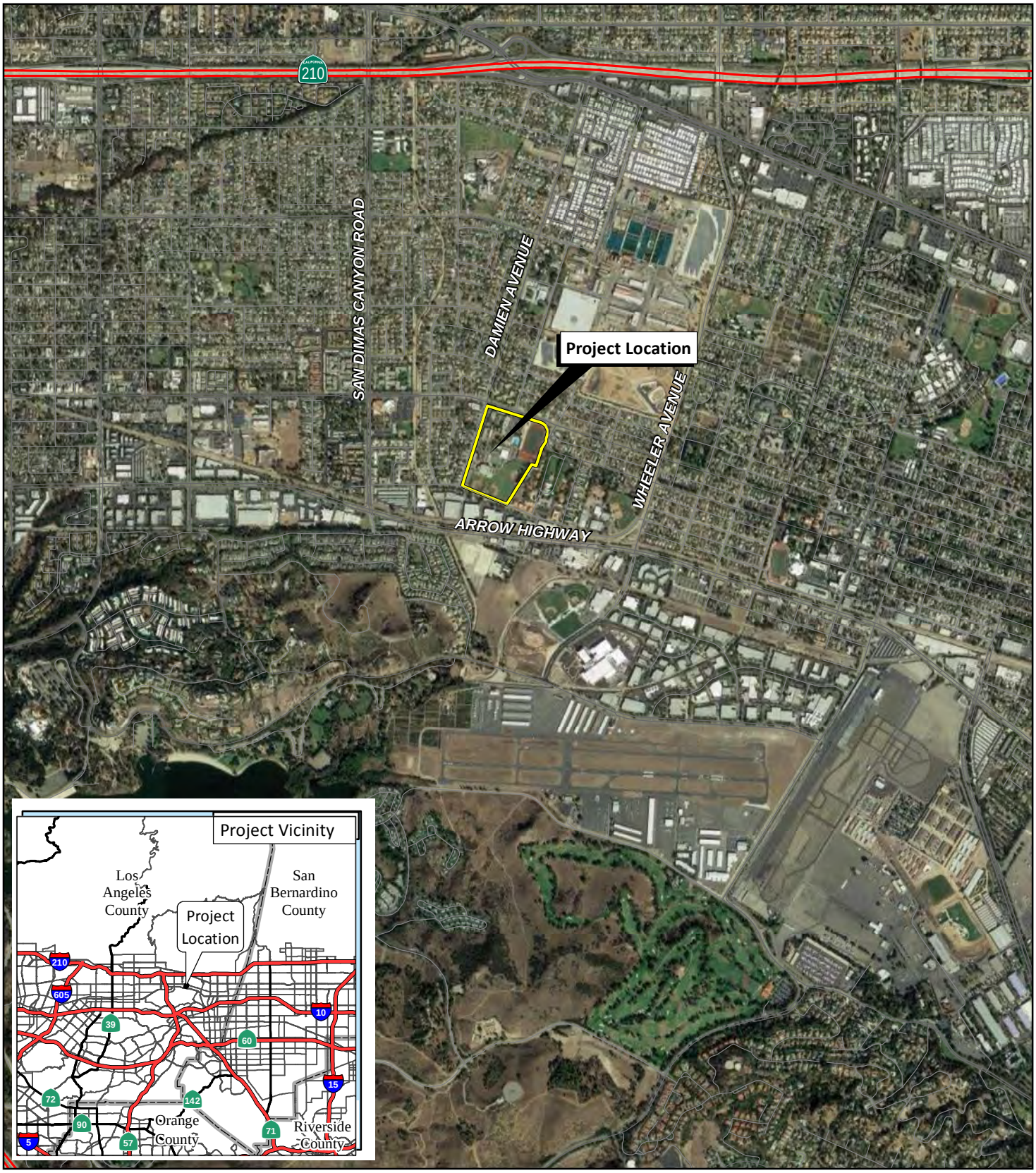
Sincerely,

LSA Associates, Inc.

Ambarish Mukherjee, AICP, P.E.
Associate/ Senior Transportation Planner

Attachment:

Figure 1: Regional and Project Location
Figure 2: Existing Site- Damien High School
Figure 3: Proposed Master Plan- Damien High School
Figure 4: Existing (2018) Peak Hour Traffic Volumes
Figure 5: Cumulative Projects Location
Table B: Cumulative Projects List
Appendix A: 2016-2040 RTP/SCS Final Growth Forecast by Jurisdiction.



LSA

FIGURE 1

N

0 1000 2000
FEET

SOURCE: Google Earth, 2016; ESRI Streetmap, 2013.

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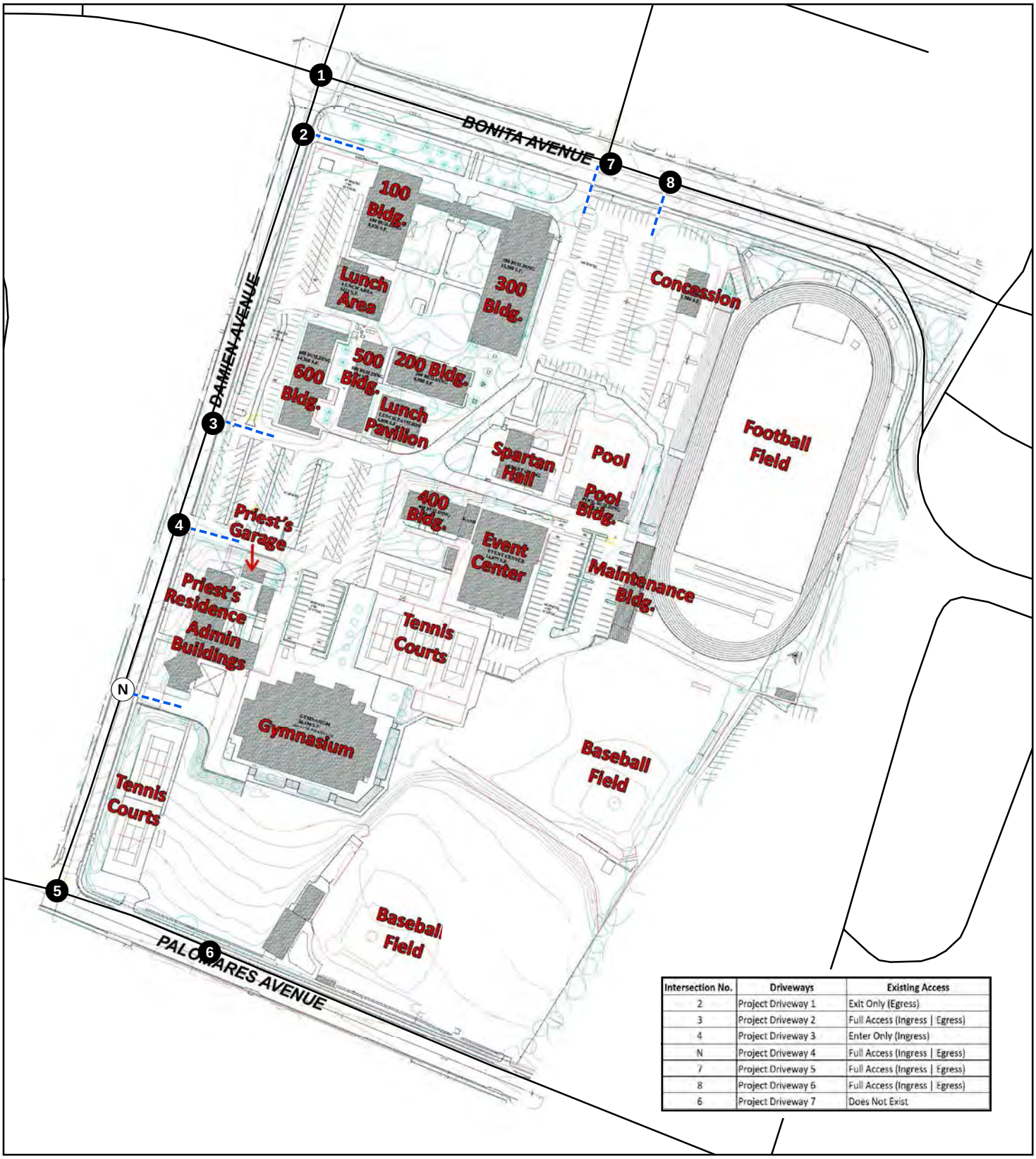
Damien High School Master Plan Update

Regional and Project Location



Intersection No.	Driveways	Existing Access
2	Project Driveway 1	Exit Only (Egress)
3	Project Driveway 2	Full Access (Ingress | Egress)
4	Project Driveway 3	Enter Only (Ingress)
N	Project Driveway 4	Full Access (Ingress | Egress)
7	Project Driveway 5	Full Access (Ingress | Egress)
8	Project Driveway 6	Full Access (Ingress | Egress)
6	Project Driveway 7	Does Not Exist

LSA

LEGEND

- Study Area Intersection
- Intersection Not Considered for Access Analysis
- Existing Driveway

N

0 100 200

FEET

FIGURE 2

Damien High School Master Plan Update
Site Access Analysis

Existing Site - Damien High School

SOURCE: ESRI Streetmap, 2013; Kalban Architects, 2017.

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Intersection No.	Driveways	Proposed Access
2	Project Driveway 1	Exit Only (Egress)
3	Project Driveway 2	Full Access (Ingress | Egress)
4	Project Driveway 3	Full Access (Ingress | Egress)
N	Project Driveway 4	Full Access (Ingress | Egress)
7	Project Driveway 5	Full Access (Ingress | Egress)
8	Project Driveway 6	Full Access (Ingress | Egress)
6	Project Driveway 7	Full Access (Ingress | Egress)

LSA

LEGEND

- Study Area Intersection
- Intersection Not Considered for Access Analysis
- Existing Driveway
- Proposed Driveway

0 100 200
FEET

FIGURE 3

Damien High School Master Plan Update
Site Access Analysis

Proposed Master Plan - Damien High School

SOURCE: ESRI Streetmap, 2013; Kalban Architects, 2017.

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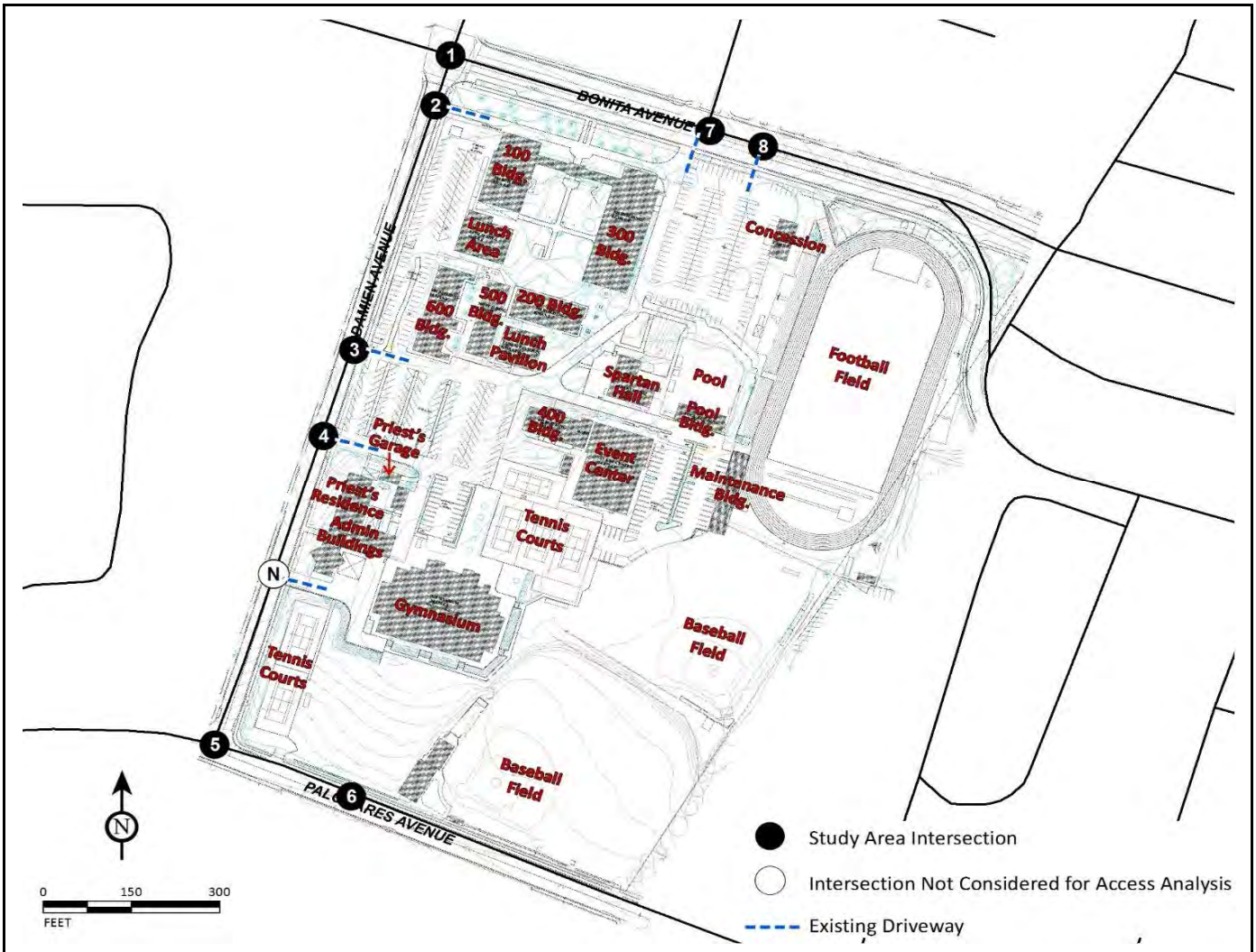

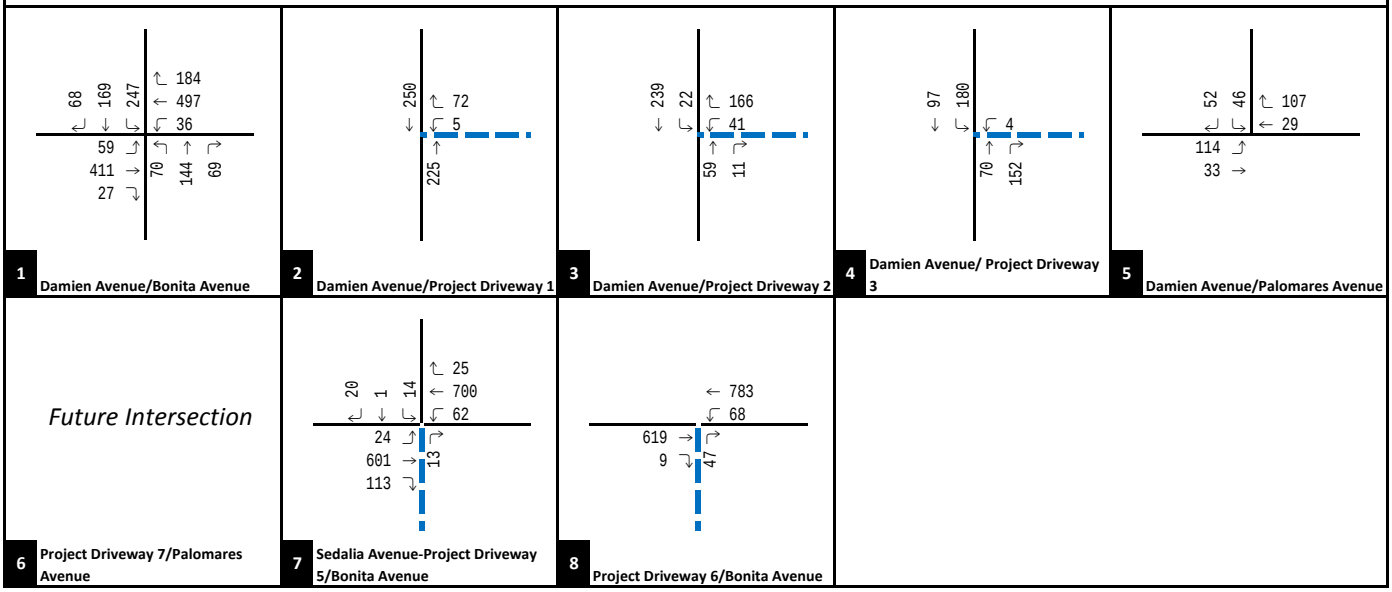

FIGURE 4

LSA

XXX

AM Peak Hour Volumes

Damien High School Master Plan Update

Traffic Assesment/Site Access Analysis

Existing (2018) Peak Hour Traffic Volumes

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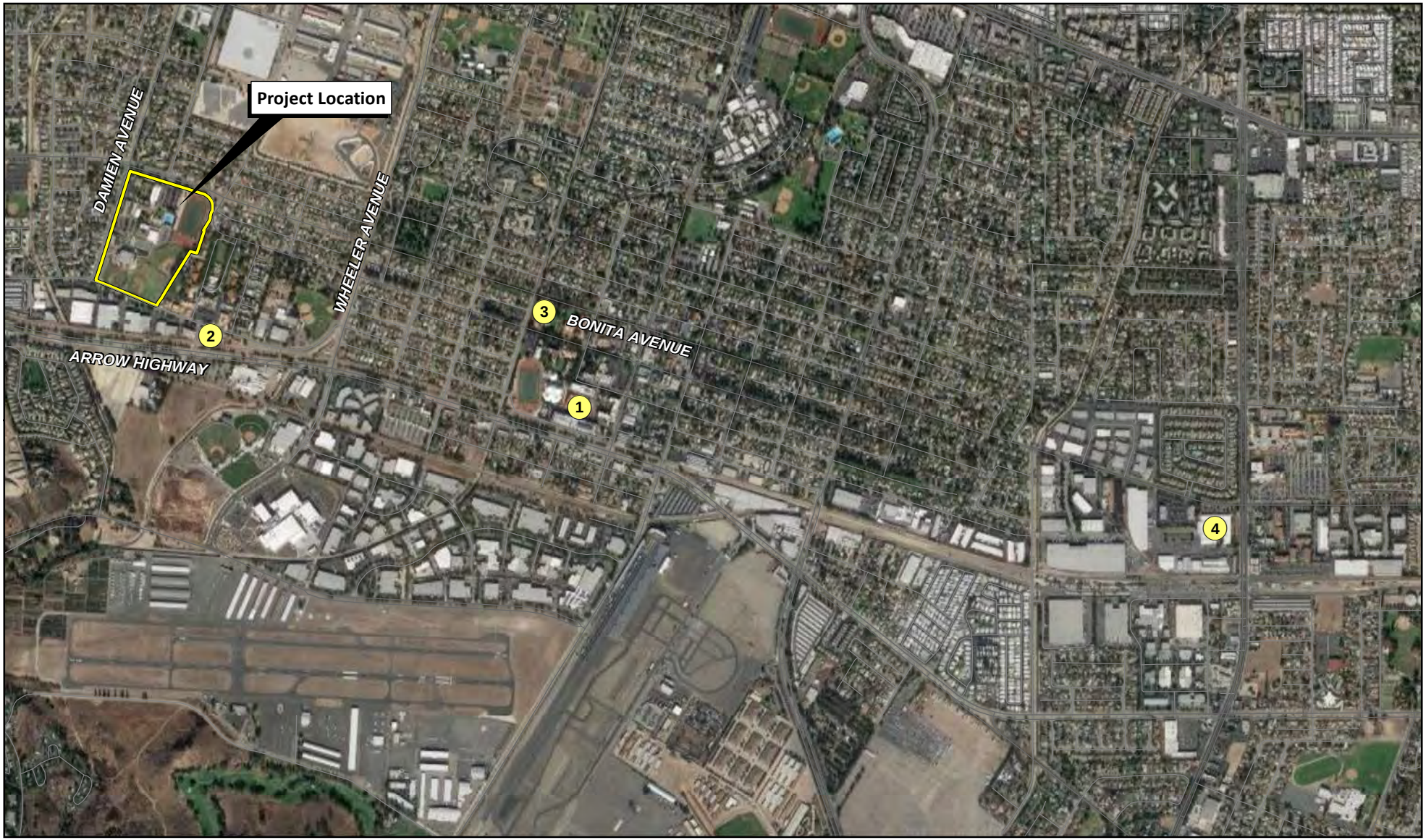

LSA

LEGEND

Project Location

Cumulative Project Location

FIGURE 5

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FEET

SOURCE: Google Earth, 2016; ESRI Streetmap, 2013.

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Damien High School Master Plan Update
Traffic Assesment/Site Access Analysis

Cumulative Projects Location

LSA

Table B: Cumulative Projects List

No.	Name	Location	Jurisdiction	Land Uses	Units
1	ULV Residence/Dining Hall	2043 D Street	City of La Verne	On-Campus Student Residence Dining Hall	96.27 TSF 18.70 TSF
2	Reeves Building Expansion	1350 Palomares Avenue	City of La Verne	Commercial/Retail	8.00 TSF
3	Ludwick Center	1920 Bonita Ave	City of La Verne	University/College	125 STU
4	Bonita Station	2771 N. Garey Ave.	City of Pomona	Multi-Family Residential	650 DU

Notes: TSF = Thousand Square Feet; DU = Dwelling Units; STU = Students

APPENDIX A

2016-2040 RTP/SCS Final Growth Forecast by Jurisdiction

2016-2040 RTP/SCS Final Growth Forecast by Jurisdiction

County	Jurisdiction	Population2012	Population2020	Population2035	Population2040	Household2012	Household2020	Household2035	Household2040	Employment2012	Employment2020	Employment2035	Employment2040
IMPERIAL COUNTY	Brawley city	25,800	34,600	40,600	42,900	7,600	11,400	14,100	15,000	8,000	13,700	16,300	16,800
IMPERIAL COUNTY	Calexico city	40,200	49,700	60,600	62,200	10,200	14,200	18,700	19,300	8,300	13,800	17,000	17,500
IMPERIAL COUNTY	Calipatria city	7,600	8,500	9,400	9,600	1,000	1,300	1,500	1,600	1,300	1,700	2,200	2,200
IMPERIAL COUNTY	El Centro city	44,100	53,200	58,900	61,000	13,100	17,100	19,200	19,900	20,300	35,300	42,100	43,800
IMPERIAL COUNTY	Holtville city	6,100	6,900	7,800	8,000	1,800	2,100	2,400	2,500	1,000	1,700	2,000	2,000
IMPERIAL COUNTY	Imperial city	15,800	19,600	23,900	25,400	4,600	6,300	8,200	8,800	3,400	7,000	9,100	9,500
IMPERIAL COUNTY	Westmorland city	2,300	2,400	2,600	2,700	600	700	700	700	300	400	400	500
IMPERIAL COUNTY	Unincorporated	37,700	59,700	68,600	70,300	10,400	18,700	23,800	24,700	16,400	28,100	31,500	32,300
		179,600	234,600	272,400	282,100	49,300	71,800	88,600	92,500	59,000	101,700	120,600	124,600
LOS ANGELES COUNTY	Agoura Hills city	20,500	20,700	22,100	22,700	7,300	7,500	8,000	8,200	12,500	13,800	14,700	15,300
LOS ANGELES COUNTY	Alhambra city	84,000	85,300	87,800	88,800	29,300	30,300	31,400	31,900	28,000	30,500	32,300	33,500
LOS ANGELES COUNTY	Arcadia city	56,700	59,000	63,700	65,900	19,600	20,800	22,200	22,900	28,900	31,400	33,200	34,400
LOS ANGELES COUNTY	Artesia city	16,600	16,900	17,600	18,000	4,500	4,700	4,900	5,000	5,000	5,300	5,600	5,800
LOS ANGELES COUNTY	Avalon city	3,800	4,000	4,700	5,100	1,500	1,700	1,900	2,100	2,500	2,700	2,900	3,000
LOS ANGELES COUNTY	Azusa city	47,100	49,300	53,000	55,000	12,800	13,900	15,000	15,600	16,600	18,500	19,800	20,600
LOS ANGELES COUNTY	Baldwin Park city	76,100	77,700	81,500	83,600	17,200	17,900	18,800	19,300	16,500	17,900	18,900	19,500
LOS ANGELES COUNTY	Bell city	35,700	35,800	36,400	36,900	8,900	8,900	9,100	9,200	12,400	13,000	13,400	13,700
LOS ANGELES COUNTY	Bellflower city	77,100	77,500	79,000	79,600	23,700	23,800	24,200	24,400	13,600	14,100	14,500	14,700
LOS ANGELES COUNTY	Bell Gardens city	42,300	42,400	43,300	44,000	9,700	9,700	9,900	10,100	9,400	9,900	10,300	10,500
LOS ANGELES COUNTY	Beverly Hills city	34,400	35,800	36,600	37,200	14,900	15,500	15,900	16,200	57,700	63,100	66,700	68,900
LOS ANGELES COUNTY	Bradbury city	1,100	1,100	1,200	1,200	400	400	400	400	100	200	200	200
LOS ANGELES COUNTY	Burbank city	103,300	107,900	116,500	118,700	42,500	44,300	47,600	48,400	106,800	119,000	141,900	145,000
LOS ANGELES COUNTY	Calabasas city	23,800	24,000	24,300	24,500	8,700	8,900	9,100	9,100	16,700	17,000	17,200	17,300
LOS ANGELES COUNTY	Carson city	92,000	96,100	104,200	107,900	25,300	27,400	29,800	30,800	58,500	64,000	67,400	69,700
LOS ANGELES COUNTY	Cerritos city	49,300	49,700	50,600	50,900	15,500	15,600	15,900	16,000	30,400	32,200	33,100	33,700
LOS ANGELES COUNTY	Claremont city	35,500	36,300	38,200	39,400	11,700	12,200	12,800	13,200	17,400	18,500	19,300	19,700
LOS ANGELES COUNTY	Commerce city	12,900	13,000	13,400	13,500	3,400	3,400	3,500	3,600	44,600	46,900	48,200	49,100
LOS ANGELES COUNTY	Compton city	97,300	97,400	99,100	100,900	23,100	23,100	23,600	24,000	25,400	26,900	27,600	28,200
LOS ANGELES COUNTY	Covina city	48,200	48,800	50,600	51,600	15,900	16,300	16,900	17,200	25,300	27,300	28,700	29,500
LOS ANGELES COUNTY	Cudahy city	23,800	23,800	23,800	23,800	5,600	5,600	5,600	5,600	2,900	2,900	2,900	2,900
LOS ANGELES COUNTY	Culver City city	39,100	39,500	40,300	40,700	16,800	16,900	17,300	17,500	44,100	49,100	51,600	53,000
LOS ANGELES COUNTY	Diamond Bar city	56,000	57,800	62,400	63,900	17,900	19,100	20,700	21,200	15,400	17,100	18,500	19,300
LOS ANGELES COUNTY	Downey city	112,500	114,400	119,000	121,700	33,900	35,000	36,400	37,300	47,500	50,100	51,900	53,000
LOS ANGELES COUNTY	Duarte city	21,500	22,100	23,600	24,300	7,000	7,400	8,000	8,200	10,100	10,900	11,600	11,900
LOS ANGELES COUNTY	El Monte city	114,200	120,000	132,000	137,200	27,800	30,400	33,400	34,700	28,000	31,400	34,100	35,700
LOS ANGELES COUNTY	El Segundo city	16,700	16,800	17,000	17,300	7,100	7,200	7,200	7,400	38,400	42,100	44,100	45,400
LOS ANGELES COUNTY	Gardena city	59,400	60,100	66,800	68,700	20,600	21,100	23,500	24,200	28,900	31,200	32,600	33,500
LOS ANGELES COUNTY	Glendale city	193,200	200,100	209,000	214,000	72,400	75,200	79,000	81,100	111,300	119,800	124,200	127,000
LOS ANGELES COUNTY	Glendora city	50,500	52,400	53,400	54,300	17,200	18,200	18,600	18,900	20,000	21,400	22,400	23,000
LOS ANGELES COUNTY	Hawaiian Gardens city	14,300	14,700	15,500	15,900	3,600	3,700	3,900	4,000	4,800	5,100	5,400	5,600
LOS ANGELES COUNTY	Hawthorne city	85,300	85,600	86,500	87,000	28,600	29,000	29,700	30,000	27,200	29,600	31,100	32,100
LOS ANGELES COUNTY	Hermosa Beach city	19,600	19,700	20,200	20,400	9,500	9,600	9,800	9,800	7,400	8,100	9,500	10,000
LOS ANGELES COUNTY	Hidden Hills city	1,900	1,900	1,900	2,000	600	600	600	600	300	300	300	300
LOS ANGELES COUNTY	Huntington Park city	58,500	60,800	65,400	67,400	14,600	15,600	16,900	17,400	15,600	16,900	18,000	18,600
LOS ANGELES COUNTY	Industry city	500	500	500	500	100	100	100	100	67,700	71,600	73,400	74,700
LOS ANGELES COUNTY	Inglewood city	110,900	120,800	126,500	129,000	36,600	40,400	42,400	43,300	31,100	34,800	36,400	37,400
LOS ANGELES COUNTY	Irwindale city	1,400	1,500	1,800	2,000	400	400	500	500	18,800	20,300	21,000	21,500
LOS ANGELES COUNTY	La Cañada Flintridge city	20,400	20,600	21,200	21,600	6,900	7,000	7,200	7,300	6,500	7,300	7,900	8,300
LOS ANGELES COUNTY	La Habra Heights city	5,400	5,600	6,000	6,200	1,800	1,800	1,900	1,900	200	300	400	400
LOS ANGELES COUNTY	Lakewood city	80,600	81,500	83,300	84,700	26,600	27,100	27,700	28,200	18,900	20,000	20,900	21,400
LOS ANGELES COUNTY	La Mirada city	48,800	49,400	51,000	52,100	14,700	15,000	15,500	15,800	17,400	18,800	19,700	20,200
LOS ANGELES COUNTY	Lancaster city	158,300	167,400	195,800	209,900	47,400	52,400	61,000	65,300	45,800	51,700	56,700	59,600
LOS ANGELES COUNTY	La Puente city	40,100	42,800	48,700	50,200	9,500	10,600	12,000	12,400	6,300	7,300	8,100	8,700
LOS ANGELES COUNTY	La Verne city	31,800	32,200	32,600	32,900	11,400	11,600	11,800	12,100	12,200	13,200	13,900	14,300
LOS ANGELES COUNTY	Lawndale city	33,000	33,100	33,700	33,900	9,700	9,800	10,000	10,100	6,700	7,300	7,800	8,200
LOS ANGELES COUNTY	Lomita city	20,500	20,500	20,900	21,200	8,100	8,100	8,300	8,400	4,600	5,000	5,200	5,400
LOS ANGELES COUNTY	Long Beach city	466,300	478,300	481,500	484,500	163,800	170,800	173,200	175,500	153,200	165,800	175,500	181,700
LOS ANGELES COUNTY	Los Angeles city	3,845,500	4,017,000	4,442,500	4,609,400	1,325,500	1,441,400	1,618,900	1,690,300	1,696,400	1,899,500	2,104,100	2,169,100

ATTACHMENT C: EXISTING-OPENING YEAR GROWTH RATE CALCULATION

LSA

2018-2029 Traffic Growth Rate Calculation

	2020	2035	Total Growth	% Growth
Household[1]	11,600	11,800	200	1.72%
Employment[1]	13,200	13,900	700	5.30%
2020 -2035 Traffic Growth (Avg of HH and EMP Growth)				3.51%
Annual Traffic Growth Rate				0.23%
2018-2029 Traffic Growth				**2.56%**

[1] Household and employment data obtained from 2016-2040 SCAG RTP/SCS Table

ATTACHMENT D: VOLUME DEVELOPMENT WORKSHEETS

LSA

Table C-1 - Existing (2018) Peak Hour Volume Summary

	A.M. Peak Hour			
	Existing Background Volumes	Existing School		Existing Volumes
		Drop-Off Trips	Parking Trips	
1 Damien Avenue/Bonita Avenue				
NBL	14	59	0	73
NBT	30	121	0	151
NBR	14	58	0	72
SBL	201	24	22	247
SBT	35	85	62	182
SBR	68	0	0	68
EBL	59	0	0	59
EBT	335	41	35	411
EBR	6	14	9	29
WBL	7	17	15	39
WBT	497	0	0	497
WBR	184	0	0	184
North Leg				
Approach	304	109	84	497
Departure	273	121	0	394
Total	577	230	84	891
South Leg				
Approach	58	238	0	296
Departure	48	116	86	250
Total	106	354	86	546
East Leg				
Approach	688	17	15	720
Departure	550	123	57	730
Total	1,238	140	72	1,450
West Leg				
Approach	400	55	44	499
Departure	579	59	0	638
Total	979	114	44	1,137
Total Approaches				
Approach	1,450	419	143	2,012
Departure	1,450	419	143	2,012
Total	2,900	838	286	4,024

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Table C-1 - Existing (2018) Peak Hour Volume Summary

	A.M. Peak Hour			
	Existing Background Volumes	Existing School Drop-Off Trips	Existing School Parking Trips	Existing Volumes
2 Damien Avenue/Project Driveway 1				
NBL	0	0	0	0
NBT	59	166	0	225
NBR	0	0	0	0
SBL	0	0	0	0
SBT	48	116	86	250
SBR	0	0	0	0
EBL	0	0	0	0
EBT	0	0	0	0
EBR	0	0	0	0
WBL	0	5	0	5
WBT	0	0	0	0
WBR	0	72	0	72
North Leg				
Approach	48	116	86	250
Departure	59	238	0	297
Total	107	354	86	547
South Leg				
Approach	59	166	0	225
Departure	48	121	86	255
Total	107	287	86	480
East Leg				
Approach	0	77	0	77
Departure	0	0	0	0
Total	0	77	0	77
West Leg				
Approach	0	0	0	0
Departure	0	0	0	0
Total	0	0	0	0
Total Approaches				
Approach	107	359	86	552
Departure	107	359	86	552
Total	214	718	172	1,104

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Table C-1 - Existing (2018) Peak Hour Volume Summary

	A.M. Peak Hour			
	Existing Background Volumes	Existing School Drop-Off Trips	Existing School Parking Trips	Existing Volumes
3 Damien Avenue/Project Driveway 2				
NBL	0	0	0	0
NBT	59	0	0	59
NBR	0	7	4	11
SBL	0	14	8	22
SBT	54	107	78	239
SBR	0	0	0	0
EBL	0	0	0	0
EBT	0	0	0	0
EBR	0	0	0	0
WBL	0	41	0	41
WBT	0	0	0	0
WBR	0	166	0	166
North Leg				
Approach	54	121	86	261
Departure	59	166	0	225
Total	113	287	86	486
South Leg				
Approach	59	7	4	70
Departure	54	148	78	280
Total	113	155	82	350
East Leg				
Approach	0	207	0	207
Departure	0	21	12	33
Total	0	228	12	240
West Leg				
Approach	0	0	0	0
Departure	0	0	0	0
Total	0	0	0	0
Total Approaches				
Approach	113	335	90	538
Departure	113	335	90	538
Total	226	670	180	1,076

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Table C-1 - Existing (2018) Peak Hour Volume Summary

	A.M. Peak Hour			
	Existing Background Volumes	Existing School Drop-Off Trips	Existing School Parking Trips	Existing Volumes
4 Damien Avenue/ Project Driveway 3				
NBL	0	0	0	0
NBT	59	7	4	70
NBR	0	88	64	152
SBL	0	102	78	180
SBT	51	46	0	97
SBR	0	0	0	0
EBL	0	0	0	0
EBT	0	0	0	0
EBR	0	0	0	0
WBL	0	4	0	4
WBT	0	0	0	0
WBR	0	0	0	0
North Leg				
Approach	51	148	78	277
Departure	59	7	4	70
Total	110	155	82	347
South Leg				
Approach	59	95	68	222
Departure	51	50	0	101
Total	110	145	68	323
East Leg				
Approach	0	4	0	4
Departure	0	190	142	332
Total	0	194	142	336
West Leg				
Approach	0	0	0	0
Departure	0	0	0	0
Total	0	0	0	0
Total Approaches				
Approach	110	247	146	503
Departure	110	247	146	503
Total	220	494	292	1,006

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Table C-1 - Existing (2018) Peak Hour Volume Summary

	A.M. Peak Hour			
	Existing Background Volumes	Existing School Drop-Off Trips	Existing School Parking Trips	Existing Volumes
5 Damien Avenue/Palomares Avenue				
NBL	0	0	0	0
NBT	0	0	0	0
NBR	0	0	0	0
SBL	23	23	0	46
SBT	0	0	0	0
SBR	25	27	0	52
EBL	30	50	34	114
EBT	33	0	0	33
EBR	0	0	0	0
WBL	0	0	0	0
WBT	29	0	0	29
WBR	28	45	34	107
North Leg				
Approach	48	50	0	98
Departure	58	95	68	221
Total	106	145	68	319
South Leg				
Approach	0	0	0	0
Departure	0	0	0	0
Total	0	0	0	0
East Leg				
Approach	57	45	34	136
Departure	56	23	0	79
Total	113	68	34	215
West Leg				
Approach	63	50	34	147
Departure	54	27	0	81
Total	117	77	34	228
Total Approaches				
Approach	168	145	68	381
Departure	168	145	68	381
Total	336	290	136	762

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Table C-1 - Existing (2018) Peak Hour Volume Summary

	A.M. Peak Hour			
	Existing Background Volumes	Existing School Drop-Off Trips	Existing School Parking Trips	Existing Volumes
6 Project Driveway 7/Palomares Avenue				
NBL	0	0	0	0
NBT	0	0	0	0
NBR	0	0	0	0
SBL	0	0	0	0
SBT	0	0	0	0
SBR	0	0	0	0
EBL	0	0	0	0
EBT	56	23	0	79
EBR	0	0	0	0
WBL	0	0	0	0
WBT	57	45	34	136
WBR	0	0	0	0
North Leg				
Approach	0	0	0	0
Departure	0	0	0	0
Total	0	0	0	0
South Leg				
Approach	0	0	0	0
Departure	0	0	0	0
Total	0	0	0	0
East Leg				
Approach	57	45	34	136
Departure	56	23	0	79
Total	113	68	34	215
West Leg				
Approach	56	23	0	79
Departure	57	45	34	136
Total	113	68	34	215
Total Approaches				
Approach	113	68	34	215
Departure	113	68	34	215
Total	226	136	68	430

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Table C-1 - Existing (2018) Peak Hour Volume Summary

	A.M. Peak Hour			
	Existing Background Volumes	Existing School Drop-Off Trips	Existing School Parking Trips	Existing Volumes
7 Sedalia Avenue-Project Driveway 5/Bonita Avenue				
NBL	0	0	0	0
NBT	0	0	0	0
NBR	0	13	0	13
SBL	14	0	0	14
SBT	0	0	1	1
SBR	20	0	0	20
EBL	24	0	0	24
EBT	534	61	6	601
EBR	0	62	51	113
WBL	0	35	27	62
WBT	700	0	0	700
WBR	25	0	0	25
North Leg				
Approach	34	0	1	35
Departure	49	0	0	49
Total	83	0	1	84
South Leg				
Approach	0	13	0	13
Departure	0	97	79	176
Total	0	110	79	189
East Leg				
Approach	725	35	27	787
Departure	548	74	6	628
Total	1,273	109	33	1,415
West Leg				
Approach	558	123	57	738
Departure	720	0	0	720
Total	1,278	123	57	1,458
Total Approaches				
Approach	1,317	171	85	1,573
Departure	1,317	171	85	1,573
Total	2,634	342	170	3,146

LSA

Table C-1 - Existing (2018) Peak Hour Volume Summary

	A.M. Peak Hour			
	Existing Background Volumes	Existing School Drop-Off Trips	Existing School Parking Trips	Existing Volumes
8 Project Driveway 6/Bonita Avenue				
NBL	0	0	0	0
NBT	0	0	0	0
NBR	0	47	0	47
SBL	0	0	0	0
SBT	0	0	0	0
SBR	0	0	0	0
EBL	0	0	0	0
EBT	548	71	0	619
EBR	0	3	6	9
WBL	0	37	31	68
WBT	721	35	27	783
WBR	0	0	0	0
North Leg				
Approach	0	0	0	0
Departure	0	0	0	0
Total	0	0	0	0
South Leg				
Approach	0	47	0	47
Departure	0	40	37	77
Total	0	87	37	124
East Leg				
Approach	721	72	58	851
Departure	548	118	0	666
Total	1,269	190	58	1,517
West Leg				
Approach	548	74	6	628
Departure	721	35	27	783
Total	1,269	109	33	1,411
Total Approaches				
Approach	1,269	193	64	1,526
Departure	1,269	193	64	1,526
Total	2,538	386	128	3,052

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Table C-2 - Opening Year Peak Hour PCE Vol. Summary

		AM Peak Hour						
		Existing Background Volumes	Existing-Cumulative OY Growth	Trips	OY Background Volumes	OY School Drop-Off Trips	OY School Parking Trips	OY With Project
1	**Damien Avenue/Bonita Avenue**							
NBL		14	0	0	14	59	0	73
NBT		30	1	0	31	121	0	152
NBR		14	0	0	14	58	0	72
SBL		201	5	0	206	24	22	252
SBT		35	1	2	38	85	62	185
SBR		68	2	0	70	0	0	70
EBL		59	2	0	61	0	0	61
EBT		335	9	6	350	41	35	426
EBR		6	0	1	7	14	9	30
WBL		7	0	0	7	17	15	39
WBT		497	13	4	514	0	0	514
WBR		184	5	0	189	0	0	189
North Leg								
	Approach	304	8	2	314	109	84	507
	Departure	273	8	0	281	121	0	402
	Total	577	16	2	595	230	84	909
South Leg								
	Approach	58	1	0	59	238	0	297
	Departure	48	1	3	52	116	86	254
	Total	106	2	3	111	354	86	551
East Leg								
	Approach	688	18	4	710	17	15	742
	Departure	550	14	6	570	123	57	750
	Total	1,238	32	10	1,280	140	72	1,492
West Leg								
	Approach	400	11	7	418	55	44	517
	Departure	579	15	4	598	59	0	657
	Total	979	26	11	1,016	114	44	1,174
Total Approaches								
	Approach	1,450	38	13	1,501	419	143	2,063
	Departure	1,450	38	13	1,501	419	143	2,063
	Total	2,900	76	26	3,002	838	286	4,126

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Table C-2 - Opening Year Peak Hour PCE Vol. Summary

		AM Peak Hour						
		Existing Background Volumes	Existing-Cumulative OY Growth	Trips	OY Background Volumes	OY School Drop-Off Trips	OY School Parking Trips	OY With Project
2	**Damien Avenue/Project Driveway 1**							
NBL		0	0	0	0	0	0	0
NBT		59	2	0	61	166	0	227
NBR		0	0	0	0	0	0	0
SBL		0	0	0	0	0	0	0
SBT		48	1	3	52	116	86	254
SBR		0	0	0	0	0	0	0
EBL		0	0	0	0	0	0	0
EBT		0	0	0	0	0	0	0
EBR		0	0	0	0	0	0	0
WBL		0	0	0	0	5	0	5
WBT		0	0	0	0	0	0	0
WBR		0	0	0	0	72	0	72
North Leg								
	Approach	48	1	3	52	116	86	254
	Departure	59	2	0	61	238	0	299
	Total	107	3	3	113	354	86	553
South Leg								
	Approach	59	2	0	61	166	0	227
	Departure	48	1	3	52	121	86	259
	Total	107	3	3	113	287	86	486
East Leg								
	Approach	0	0	0	0	77	0	77
	Departure	0	0	0	0	0	0	0
	Total	0	0	0	0	77	0	77
West Leg								
	Approach	0	0	0	0	0	0	0
	Departure	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0
Total Approaches								
	Approach	107	3	3	113	359	86	558
	Departure	107	3	3	113	359	86	558
	Total	214	6	6	226	718	172	1,116

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Table C-2 - Opening Year Peak Hour PCE Vol. Summary

	AM Peak Hour						
	Existing Background Volumes	Existing-Cumulative OY Growth	Trips	OY Background Volumes	OY School Drop-Off Trips	OY School Parking Trips	OY With Project
3 Damien Avenue/Project Driveway 2							
NBL	0	0	0	0	0	0	0
NBT	59	2	0	61	166	0	227
NBR	0	0	0	0	0	20	20
SBL	0	0	0	0	0	26	26
SBT	54	1	3	58	121	60	239
SBR	0	0	0	0	0	0	0
EBL	0	0	0	0	0	0	0
EBT	0	0	0	0	0	0	0
EBR	0	0	0	0	0	0	0
WBL	0	0	0	0	0	0	0
WBT	0	0	0	0	0	0	0
WBR	0	0	0	0	0	0	0
North Leg							
Approach	54	1	3	58	121	86	265
Departure	59	2	0	61	166	0	227
Total	113	3	3	119	287	86	492
South Leg							
Approach	59	2	0	61	166	20	247
Departure	54	1	3	58	121	60	239
Total	113	3	3	119	287	80	486
East Leg							
Approach	0	0	0	0	0	0	0
Departure	0	0	0	0	0	46	46
Total	0	0	0	0	0	46	46
West Leg							
Approach	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
Total Approaches							
Approach	113	3	3	119	287	106	512
Departure	113	3	3	119	287	106	512
Total	226	6	6	238	574	212	1,024

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Table C-2 - Opening Year Peak Hour PCE Vol. Summary

	AM Peak Hour						
	Existing Background Volumes	Existing-Cumulative OY Growth	Trips	OY Background Volumes	OY School Drop-Off Trips	OY School Parking Trips	OY With Project
4 Damien Avenue/ Project Driveway 3							
NBL	0	0	0	0	0	0	0
NBT	59	2	0	61	0	20	81
NBR	0	0	0	0	95	16	111
SBL	0	0	0	0	116	19	135
SBT	51	1	3	55	5	41	101
SBR	0	0	0	0	0	0	0
EBL	0	0	0	0	0	0	0
EBT	0	0	0	0	0	0	0
EBR	0	0	0	0	0	0	0
WBL	0	0	0	0	45	0	45
WBT	0	0	0	0	0	0	0
WBR	0	0	0	0	166	0	166
North Leg							
Approach	51	1	3	55	121	60	236
Departure	59	2	0	61	166	20	247
Total	110	3	3	116	287	80	483
South Leg							
Approach	59	2	0	61	95	36	192
Departure	51	1	3	55	50	41	146
Total	110	3	3	116	145	77	338
East Leg							
Approach	0	0	0	0	211	0	211
Departure	0	0	0	0	211	35	246
Total	0	0	0	0	422	35	457
West Leg							
Approach	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
Total Approaches							
Approach	110	3	3	116	427	96	639
Departure	110	3	3	116	427	96	639
Total	220	6	6	232	854	192	1,278

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Table C-2 - Opening Year Peak Hour PCE Vol. Summary

	AM Peak Hour						
	Existing Background Volumes	Existing-Cumulative OY Growth	Trips	OY Background Volumes	OY School Drop-Off Trips	OY School Parking Trips	OY With Project
5 Damien Avenue/Palomares Avenue							
NBL	0	0	0	0	0	0	0
NBT	0	0	0	0	0	0	0
NBR	0	0	0	0	0	0	0
SBL	23	1	3	27	23	41	91
SBT	0	0	0	0	0	0	0
SBR	25	1	0	26	27	0	53
EBL	30	1	0	31	50	18	99
EBT	33	1	1	35	0	16	51
EBR	0	0	0	0	0	0	0
WBL	0	0	0	0	0	0	0
WBT	29	1	0	30	0	0	30
WBR	28	1	0	29	45	18	92
North Leg							
Approach	48	2	3	53	50	41	144
Departure	58	2	0	60	95	36	191
Total	106	4	3	113	145	77	335
South Leg							
Approach	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
East Leg							
Approach	57	2	0	59	45	18	122
Departure	56	2	4	62	23	57	142
Total	113	4	4	121	68	75	264
West Leg							
Approach	63	2	1	66	50	34	150
Departure	54	2	0	56	27	0	83
Total	117	4	1	122	77	34	233
Total Approaches							
Approach	168	6	4	178	145	93	416
Departure	168	6	4	178	145	93	416
Total	336	12	8	356	290	186	832

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Table C-2 - Opening Year Peak Hour PCE Vol. Summary

	AM Peak Hour						
	Existing Background Volumes	Existing-Cumulative OY Growth	Trips	OY Background Volumes	OY School Drop-Off Trips	OY School Parking Trips	OY With Project
6 Project Driveway 7/Palomares Avenue							
NBL	0	0	0	0	0	0	0
NBT	0	0	0	0	0	0	0
NBR	0	0	0	0	0	0	0
SBL	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0
SBR	0	0	0	0	0	0	0
EBL	0	0	0	0	0	57	57
EBT	56	1	4	61	23	0	84
EBR	0	0	0	0	0	0	0
WBL	0	0	0	0	0	0	0
WBT	57	1	1	59	45	18	122
WBR	0	0	0	0	0	16	16
North Leg							
Approach	0	0	0	0	0	0	0
Departure	0	0	0	0	0	73	73
Total	0	0	0	0	0	73	73
South Leg							
Approach	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
East Leg							
Approach	57	1	1	59	45	34	138
Departure	56	1	4	61	23	0	84
Total	113	2	5	120	68	34	222
West Leg							
Approach	56	1	4	61	23	57	141
Departure	57	1	1	59	45	18	122
Total	113	2	5	120	68	75	263
Total Approaches							
Approach	113	2	5	120	68	91	279
Departure	113	2	5	120	68	91	279
Total	226	4	10	240	136	182	558

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Table C-2 - Opening Year Peak Hour PCE Vol. Summary

	AM Peak Hour						
	Existing Background Volumes	Existing-Cumulative OY Growth	Trips	OY Background Volumes	OY School Drop-Off Trips	OY School Parking Trips	OY With Project
7 Sedalia Avenue-Project Driveway 5/Bonita Avenue							
NBL	0	0	0	0	0	0	0
NBT	0	0	0	0	0	0	0
NBR	0	0	0	0	13	0	13
SBL	14	0	0	14	0	0	14
SBT	0	0	0	0	0	1	1
SBR	20	1	0	21	0	0	21
EBL	24	1	0	25	0	0	25
EBT	534	14	6	554	61	6	621
EBR	0	0	0	0	62	51	113
WBL	0	0	0	0	35	27	62
WBT	700	18	4	722	0	0	722
WBR	25	1	0	26	0	0	26
North Leg							
Approach	34	1	0	35	0	1	36
Departure	49	2	0	51	0	0	51
Total	83	3	0	86	0	1	87
South Leg							
Approach	0	0	0	0	13	0	13
Departure	0	0	0	0	97	79	176
Total	0	0	0	0	110	79	189
East Leg							
Approach	725	19	4	748	35	27	810
Departure	548	14	6	568	74	6	648
Total	1,273	33	10	1,316	109	33	1,458
West Leg							
Approach	558	15	6	579	123	57	759
Departure	720	19	4	743	0	0	743
Total	1,278	34	10	1,322	123	57	1,502
Total Approaches							
Approach	1,317	35	10	1,362	171	85	1,618
Departure	1,317	35	10	1,362	171	85	1,618
Total	2,634	70	20	2,724	342	170	3,236

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Table C-2 - Opening Year Peak Hour PCE Vol. Summary

		AM Peak Hour						
		Existing Background Volumes	Existing-Cumulative OY Growth	Trips	OY Background Volumes	OY School Drop-Off Trips	OY School Parking Trips	OY With Project
8	**Project Driveway 6/Bonita Avenue**							
NBL		0	0	0	0	0	0	0
NBT		0	0	0	0	0	0	0
NBR		0	0	0	0	47	0	47
SBL		0	0	0	0	0	0	0
SBT		0	0	0	0	0	0	0
SBR		0	0	0	0	0	0	0
EBL		0	0	0	0	0	0	0
EBT		548	14	6	568	71	0	639
EBR		0	0	0	0	3	6	9
WBL		0	0	0	0	37	31	68
WBT		721	18	4	743	35	27	805
WBR		0	0	0	0	0	0	0
North Leg								
	Approach	0	0	0	0	0	0	0
	Departure	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0
South Leg								
	Approach	0	0	0	0	47	0	47
	Departure	0	0	0	0	40	37	77
	Total	0	0	0	0	87	37	124
East Leg								
	Approach	721	18	4	743	72	58	873
	Departure	548	14	6	568	118	0	686
	Total	1,269	32	10	1,311	190	58	1,559
West Leg								
	Approach	548	14	6	568	74	6	648
	Departure	721	18	4	743	35	27	805
	Total	1,269	32	10	1,311	109	33	1,453
Total Approaches								
	Approach	1,269	32	10	1,311	193	64	1,568
	Departure	1,269	32	10	1,311	193	64	1,568
	Total	2,538	64	20	2,622	386	128	3,136

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Table C-3- Existing With Project Volumes

	AM Peak Hour			
	Existing	OY School		Existing
	Background Volumes	Drop-Off Trips	Parking Trips	WP Volumes
1 Damien Avenue/Bonita Avenue				
NBL	14	59	0	73
NBT	30	121	0	151
NBR	14	58	0	72
SBL	201	24	22	247
SBT	35	85	62	182
SBR	68	0	0	68
EBL	59	0	0	59
EBT	335	41	35	411
EBR	6	14	9	29
WBL	7	17	15	39
WBT	497	0	0	497
WBR	184	0	0	184
North Leg				
Approach	304	109	84	497
Departure	273	121	0	394
Total	577	230	84	891
South Leg				
Approach	58	238	0	296
Departure	48	116	86	250
Total	106	354	86	546
East Leg				
Approach	688	17	15	720
Departure	550	123	57	730
Total	1,238	140	72	1,450
West Leg				
Approach	400	55	44	499
Departure	579	59	0	638
Total	979	114	44	1,137
Total Approaches				
Approach	1,450	419	143	2,012
Departure	1,450	419	143	2,012
Total	2,900	838	286	4,024

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Table C-3- Existing With Project Volumes

		AM Peak Hour			
		Existing Background Volumes	OY School		Existing WP Volumes
			Drop-Off Trips	Parking Trips	
2	**Damien Avenue/Project Driveway 1**				
NBL		0	0	0	0
NBT		59	166	0	225
NBR		0	0	0	0
SBL		0	0	0	0
SBT		48	116	86	250
SBR		0	0	0	0
EBL		0	0	0	0
EBT		0	0	0	0
EBR		0	0	0	0
WBL		0	5	0	5
WBT		0	0	0	0
WBR		0	72	0	72
North Leg					
	Approach	48	116	86	250
	Departure	59	238	0	297
	Total	107	354	86	547
South Leg					
	Approach	59	166	0	225
	Departure	48	121	86	255
	Total	107	287	86	480
East Leg					
	Approach	0	77	0	77
	Departure	0	0	0	0
	Total	0	77	0	77
West Leg					
	Approach	0	0	0	0
	Departure	0	0	0	0
	Total	0	0	0	0
Total Approaches					
	Approach	107	359	86	552
	Departure	107	359	86	552
	Total	214	718	172	1,104

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Table C-3- Existing With Project Volumes

	AM Peak Hour			
	Existing Background Volumes	OY School		Existing WP Volumes
		Drop-Off Trips	Parking Trips	
3 Damien Avenue/Project Driveway 2				
NBL	0	0	0	0
NBT	59	166	0	225
NBR	0	0	20	20
SBL	0	0	26	26
SBT	54	121	60	235
SBR	0	0	0	0
EBL	0	0	0	0
EBT	0	0	0	0
EBR	0	0	0	0
WBL	0	0	0	0
WBT	0	0	0	0
WBR	0	0	0	0
North Leg				
Approach	54	121	86	261
Departure	59	166	0	225
Total	113	287	86	486
South Leg				
Approach	59	166	20	245
Departure	54	121	60	235
Total	113	287	80	480
East Leg				
Approach	0	0	0	0
Departure	0	0	46	46
Total	0	0	46	46
West Leg				
Approach	0	0	0	0
Departure	0	0	0	0
Total	0	0	0	0
Total Approaches				
Approach	113	287	106	506
Departure	113	287	106	506
Total	226	574	212	1,012

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Table C-3- Existing With Project Volumes

	AM Peak Hour			
	Existing Background Volumes	OY School		Existing WP Volumes
		Drop-Off Trips	Parking Trips	
4 Damien Avenue/ Project Driveway 3				
NBL	0	0	0	0
NBT	59	0	20	79
NBR	0	95	16	111
SBL	0	116	19	135
SBT	51	5	41	97
SBR	0	0	0	0
EBL	0	0	0	0
EBT	0	0	0	0
EBR	0	0	0	0
WBL	0	45	0	45
WBT	0	0	0	0
WBR	0	166	0	166
North Leg				
Approach	51	121	60	232
Departure	59	166	20	245
Total	110	287	80	477
South Leg				
Approach	59	95	36	190
Departure	51	50	41	142
Total	110	145	77	332
East Leg				
Approach	0	211	0	211
Departure	0	211	35	246
Total	0	422	35	457
West Leg				
Approach	0	0	0	0
Departure	0	0	0	0
Total	0	0	0	0
Total Approaches				
Approach	110	427	96	633
Departure	110	427	96	633
Total	220	854	192	1,266

LSA

Table C-3- Existing With Project Volumes

	AM Peak Hour			
	Existing Background Volumes	OY School		Existing WP Volumes
		Drop-Off Trips	Parking Trips	
5 Damien Avenue/Palomares Avenue				
NBL	0	0	0	0
NBT	0	0	0	0
NBR	0	0	0	0
SBL	23	23	41	87
SBT	0	0	0	0
SBR	25	27	0	52
EBL	30	50	18	98
EBT	33	0	16	49
EBR	0	0	0	0
WBL	0	0	0	0
WBT	29	0	0	29
WBR	28	45	18	91
North Leg				
Approach	48	50	41	139
Departure	58	95	36	189
Total	106	145	77	328
South Leg				
Approach	0	0	0	0
Departure	0	0	0	0
Total	0	0	0	0
East Leg				
Approach	57	45	18	120
Departure	56	23	57	136
Total	113	68	75	256
West Leg				
Approach	63	50	34	147
Departure	54	27	0	81
Total	117	77	34	228
Total Approaches				
Approach	168	145	93	406
Departure	168	145	93	406
Total	336	290	186	812

LSA

Table C-3- Existing With Project Volumes

	AM Peak Hour			
	Existing Background Volumes	OY School		Existing WP Volumes
		Drop-Off Trips	Parking Trips	
6 Project Driveway 7/Palomares Avenue				
NBL	0	0	0	0
NBT	0	0	0	0
NBR	0	0	0	0
SBL	0	0	0	0
SBT	0	0	0	0
SBR	0	0	0	0
EBL	0	0	57	57
EBT	56	23	0	79
EBR	0	0	0	0
WBL	0	0	0	0
WBT	57	45	18	120
WBR	0	0	16	16
North Leg				
Approach	0	0	0	0
Departure	0	0	73	73
Total	0	0	73	73
South Leg				
Approach	0	0	0	0
Departure	0	0	0	0
Total	0	0	0	0
East Leg				
Approach	57	45	34	136
Departure	56	23	0	79
Total	113	68	34	215
West Leg				
Approach	56	23	57	136
Departure	57	45	18	120
Total	113	68	75	256
Total Approaches				
Approach	113	68	91	272
Departure	113	68	91	272
Total	226	136	182	544

LSA

Table C-3- Existing With Project Volumes

	AM Peak Hour			
	Existing Background Volumes	OY School		Existing WP Volumes
		Drop-Off Trips	Parking Trips	
7 Sedalia Avenue-Project Driveway 5/Bonita Avenue				
NBL	0	0	0	0
NBT	0	0	0	0
NBR	0	13	0	13
SBL	14	0	0	14
SBT	0	0	1	1
SBR	20	0	0	20
EBL	24	0	0	24
EBT	534	61	6	601
EBR	0	62	51	113
WBL	0	35	27	62
WBT	700	0	0	700
WBR	25	0	0	25
North Leg				
Approach	34	0	1	35
Departure	49	0	0	49
Total	83	0	1	84
South Leg				
Approach	0	13	0	13
Departure	0	97	79	176
Total	0	110	79	189
East Leg				
Approach	725	35	27	787
Departure	548	74	6	628
Total	1,273	109	33	1,415
West Leg				
Approach	558	123	57	738
Departure	720	0	0	720
Total	1,278	123	57	1,458
Total Approaches				
Approach	1,317	171	85	1,573
Departure	1,317	171	85	1,573
Total	2,634	342	170	3,146

LSA

Table C-3- Existing With Project Volumes

	AM Peak Hour			
	Existing Background Volumes	OY School		Existing WP Volumes
		Drop-Off Trips	Parking Trips	
8 Project Driveway 6/Bonita Avenue				
NBL	0	0	0	0
NBT	0	0	0	0
NBR	0	47	0	47
SBL	0	0	0	0
SBT	0	0	0	0
SBR	0	0	0	0
EBL	0	0	0	0
EBT	548	71	0	619
EBR	0	3	6	9
WBL	0	37	31	68
WBT	721	35	27	783
WBR	0	0	0	0
North Leg				
Approach	0	0	0	0
Departure	0	0	0	0
Total	0	0	0	0
South Leg				
Approach	0	47	0	47
Departure	0	40	37	77
Total	0	87	37	124
East Leg				
Approach	721	72	58	851
Departure	548	118	0	666
Total	1,269	190	58	1,517
West Leg				
Approach	548	74	6	628
Departure	721	35	27	783
Total	1,269	109	33	1,411
Total Approaches				
Approach	1,269	193	64	1,526
Departure	1,269	193	64	1,526
Total	2,538	386	128	3,052

LSA

Table C-4- Opening Year without Project Volumes

	AM Peak Hour			
	OY	Existing School		OY
	Background Volumes	Drop-Off Trips	Parking Trips	No Project Volumes
1 Damien Avenue/Bonita Avenue				
NBL	14	59	0	73
NBT	31	121	0	152
NBR	14	58	0	72
SBL	206	24	22	252
SBT	38	85	62	185
SBR	70	0	0	70
EBL	61	0	0	61
EBT	350	41	35	426
EBR	7	14	9	30
WBL	7	17	15	39
WBT	514	0	0	514
WBR	189	0	0	189
North Leg				
Approach	314	109	84	507
Departure	281	121	0	402
Total	595	230	84	909
South Leg				
Approach	59	238	0	297
Departure	52	116	86	254
Total	111	354	86	551
East Leg				
Approach	710	17	15	742
Departure	570	123	57	750
Total	1,280	140	72	1,492
West Leg				
Approach	418	55	44	517
Departure	598	59	0	657
Total	1,016	114	44	1,174
Total Approaches				
Approach	1,501	419	143	2,063
Departure	1,501	419	143	2,063
Total	3,002	838	286	4,126

LSA

Table C-4- Opening Year without Project Volumes

	AM Peak Hour			
	OY Background Volumes	Existing School Drop-Off Trips	Existing School Parking Trips	OY No Project Volumes
2 Damien Avenue/Project Driveway 1				
NBL	0	0	0	0
NBT	61	166	0	227
NBR	0	0	0	0
SBL	0	0	0	0
SBT	52	116	86	254
SBR	0	0	0	0
EBL	0	0	0	0
EBT	0	0	0	0
EBR	0	0	0	0
WBL	0	5	0	5
WBT	0	0	0	0
WBR	0	72	0	72
North Leg				
Approach	52	116	86	254
Departure	61	238	0	299
Total	113	354	86	553
South Leg				
Approach	61	166	0	227
Departure	52	121	86	259
Total	113	287	86	486
East Leg				
Approach	0	77	0	77
Departure	0	0	0	0
Total	0	77	0	77
West Leg				
Approach	0	0	0	0
Departure	0	0	0	0
Total	0	0	0	0
Total Approaches				
Approach	113	359	86	558
Departure	113	359	86	558
Total	226	718	172	1,116

LSA

Table C-4- Opening Year without Project Volumes

	AM Peak Hour			
	OY Background Volumes	Existing School Drop-Off Trips	Existing School Parking Trips	OY No Project Volumes
3 Damien Avenue/Project Driveway 2				
NBL	0	0	0	0
NBT	61	0	0	61
NBR	0	7	4	11
SBL	0	14	8	22
SBT	58	107	78	243
SBR	0	0	0	0
EBL	0	0	0	0
EBT	0	0	0	0
EBR	0	0	0	0
WBL	0	41	0	41
WBT	0	0	0	0
WBR	0	166	0	166
North Leg				
Approach	58	121	86	265
Departure	61	166	0	227
Total	119	287	86	492
South Leg				
Approach	61	7	4	72
Departure	58	148	78	284
Total	119	155	82	356
East Leg				
Approach	0	207	0	207
Departure	0	21	12	33
Total	0	228	12	240
West Leg				
Approach	0	0	0	0
Departure	0	0	0	0
Total	0	0	0	0
Total Approaches				
Approach	119	335	90	544
Departure	119	335	90	544
Total	238	670	180	1,088

LSA

Table C-4- Opening Year without Project Volumes

		AM Peak Hour			
		OY Background Volumes	Existing School Drop-Off Trips	Existing School Parking Trips	OY No Project Volumes
4	**Damien Avenue/ Project Driveway 3**				
NBL		0	0	0	0
NBT		61	7	4	72
NBR		0	88	64	152
SBL		0	102	78	180
SBT		55	46	0	101
SBR		0	0	0	0
EBL		0	0	0	0
EBT		0	0	0	0
EBR		0	0	0	0
WBL		0	4	0	4
WBT		0	0	0	0
WBR		0	0	0	0
North Leg					
	Approach	55	148	78	281
	Departure	61	7	4	72
	Total	116	155	82	353
South Leg					
	Approach	61	95	68	224
	Departure	55	50	0	105
	Total	116	145	68	329
East Leg					
	Approach	0	4	0	4
	Departure	0	190	142	332
	Total	0	194	142	336
West Leg					
	Approach	0	0	0	0
	Departure	0	0	0	0
	Total	0	0	0	0
Total Approaches					
	Approach	116	247	146	509
	Departure	116	247	146	509
	Total	232	494	292	1,018

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Table C-4- Opening Year without Project Volumes

		AM Peak Hour			
		OY	Existing School		OY
		Background Volumes	Drop-Off Trips	Parking Trips	No Project Volumes
5	**Damien Avenue/Palomares Avenue**				
NBL		0	0	0	0
NBT		0	0	0	0
NBR		0	0	0	0
SBL		27	23	0	50
SBT		0	0	0	0
SBR		26	27	0	53
EBL		31	50	34	115
EBT		35	0	0	35
EBR		0	0	0	0
WBL		0	0	0	0
WBT		30	0	0	30
WBR		29	45	34	108
North Leg					
	Approach	53	50	0	103
	Departure	60	95	68	223
	Total	113	145	68	326
South Leg					
	Approach	0	0	0	0
	Departure	0	0	0	0
	Total	0	0	0	0
East Leg					
	Approach	59	45	34	138
	Departure	62	23	0	85
	Total	121	68	34	223
West Leg					
	Approach	66	50	34	150
	Departure	56	27	0	83
	Total	122	77	34	233
Total Approaches					
	Approach	178	145	68	391
	Departure	178	145	68	391
	Total	356	290	136	782

LSA

Table C-4- Opening Year without Project Volumes

	AM Peak Hour			
	OY Background Volumes	Existing School Drop-Off Trips	Existing School Parking Trips	OY No Project Volumes
6 Project Driveway 7/Palomares Avenue				
NBL	0	0	0	0
NBT	0	0	0	0
NBR	0	0	0	0
SBL	0	0	0	0
SBT	0	0	0	0
SBR	0	0	0	0
EBL	0	0	0	0
EBT	61	23	0	84
EBR	0	0	0	0
WBL	0	0	0	0
WBT	59	45	34	138
WBR	0	0	0	0
North Leg				
Approach	0	0	0	0
Departure	0	0	0	0
Total	0	0	0	0
South Leg				
Approach	0	0	0	0
Departure	0	0	0	0
Total	0	0	0	0
East Leg				
Approach	59	45	34	138
Departure	61	23	0	84
Total	120	68	34	222
West Leg				
Approach	61	23	0	84
Departure	59	45	34	138
Total	120	68	34	222
Total Approaches				
Approach	120	68	34	222
Departure	120	68	34	222
Total	240	136	68	444

LSA

Table C-4- Opening Year without Project Volumes

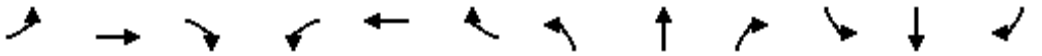
	AM Peak Hour			
	OY Background Volumes	Existing School Drop-Off Trips	Existing School Parking Trips	OY No Project Volumes
7 Sedalia Avenue-Project Driveway 5/Bonita Avenue				
NBL	0	0	0	0
NBT	0	0	0	0
NBR	0	13	0	13
SBL	14	0	0	14
SBT	0	0	1	1
SBR	21	0	0	21
EBL	25	0	0	25
EBT	554	61	6	621
EBR	0	62	51	113
WBL	0	35	27	62
WBT	722	0	0	722
WBR	26	0	0	26
North Leg				
Approach	35	0	1	36
Departure	51	0	0	51
Total	86	0	1	87
South Leg				
Approach	0	13	0	13
Departure	0	97	79	176
Total	0	110	79	189
East Leg				
Approach	748	35	27	810
Departure	568	74	6	648
Total	1,316	109	33	1,458
West Leg				
Approach	579	123	57	759
Departure	743	0	0	743
Total	1,322	123	57	1,502
Total Approaches				
Approach	1,362	171	85	1,618
Departure	1,362	171	85	1,618
Total	2,724	342	170	3,236

LSA

Table C-4- Opening Year without Project Volumes

	AM Peak Hour			
	OY Background Volumes	Existing School Drop-Off Trips	Existing School Parking Trips	OY No Project Volumes
8 Project Driveway 6/Bonita Avenue				
NBL	0	0	0	0
NBT	0	0	0	0
NBR	0	47	0	47
SBL	0	0	0	0
SBT	0	0	0	0
SBR	0	0	0	0
EBL	0	0	0	0
EBT	568	71	0	639
EBR	0	3	6	9
WBL	0	37	31	68
WBT	743	35	27	805
WBR	0	0	0	0
North Leg				
Approach	0	0	0	0
Departure	0	0	0	0
Total	0	0	0	0
South Leg				
Approach	0	47	0	47
Departure	0	40	37	77
Total	0	87	37	124
East Leg				
Approach	743	72	58	873
Departure	568	118	0	686
Total	1,311	190	58	1,559
West Leg				
Approach	568	74	6	648
Departure	743	35	27	805
Total	1,311	109	33	1,453
Total Approaches				
Approach	1,311	193	64	1,568
Departure	1,311	193	64	1,568
Total	2,622	386	128	3,136

ATTACHMENT E: INTERSECTION LOS CALCULATION WORKSHEETS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	411	29	39	497	184	73	151	72	247	182	68
Future Volume (veh/h)	59	411	29	39	497	184	73	151	72	247	182	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	81	563	40	53	681	252	100	207	99	338	249	93
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	218	1154	507	281	1154	507	232	462	200	659	983	829
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.53	0.53	0.53	0.53	0.53	0.53
Sat Flow, veh/h	598	3554	1563	813	3554	1563	299	880	380	1072	1870	1579
Grp Volume(v), veh/h	81	563	40	53	681	252	406	0	0	338	249	93
Grp Sat Flow(s),veh/h/ln	598	1777	1563	813	1777	1563	1559	0	0	1072	1870	1579
Q Serve(g_s), s	7.8	7.6	1.1	3.4	9.6	7.8	2.9	0.0	0.0	6.1	4.4	1.8
Cycle Q Clear(g_c), s	17.5	7.6	1.1	11.0	9.6	7.8	9.0	0.0	0.0	15.1	4.4	1.8
Prop In Lane	1.00		1.00	1.00		1.00	0.25		0.24	1.00		1.00
Lane Grp Cap(c), veh/h	218	1154	507	281	1154	507	894	0	0	659	983	829
V/C Ratio(X)	0.37	0.49	0.08	0.19	0.59	0.50	0.45	0.00	0.00	0.51	0.25	0.11
Avail Cap(c_a), veh/h	219	1155	508	281	1155	508	894	0	0	659	983	829
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.2	16.3	14.0	20.7	16.9	16.3	8.8	0.0	0.0	10.6	7.8	7.2
Incr Delay (d2), s/veh	1.0	0.3	0.1	0.3	0.8	0.8	1.7	0.0	0.0	2.8	0.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	2.9	0.4	0.6	3.8	2.7	3.2	0.0	0.0	3.3	1.7	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.3	16.6	14.1	21.0	17.7	17.1	10.4	0.0	0.0	13.4	8.4	7.5
LnGrp LOS	C	B	B	C	B	B	B	A	A	B	A	A
Approach Vol, veh/h		684			986			406			680	
Approach Delay, s/veh		17.5			17.7			10.4			10.8	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		36.0		24.0		36.0		24.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		31.5		19.5		31.5		19.5				
Max Q Clear Time (g_c+I1), s		11.0		19.5		17.1		13.0				
Green Ext Time (p_c), s		2.9		0.0		3.1		3.2				

Intersection Summary												
HCM 6th Ctrl Delay			14.9									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	72	225	0	0	250
Future Vol, veh/h	5	72	225	0	0	250
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	58	58	58	58	58	58
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	124	388	0	0	431

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	819	388	0	-	-	-
Stage 1	388	-	-	-	-	-
Stage 2	431	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	345	660	-	0	0	-
Stage 1	686	-	-	0	0	-
Stage 2	655	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	345	660	-	-	-	-
Mov Cap-2 Maneuver	345	-	-	-	-	-
Stage 1	686	-	-	-	-	-
Stage 2	655	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	660	-
HCM Lane V/C Ratio	-	0.188	-
HCM Control Delay (s)	-	11.7	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.7	-

Intersection	
Int Delay, s/veh	5.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	41	166	59	11	22	239
Future Vol, veh/h	41	166	59	11	22	239
Conflicting Peds, #/hr	1	7	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	56	56	56	56	56	56
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	73	296	105	20	39	427

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	624	125	0	0	128	0
Stage 1	118	-	-	-	-	-
Stage 2	506	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	449	926	-	-	1458	-
Stage 1	907	-	-	-	-	-
Stage 2	606	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	431	917	-	-	1454	-
Mov Cap-2 Maneuver	431	-	-	-	-	-
Stage 1	873	-	-	-	-	-
Stage 2	605	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.4	0	0.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	750	1454	-
HCM Lane V/C Ratio	-	-	0.493	0.027	-
HCM Control Delay (s)	-	-	14.4	7.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	2.8	0.1	-

Intersection	
Int Delay, s/veh	3.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	0	70	152	180	97
Future Vol, veh/h	4	0	70	152	180	97
Conflicting Peds, #/hr	1	0	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	59	59	59	59	59	59
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	0	119	258	305	164

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1028	253	0	0	382	0
Stage 1	253	-	-	-	-	-
Stage 2	775	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	259	786	-	-	1176	-
Stage 1	789	-	-	-	-	-
Stage 2	454	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	184	782	-	-	1170	-
Mov Cap-2 Maneuver	184	-	-	-	-	-
Stage 1	559	-	-	-	-	-
Stage 2	454	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	25.3	0	6
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	184	1170	-
HCM Lane V/C Ratio	-	-	0.037	0.261	-
HCM Control Delay (s)	-	-	25.3	9.2	0
HCM Lane LOS	-	-	D	A	A
HCM 95th %tile Q(veh)	-	-	0.1	1	-

Intersection	
Intersection Delay, s/veh	9.4
Intersection LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	114	33	29	107	46	52
Future Vol, veh/h	114	33	29	107	46	52
Peak Hour Factor	0.59	0.59	0.59	0.59	0.59	0.59
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	193	56	49	181	78	88
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	10.1	8.7	9.2
HCM LOS	B	A	A

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	78%	0%	47%
Vol Thru, %	22%	21%	0%
Vol Right, %	0%	79%	53%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	147	136	98
LT Vol	114	0	46
Through Vol	33	29	0
RT Vol	0	107	52
Lane Flow Rate	249	231	166
Geometry Grp	1	1	1
Degree of Util (X)	0.328	0.266	0.22
Departure Headway (Hd)	4.734	4.16	4.764
Convergence, Y/N	Yes	Yes	Yes
Cap	757	862	751
Service Time	2.771	2.196	2.808
HCM Lane V/C Ratio	0.329	0.268	0.221
HCM Control Delay	10.1	8.7	9.2
HCM Lane LOS	B	A	A
HCM 95th-tile Q	1.4	1.1	0.8

HCS7 Two-Way Stop-Control Report

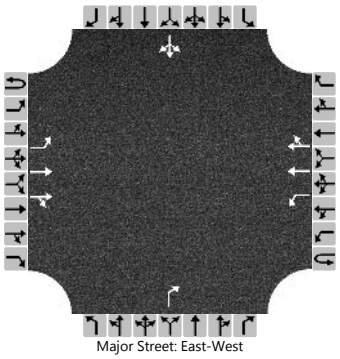
General Information

Analyst	LSA
Agency/Co.	
Date Performed	8/13/2018
Analysis Year	2018
Time Analyzed	Exist AM
Intersection Orientation	East-West
Project Description	Damien High School Master Plan Update

Site Information

Intersection	7
Jurisdiction	City of La Verne
East/West Street	Bonita Avenue
North/South Street	Sedalia Avenue-Dwy 5
Peak Hour Factor	0.78
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	1	2	0		0	0	1		0	1	0
Configuration		L	T	TR		L	T	TR				R			LTR	
Volume (veh/h)	0	24	601	113	0	62	700	25				13		14	1	20
Percent Heavy Vehicles (%)	0	0			0	0						0		0	0	0
Proportion Time Blocked		0.000				0.220						0.220		0.220	0.220	0.000
Percent Grade (%)									0				0			
Right Turn Channelized									No							
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1						6.9		7.5	6.5	6.9
Critical Headway (sec)		4.10				4.10						6.90		7.50	6.50	6.90
Base Follow-Up Headway (sec)		2.2				2.2						3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20						3.30		3.50	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		31				79						17			45	
Capacity, c (veh/h)		744				970						848			270	
v/c Ratio		0.04				0.08						0.02			0.17	
95% Queue Length, Q_{95} (veh)		0.1				0.3						0.1			0.6	
Control Delay (s/veh)		10.0				9.0						9.3			21.0	
Level of Service (LOS)		B				A						A			C	
Approach Delay (s/veh)	0.3				0.7				9.3				21.0			
Approach LOS									A				C			

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HCS7 Two-Way Stop-Control Report

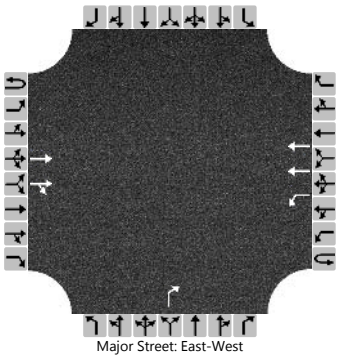
General Information

Analyst	LSA
Agency/Co.	
Date Performed	8/13/2018
Analysis Year	2018
Time Analyzed	Exist AM
Intersection Orientation	East-West
Project Description	Damien High School Master Plan Update

Site Information

Intersection	8
Jurisdiction	City of La Verne
East/West Street	Bonita Avenue
North/South Street	Proj. Dwy 6
Peak Hour Factor	0.77
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	0	1		0	0	0
Configuration			T	TR		L	T					R				
Volume (veh/h)			619	9	0	68	783					47				
Percent Heavy Vehicles (%)					0	0						0				
Proportion Time Blocked						0.220						0.220				
Percent Grade (%)									0							
Right Turn Channelized									No							
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1						6.9				
Critical Headway (sec)						4.10						6.90				
Base Follow-Up Headway (sec)						2.2						3.3				
Follow-Up Headway (sec)						2.20						3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						88						61				
Capacity, c (veh/h)						1080						849				
v/c Ratio						0.08						0.07				
95% Queue Length, Q_{95} (veh)						0.3						0.2				
Control Delay (s/veh)						8.6						9.6				
Level of Service (LOS)						A						A				
Approach Delay (s/veh)					0.7				9.6							
Approach LOS									A							

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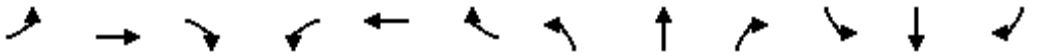


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	411	29	39	497	184	73	151	72	247	182	68
Future Volume (veh/h)	59	411	29	39	497	184	73	151	72	247	182	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	81	563	40	53	681	252	100	207	99	338	249	93
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	218	1154	507	281	1154	507	232	462	200	659	983	829
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.53	0.53	0.53	0.53	0.53	0.53
Sat Flow, veh/h	598	3554	1563	813	3554	1563	299	880	380	1072	1870	1579
Grp Volume(v), veh/h	81	563	40	53	681	252	406	0	0	338	249	93
Grp Sat Flow(s),veh/h/ln	598	1777	1563	813	1777	1563	1559	0	0	1072	1870	1579
Q Serve(g_s), s	7.8	7.6	1.1	3.4	9.6	7.8	2.9	0.0	0.0	6.1	4.4	1.8
Cycle Q Clear(g_c), s	17.5	7.6	1.1	11.0	9.6	7.8	9.0	0.0	0.0	15.1	4.4	1.8
Prop In Lane	1.00		1.00	1.00		1.00	0.25		0.24	1.00		1.00
Lane Grp Cap(c), veh/h	218	1154	507	281	1154	507	894	0	0	659	983	829
V/C Ratio(X)	0.37	0.49	0.08	0.19	0.59	0.50	0.45	0.00	0.00	0.51	0.25	0.11
Avail Cap(c_a), veh/h	219	1155	508	281	1155	508	894	0	0	659	983	829
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.2	16.3	14.0	20.7	16.9	16.3	8.8	0.0	0.0	10.6	7.8	7.2
Incr Delay (d2), s/veh	1.0	0.3	0.1	0.3	0.8	0.8	1.7	0.0	0.0	2.8	0.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	2.9	0.4	0.6	3.8	2.7	3.2	0.0	0.0	3.3	1.7	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.3	16.6	14.1	21.0	17.7	17.1	10.4	0.0	0.0	13.4	8.4	7.5
LnGrp LOS	C	B	B	C	B	B	B	A	A	B	A	A
Approach Vol, veh/h		684			986			406			680	
Approach Delay, s/veh		17.5			17.7			10.4			10.8	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		36.0		24.0		36.0		24.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		31.5		19.5		31.5		19.5				
Max Q Clear Time (g_c+I1), s		11.0		19.5		17.1		13.0				
Green Ext Time (p_c), s		2.9		0.0		3.1		3.2				

Intersection Summary												
HCM 6th Ctrl Delay			14.9									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	1.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	72	225	0	0	250
Future Vol, veh/h	5	72	225	0	0	250
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	58	58	58	58	58	58
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	124	388	0	0	431

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	819	388	0	-	-	-
Stage 1	388	-	-	-	-	-
Stage 2	431	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	345	660	-	0	0	-
Stage 1	686	-	-	0	0	-
Stage 2	655	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	345	660	-	-	-	-
Mov Cap-2 Maneuver	345	-	-	-	-	-
Stage 1	686	-	-	-	-	-
Stage 2	655	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	623	-
HCM Lane V/C Ratio	-	0.213	-
HCM Control Delay (s)	-	12.3	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.8	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	225	20	26	235
Future Vol, veh/h	0	0	225	20	26	235
Conflicting Peds, #/hr	1	7	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	56	56	56	56	56	56
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	402	36	46	420

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	936	430	0	0	441	0
Stage 1	423	-	-	-	-	-
Stage 2	513	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	294	625	-	-	1119	-
Stage 1	661	-	-	-	-	-
Stage 2	601	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	277	619	-	-	1116	-
Mov Cap-2 Maneuver	277	-	-	-	-	-
Stage 1	623	-	-	-	-	-
Stage 2	600	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1116	-
HCM Lane V/C Ratio	-	-	-	0.042	-
HCM Control Delay (s)	-	-	0	8.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	-	0.1	-

Intersection	
Int Delay, s/veh	9.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	45	166	79	111	135	97
Future Vol, veh/h	45	166	79	111	135	97
Conflicting Peds, #/hr	1	0	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	59	59	59	59	59	59
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	76	281	134	188	229	164

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	856	233	0	0	327	0
Stage 1	233	-	-	-	-	-
Stage 2	623	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	328	806	-	-	1233	-
Stage 1	806	-	-	-	-	-
Stage 2	535	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	259	802	-	-	1227	-
Mov Cap-2 Maneuver	259	-	-	-	-	-
Stage 1	638	-	-	-	-	-
Stage 2	534	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.6	0	5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	554	1227	-
HCM Lane V/C Ratio	-	-	0.646	0.186	-
HCM Control Delay (s)	-	-	22.6	8.6	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	4.6	0.7	-

Intersection	
Intersection Delay, s/veh	9.9
Intersection LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	98	49	29	91	87	52
Future Vol, veh/h	98	49	29	91	87	52
Peak Hour Factor	0.59	0.59	0.59	0.59	0.59	0.59
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	166	83	49	154	147	88
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	10.4	8.9	10.2
HCM LOS	B	A	B

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	67%	0%	63%
Vol Thru, %	33%	24%	0%
Vol Right, %	0%	76%	37%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	147	120	139
LT Vol	98	0	87
Through Vol	49	29	0
RT Vol	0	91	52
Lane Flow Rate	249	203	236
Geometry Grp	1	1	1
Degree of Util (X)	0.338	0.247	0.318
Departure Headway (Hd)	4.884	4.378	4.863
Convergence, Y/N	Yes	Yes	Yes
Cap	733	816	735
Service Time	2.935	2.429	2.92
HCM Lane V/C Ratio	0.34	0.249	0.321
HCM Control Delay	10.4	8.9	10.2
HCM Lane LOS	B	A	B
HCM 95th-tile Q	1.5	1	1.4

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	57	79	120	16	0	0
Future Vol, veh/h	57	79	120	16	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	62	86	130	17	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	147	0	-	0	349	139
Stage 1	-	-	-	-	139	-
Stage 2	-	-	-	-	210	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1435	-	-	-	648	909
Stage 1	-	-	-	-	888	-
Stage 2	-	-	-	-	825	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1435	-	-	-	619	909
Mov Cap-2 Maneuver	-	-	-	-	619	-
Stage 1	-	-	-	-	848	-
Stage 2	-	-	-	-	825	-

Approach	EB	WB	SB
HCM Control Delay, s	3.2	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1435	-	-	-	-
HCM Lane V/C Ratio	0.043	-	-	-	-
HCM Control Delay (s)	7.6	0	-	-	0
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	-

HCS7 Two-Way Stop-Control Report

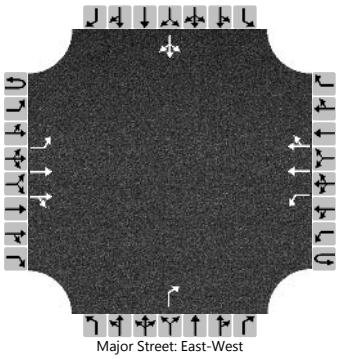
General Information

Analyst	LSA
Agency/Co.	
Date Performed	8/13/2018
Analysis Year	2018
Time Analyzed	Exist WP AM
Intersection Orientation	East-West
Project Description	Damien High School Master Plan Update

Site Information

Intersection	7
Jurisdiction	City of La Verne
East/West Street	Bonita Avenue
North/South Street	Sedalia Avenue-Dwy 5
Peak Hour Factor	0.78
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	1	2	0		0	0	1		0	1	0
Configuration		L	T	TR		L	T	TR				R			LTR	
Volume (veh/h)	0	24	601	113	0	62	700	25				13		14	1	20
Percent Heavy Vehicles (%)	0	0			0	0						0		0	0	0
Proportion Time Blocked		0.000				0.220						0.220		0.220	0.220	0.000
Percent Grade (%)									0				0			
Right Turn Channelized									No							
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1						6.9		7.5	6.5	6.9
Critical Headway (sec)		4.10				4.10						6.90		7.50	6.50	6.90
Base Follow-Up Headway (sec)		2.2				2.2						3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20						3.30		3.50	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		31				79						17			45	
Capacity, c (veh/h)		744				970						848			270	
v/c Ratio		0.04				0.08						0.02			0.17	
95% Queue Length, Q_{95} (veh)		0.1				0.3						0.1			0.6	
Control Delay (s/veh)		10.0				9.0						9.3			21.0	
Level of Service (LOS)		B				A						A			C	
Approach Delay (s/veh)	0.3				0.7				9.3				21.0			
Approach LOS									A				C			

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HCS7 Two-Way Stop-Control Report

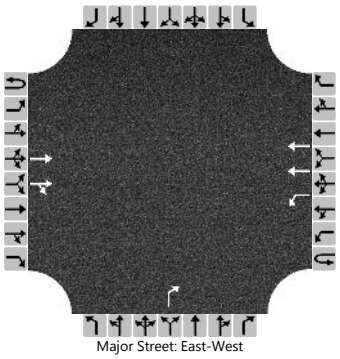
General Information

Analyst	LSA
Agency/Co.	
Date Performed	8/13/2018
Analysis Year	2018
Time Analyzed	Exist WP AM
Intersection Orientation	East-West
Project Description	Damien High School Master Plan Update

Site Information

Intersection	8
Jurisdiction	City of La Verne
East/West Street	Bonita Avenue
North/South Street	Proj. Dwy 6
Peak Hour Factor	0.77
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	0	1		0	0	0
Configuration			T	TR		L	T					R				
Volume (veh/h)			619	9	0	68	783					47				
Percent Heavy Vehicles (%)					0	0						0				
Proportion Time Blocked						0.220						0.220				
Percent Grade (%)									0							
Right Turn Channelized									No							
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1						6.9				
Critical Headway (sec)						4.10						6.90				
Base Follow-Up Headway (sec)						2.2						3.3				
Follow-Up Headway (sec)						2.20						3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						88						61				
Capacity, c (veh/h)						1080						849				
v/c Ratio						0.08						0.07				
95% Queue Length, Q_{95} (veh)						0.3						0.2				
Control Delay (s/veh)						8.6						9.6				
Level of Service (LOS)						A						A				
Approach Delay (s/veh)					0.7				9.6							
Approach LOS									A							

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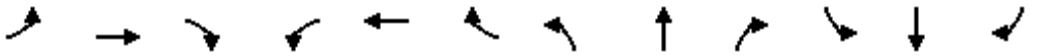


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	426	30	39	514	189	73	152	72	252	185	70
Future Volume (veh/h)	61	426	30	39	514	189	73	152	72	252	185	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	84	584	41	53	704	259	100	208	99	345	253	96
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	215	1173	516	278	1173	516	234	470	202	669	997	842
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.52	0.52	0.52	0.52	0.52	0.52
Sat Flow, veh/h	591	3610	1588	809	3610	1588	303	895	385	1088	1900	1604
Grp Volume(v), veh/h	84	584	41	53	704	259	407	0	0	345	253	96
Grp Sat Flow(s),veh/h/ln	591	1805	1588	809	1805	1588	1582	0	0	1088	1900	1604
Q Serve(g_s), s	8.3	7.8	1.1	3.4	9.8	7.9	2.7	0.0	0.0	6.2	4.4	1.8
Cycle Q Clear(g_c), s	18.1	7.8	1.1	11.2	9.8	7.9	8.8	0.0	0.0	15.0	4.4	1.8
Prop In Lane	1.00		1.00	1.00		1.00	0.25		0.24	1.00		1.00
Lane Grp Cap(c), veh/h	215	1173	516	278	1173	516	905	0	0	669	997	842
V/C Ratio(X)	0.39	0.50	0.08	0.19	0.60	0.50	0.45	0.00	0.00	0.52	0.25	0.11
Avail Cap(c_a), veh/h	215	1173	516	278	1173	516	905	0	0	669	998	842
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.6	16.3	14.0	20.8	17.0	16.3	8.8	0.0	0.0	10.5	7.8	7.2
Incr Delay (d2), s/veh	1.1	0.3	0.1	0.3	0.9	0.8	1.6	0.0	0.0	2.8	0.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	3.0	0.4	0.6	3.9	2.8	3.2	0.0	0.0	3.3	1.7	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.7	16.6	14.1	21.1	17.8	17.1	10.4	0.0	0.0	13.4	8.4	7.5
LnGrp LOS	C	B	B	C	B	B	B	A	A	B	A	A
Approach Vol, veh/h		709			1016			407			694	
Approach Delay, s/veh		17.6			17.8			10.4			10.7	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		36.0		24.0		36.0		24.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		31.5		19.5		31.5		19.5				
Max Q Clear Time (g_c+I1), s		10.8		20.1		17.0		13.2				
Green Ext Time (p_c), s		2.9		0.0		3.1		3.2				

Intersection Summary												
HCM 6th Ctrl Delay			14.9									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	1.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	72	227	0	0	254
Future Vol, veh/h	5	72	227	0	0	254
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	58	58	58	58	58	58
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	9	124	391	0	0	438

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	829	391	0	-	-	-
Stage 1	391	-	-	-	-	-
Stage 2	438	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	-	-
Pot Cap-1 Maneuver	343	662	-	0	0	-
Stage 1	688	-	-	0	0	-
Stage 2	655	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	343	662	-	-	-	-
Mov Cap-2 Maneuver	343	-	-	-	-	-
Stage 1	688	-	-	-	-	-
Stage 2	655	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	624	-
HCM Lane V/C Ratio	-	0.213	-
HCM Control Delay (s)	-	12.3	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.8	-

Intersection	
Int Delay, s/veh	5.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	41	166	61	11	22	243
Future Vol, veh/h	41	166	61	11	22	243
Conflicting Peds, #/hr	1	7	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	56	56	56	56	56	56
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	73	296	109	20	39	434

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	635	129	0	0	132	0
Stage 1	122	-	-	-	-	-
Stage 2	513	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	446	926	-	-	1466	-
Stage 1	908	-	-	-	-	-
Stage 2	605	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	429	917	-	-	1462	-
Mov Cap-2 Maneuver	429	-	-	-	-	-
Stage 1	873	-	-	-	-	-
Stage 2	604	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.4	0	0.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	748	1462	-
HCM Lane V/C Ratio	-	-	0.494	0.027	-
HCM Control Delay (s)	-	-	14.4	7.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	2.8	0.1	-

Intersection	
Int Delay, s/veh	3.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	0	72	152	180	101
Future Vol, veh/h	4	0	72	152	180	101
Conflicting Peds, #/hr	1	0	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	59	59	59	59	59	59
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	7	0	122	258	305	171

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1038	256	0	0	385	0
Stage 1	256	-	-	-	-	-
Stage 2	782	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	258	788	-	-	1185	-
Stage 1	791	-	-	-	-	-
Stage 2	454	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	183	784	-	-	1179	-
Mov Cap-2 Maneuver	183	-	-	-	-	-
Stage 1	562	-	-	-	-	-
Stage 2	454	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	25.4	0	5.8
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	183	1179	-
HCM Lane V/C Ratio	-	-	0.037	0.259	-
HCM Control Delay (s)	-	-	25.4	9.1	0
HCM Lane LOS	-	-	D	A	A
HCM 95th %tile Q(veh)	-	-	0.1	1	-

Intersection	
Intersection Delay, s/veh	9.4
Intersection LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	115	35	30	108	50	53
Future Vol, veh/h	115	35	30	108	50	53
Peak Hour Factor	0.59	0.59	0.59	0.59	0.59	0.59
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	195	59	51	183	85	90
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	10.1	8.7	9.2
HCM LOS	B	A	A

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	77%	0%	49%
Vol Thru, %	23%	22%	0%
Vol Right, %	0%	78%	51%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	150	138	103
LT Vol	115	0	50
Through Vol	35	30	0
RT Vol	0	108	53
Lane Flow Rate	254	234	175
Geometry Grp	1	1	1
Degree of Util (X)	0.333	0.27	0.231
Departure Headway (Hd)	4.721	4.154	4.757
Convergence, Y/N	Yes	Yes	Yes
Cap	760	863	752
Service Time	2.761	2.192	2.803
HCM Lane V/C Ratio	0.334	0.271	0.233
HCM Control Delay	10.1	8.7	9.2
HCM Lane LOS	B	A	A
HCM 95th-tile Q	1.5	1.1	0.9

HCS7 Two-Way Stop-Control Report

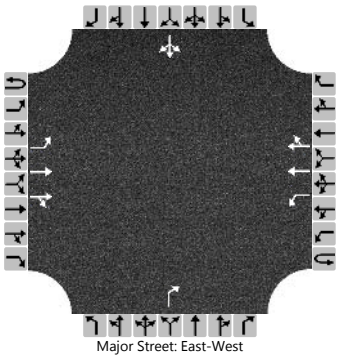
General Information

Analyst	LSA
Agency/Co.	
Date Performed	8/13/2018
Analysis Year	2029
Time Analyzed	OY NP AM
Intersection Orientation	East-West
Project Description	Damien High School Master Plan Update

Site Information

Intersection	7
Jurisdiction	City of La Verne
East/West Street	Bonita Avenue
North/South Street	Sedalia Avenue-Dwy 5
Peak Hour Factor	0.78
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	1	2	0		0	0	1		0	1	0
Configuration		L	T	TR		L	T	TR				R			LTR	
Volume (veh/h)	0	25	621	113	0	62	722	26				13		14	1	21
Percent Heavy Vehicles (%)	0	0			0	0						0		0	0	0
Proportion Time Blocked		0.000				0.220						0.220		0.220	0.220	0.000
Percent Grade (%)									0				0			
Right Turn Channelized									No							
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1						6.9		7.5	6.5	6.9
Critical Headway (sec)		4.10				4.10						6.90		7.50	6.50	6.90
Base Follow-Up Headway (sec)		2.2				2.2						3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20						3.30		3.50	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		32				79						17			46	
Capacity, c (veh/h)		725				943						848			260	
v/c Ratio		0.04				0.08						0.02			0.18	
95% Queue Length, Q_{95} (veh)		0.1				0.3						0.1			0.6	
Control Delay (s/veh)		10.2				9.2						9.3			21.8	
Level of Service (LOS)		B				A						A			C	
Approach Delay (s/veh)	0.3				0.7				9.3				21.8			
Approach LOS									A				C			

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HCS7 Two-Way Stop-Control Report

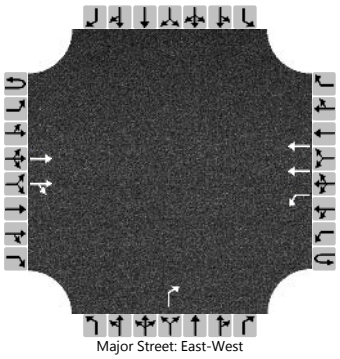
General Information

Analyst	LSA
Agency/Co.	
Date Performed	8/13/2018
Analysis Year	2029
Time Analyzed	OY NP AM
Intersection Orientation	East-West
Project Description	Damien High School Master Plan Update

Site Information

Intersection	8
Jurisdiction	City of La Verne
East/West Street	Bonita Avenue
North/South Street	Proj. Dwy 6
Peak Hour Factor	0.77
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	0	1		0	0	0
Configuration			T	TR		L	T					R				
Volume (veh/h)			639	9	0	68	805					47				
Percent Heavy Vehicles (%)					0	0						0				
Proportion Time Blocked						0.220						0.220				
Percent Grade (%)									0							
Right Turn Channelized									No							
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1						6.9				
Critical Headway (sec)						4.10						6.90				
Base Follow-Up Headway (sec)						2.2						3.3				
Follow-Up Headway (sec)						2.20						3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						88						61				
Capacity, c (veh/h)						1050						849				
v/c Ratio						0.08						0.07				
95% Queue Length, Q_{95} (veh)						0.3						0.2				
Control Delay (s/veh)						8.7						9.6				
Level of Service (LOS)						A						A				
Approach Delay (s/veh)					0.7				9.6							
Approach LOS									A							

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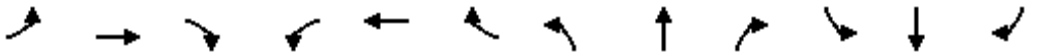


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	426	30	39	514	189	73	152	72	252	185	70
Future Volume (veh/h)	61	426	30	39	514	189	73	152	72	252	185	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	84	584	41	53	704	259	100	208	99	345	253	96
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	215	1173	516	278	1173	516	234	470	202	669	997	842
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.52	0.52	0.52	0.52	0.52	0.52
Sat Flow, veh/h	591	3610	1588	809	3610	1588	303	895	385	1088	1900	1604
Grp Volume(v), veh/h	84	584	41	53	704	259	407	0	0	345	253	96
Grp Sat Flow(s),veh/h/ln	591	1805	1588	809	1805	1588	1582	0	0	1088	1900	1604
Q Serve(g_s), s	8.3	7.8	1.1	3.4	9.8	7.9	2.7	0.0	0.0	6.2	4.4	1.8
Cycle Q Clear(g_c), s	18.1	7.8	1.1	11.2	9.8	7.9	8.8	0.0	0.0	15.0	4.4	1.8
Prop In Lane	1.00		1.00	1.00		1.00	0.25		0.24	1.00		1.00
Lane Grp Cap(c), veh/h	215	1173	516	278	1173	516	905	0	0	669	997	842
V/C Ratio(X)	0.39	0.50	0.08	0.19	0.60	0.50	0.45	0.00	0.00	0.52	0.25	0.11
Avail Cap(c_a), veh/h	215	1173	516	278	1173	516	905	0	0	669	998	842
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.6	16.3	14.0	20.8	17.0	16.3	8.8	0.0	0.0	10.5	7.8	7.2
Incr Delay (d2), s/veh	1.1	0.3	0.1	0.3	0.9	0.8	1.6	0.0	0.0	2.8	0.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	3.0	0.4	0.6	3.9	2.8	3.2	0.0	0.0	3.3	1.7	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.7	16.6	14.1	21.1	17.8	17.1	10.4	0.0	0.0	13.4	8.4	7.5
LnGrp LOS	C	B	B	C	B	B	B	A	A	B	A	A
Approach Vol, veh/h		709			1016			407			694	
Approach Delay, s/veh		17.6			17.8			10.4			10.7	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		36.0		24.0		36.0		24.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		31.5		19.5		31.5		19.5				
Max Q Clear Time (g_c+I1), s		10.8		20.1		17.0		13.2				
Green Ext Time (p_c), s		2.9		0.0		3.1		3.2				

Intersection Summary												
HCM 6th Ctrl Delay			14.9									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	1.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	72	227	0	0	254
Future Vol, veh/h	5	72	227	0	0	254
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	58	58	58	58	58	58
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	9	124	391	0	0	438

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	829	391	0	-	-	-
Stage 1	391	-	-	-	-	-
Stage 2	438	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	-	-
Pot Cap-1 Maneuver	343	662	-	0	0	-
Stage 1	688	-	-	0	0	-
Stage 2	655	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	343	662	-	-	-	-
Mov Cap-2 Maneuver	343	-	-	-	-	-
Stage 1	688	-	-	-	-	-
Stage 2	655	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	624	-
HCM Lane V/C Ratio	-	0.213	-
HCM Control Delay (s)	-	12.3	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.8	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	227	20	26	239
Future Vol, veh/h	0	0	227	20	26	239
Conflicting Peds, #/hr	1	7	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	56	56	56	56	56	56
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	405	36	46	427

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	946	433	0	0	444	0
Stage 1	426	-	-	-	-	-
Stage 2	520	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	293	627	-	-	1127	-
Stage 1	663	-	-	-	-	-
Stage 2	601	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	276	621	-	-	1124	-
Mov Cap-2 Maneuver	276	-	-	-	-	-
Stage 1	625	-	-	-	-	-
Stage 2	600	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1124	-
HCM Lane V/C Ratio	-	-	-	0.041	-
HCM Control Delay (s)	-	-	0	8.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	-	0.1	-

Intersection	
Int Delay, s/veh	9.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	45	166	81	111	135	101
Future Vol, veh/h	45	166	81	111	135	101
Conflicting Peds, #/hr	1	0	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	59	59	59	59	59	59
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	76	281	137	188	229	171

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	866	236	0	0	330	0
Stage 1	236	-	-	-	-	-
Stage 2	630	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	326	808	-	-	1241	-
Stage 1	808	-	-	-	-	-
Stage 2	535	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	258	804	-	-	1235	-
Mov Cap-2 Maneuver	258	-	-	-	-	-
Stage 1	639	-	-	-	-	-
Stage 2	534	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.6	0	4.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	554	1235	-
HCM Lane V/C Ratio	-	-	0.646	0.185	-
HCM Control Delay (s)	-	-	22.6	8.6	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	4.6	0.7	-

Intersection	
Intersection Delay, s/veh	10
Intersection LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	99	51	30	92	91	53
Future Vol, veh/h	99	51	30	92	91	53
Peak Hour Factor	0.59	0.59	0.59	0.59	0.59	0.59
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	168	86	51	156	154	90
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	10.5	8.9	10.3
HCM LOS	B	A	B

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	66%	0%	63%
Vol Thru, %	34%	25%	0%
Vol Right, %	0%	75%	37%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	150	122	144
LT Vol	99	0	91
Through Vol	51	30	0
RT Vol	0	92	53
Lane Flow Rate	254	207	244
Geometry Grp	1	1	1
Degree of Util (X)	0.344	0.251	0.329
Departure Headway (Hd)	4.87	4.37	4.848
Convergence, Y/N	Yes	Yes	Yes
Cap	735	817	737
Service Time	2.926	2.427	2.908
HCM Lane V/C Ratio	0.346	0.253	0.331
HCM Control Delay	10.5	8.9	10.3
HCM Lane LOS	B	A	B
HCM 95th-tile Q	1.5	1	1.4

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	57	84	122	16	0	0
Future Vol, veh/h	57	84	122	16	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	62	91	133	17	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	150	0	-	0	357	142
Stage 1	-	-	-	-	142	-
Stage 2	-	-	-	-	215	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1444	-	-	-	645	911
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	826	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1444	-	-	-	616	911
Mov Cap-2 Maneuver	-	-	-	-	616	-
Stage 1	-	-	-	-	850	-
Stage 2	-	-	-	-	826	-

Approach	EB	WB	SB
HCM Control Delay, s	3.1	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1444	-	-	-	-
HCM Lane V/C Ratio	0.043	-	-	-	-
HCM Control Delay (s)	7.6	0	-	-	0
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	-

HCS7 Two-Way Stop-Control Report

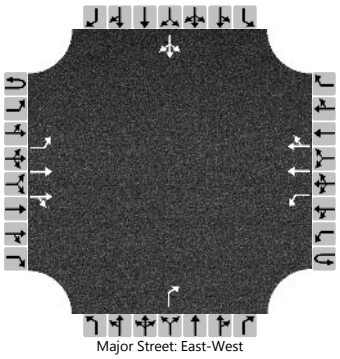
General Information

Analyst	LSA
Agency/Co.	
Date Performed	8/13/2018
Analysis Year	2029
Time Analyzed	OY WP AM
Intersection Orientation	East-West
Project Description	Damien High School Master Plan Update

Site Information

Intersection	7
Jurisdiction	City of La Verne
East/West Street	Bonita Avenue
North/South Street	Sedalia Avenue-Dwy 5
Peak Hour Factor	0.78
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	1	2	0		0	0	1		0	1	0
Configuration		L	T	TR		L	T	TR				R			LTR	
Volume (veh/h)	0	25	621	113	0	62	722	26				13		14	1	21
Percent Heavy Vehicles (%)	0	0			0	0						0		0	0	0
Proportion Time Blocked		0.000				0.220						0.220		0.220	0.220	0.000
Percent Grade (%)									0				0			
Right Turn Channelized									No							
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1						6.9		7.5	6.5	6.9
Critical Headway (sec)		4.10				4.10						6.90		7.50	6.50	6.90
Base Follow-Up Headway (sec)		2.2				2.2						3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20						3.30		3.50	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		32				79						17			46	
Capacity, c (veh/h)		725				943						848			260	
v/c Ratio		0.04				0.08						0.02			0.18	
95% Queue Length, Q_{95} (veh)		0.1				0.3						0.1			0.6	
Control Delay (s/veh)		10.2				9.2						9.3			21.8	
Level of Service (LOS)		B				A						A			C	
Approach Delay (s/veh)	0.3				0.7				9.3				21.8			
Approach LOS									A				C			

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HCS7 Two-Way Stop-Control Report

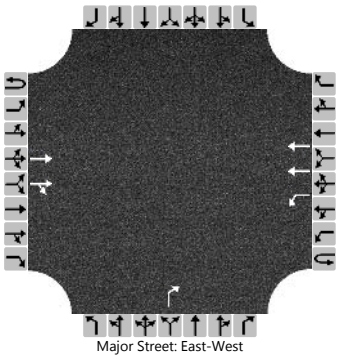
General Information

Analyst	LSA
Agency/Co.	
Date Performed	8/13/2018
Analysis Year	2029
Time Analyzed	OY WP AM
Intersection Orientation	East-West
Project Description	Damien High School Master Plan Update

Site Information

Intersection	8
Jurisdiction	City of La Verne
East/West Street	Bonita Avenue
North/South Street	Proj. Dwy 6
Peak Hour Factor	0.77
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	0	1		0	0	0
Configuration			T	TR		L	T					R				
Volume (veh/h)			639	9	0	68	805					47				
Percent Heavy Vehicles (%)					0	0						0				
Proportion Time Blocked						0.220						0.220				
Percent Grade (%)									0							
Right Turn Channelized									No							
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1						6.9				
Critical Headway (sec)						4.10						6.90				
Base Follow-Up Headway (sec)						2.2						3.3				
Follow-Up Headway (sec)						2.20						3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						88						61				
Capacity, c (veh/h)						1050						849				
v/c Ratio						0.08						0.07				
95% Queue Length, Q_{95} (veh)						0.3						0.2				
Control Delay (s/veh)						8.7						9.6				
Level of Service (LOS)						A						A				
Approach Delay (s/veh)					0.7				9.6							
Approach LOS									A							

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ATTACHMENT F: QUEUING CALCULATION WORKSHEETS

Intersection: 1: Damien Ave & Bonita Ave.

Movement	EB	EB	EB	WB	WB	WB	WB	NB	SB	SB	SB
Directions Served	L	T	T	L	T	T	R	LTR	L	T	R
Maximum Queue (ft)	133	121	64	50	114	151	150	56	111	86	20
Average Queue (ft)	73	72	42	22	86	93	89	38	77	45	4
95th Queue (ft)	132	134	74	54	122	152	168	76	113	94	17
Link Distance (ft)		553	553		393	393		9		298	
Upstream Blk Time (%)								23			
Queuing Penalty (veh)								69			
Storage Bay Dist (ft)	125			180			50		115		115
Storage Blk Time (%)	9	0	4			25	3		0		
Queuing Penalty (veh)	18	0	1			46	8		1		

Intersection: 2: Damien Ave & Proj. Dwy 1

Movement	WB	NB
Directions Served	LR	T
Maximum Queue (ft)	74	96
Average Queue (ft)	60	44
95th Queue (ft)	88	108
Link Distance (ft)	91	398
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Damien Ave & Proj. Dwy 2

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 4: Damien Ave & Proj. Dwy 3

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	82	32
Average Queue (ft)	50	26
95th Queue (ft)	82	36
Link Distance (ft)	110	100
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Palomares Ave. & Damien Ave

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	55	55	54
Average Queue (ft)	36	38	40
95th Queue (ft)	52	74	59
Link Distance (ft)	259	180	552
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Palomares Ave. & Proj. Dwy 6

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 7: Proj. Dwy 4/Sedalia Ave. & Bonita Ave.

Movement	EB	EB	EB	WB	WB	NB	SB
Directions Served	L	T	TR	L	T	R	LTR
Maximum Queue (ft)	31	22	20	32	63	30	31
Average Queue (ft)	25	4	4	23	18	18	25
95th Queue (ft)	45	19	17	43	59	42	45
Link Distance (ft)		393	393		44	117	206
Upstream Blk Time (%)				1	1		
Queuing Penalty (veh)				0	5		
Storage Bay Dist (ft)	75			40			
Storage Blk Time (%)				2	1		
Queuing Penalty (veh)				5	1		

Intersection: 8: Proj. Dwy 5 & Bonita Ave.

Movement	EB	WB	NB
Directions Served	TR	L	R
Maximum Queue (ft)	31	53	30
Average Queue (ft)	6	29	15
95th Queue (ft)	27	57	37
Link Distance (ft)	44		53
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)		100	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 154

Intersection: 1: Damien Ave & Bonita Ave.

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	SB	SB	SB
Directions Served	L	T	T	R	L	T	T	R	LTR	L	T	R
Maximum Queue (ft)	81	196	111	17	53	112	96	75	56	90	66	21
Average Queue (ft)	48	110	64	10	23	90	86	48	49	66	39	12
95th Queue (ft)	93	197	106	23	57	114	103	75	71	91	71	29
Link Distance (ft)		553	553			393	393		9		298	
Upstream Blk Time (%)									36			
Queuing Penalty (veh)									108			
Storage Bay Dist (ft)	125			50	180			50		115		115
Storage Blk Time (%)		4	5				26	3				
Queuing Penalty (veh)		2	1				49	8				

Intersection: 2: Damien Ave & Proj. Dwy 1

Movement	WB	NB	SB
Directions Served	LR	T	T
Maximum Queue (ft)	98	136	56
Average Queue (ft)	59	71	22
95th Queue (ft)	99	134	67
Link Distance (ft)	91	398	9
Upstream Blk Time (%)	4		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Damien Ave & Proj. Dwy 2

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 4: Damien Ave & Proj. Dwy 3

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	103	41	55
Average Queue (ft)	52	8	29
95th Queue (ft)	97	35	58
Link Distance (ft)	110	552	100
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Palomares Ave. & Damien Ave

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	31	55	54
Average Queue (ft)	31	45	40
95th Queue (ft)	32	65	59
Link Distance (ft)	259	180	552
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Palomares Ave. & Proj. Dwy 6

Movement	EB
Directions Served	LT
Maximum Queue (ft)	31
Average Queue (ft)	12
95th Queue (ft)	37
Link Distance (ft)	180
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 7: Proj. Dwy 4/Sedalia Ave. & Bonita Ave.

Movement	EB	WB	WB	NB	SB
Directions Served	L	L	T	R	LTR
Maximum Queue (ft)	53	30	55	30	23
Average Queue (ft)	29	26	11	18	23
95th Queue (ft)	57	35	48	42	23
Link Distance (ft)			44	117	193
Upstream Blk Time (%)		0	0		
Queuing Penalty (veh)		0	1		
Storage Bay Dist (ft)	75	40			
Storage Blk Time (%)		1	0		
Queuing Penalty (veh)		3	0		

Intersection: 8: Proj. Dwy 5 & Bonita Ave.

Movement	WB	WB	NB
Directions Served	L	T	R
Maximum Queue (ft)	70	31	30
Average Queue (ft)	40	6	24
95th Queue (ft)	79	27	43
Link Distance (ft)		482	53
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	100		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 173

Appendix G

Mitigation Monitoring and Reporting Program (On Flash Drive)

MITIGATION MONITORING AND REPORTING PROGRAM
DAMIEN HIGH SCHOOL MASTER PLAN UPDATE PROJECT

This Mitigation Monitoring and Reporting Program has been prepared for use in implementing mitigation for the:

Damien High School Master Plan Update Project
Case No. 61-17CUP

The program has been prepared in compliance with State law and the Mitigated Negative Declaration (MND) prepared for the project by the City of La Verne (City).

The California Environmental Quality Act (CEQA) requires adoption of a reporting or monitoring program for those measures placed on a project to mitigate or avoid significant effects on the environment (Public Resource Code Section 21081.6). The law states the reporting or monitoring program shall be designed to ensure compliance during project implementation.

The monitoring program contains the following elements:

1) The mitigation measures are recorded with the action and procedure necessary to ensure compliance. In some instances, one action may be used to verify implementation of several mitigation measures.

2) A procedure for compliance and verification has been outlined for each action necessary. This procedure designates who will take action, what action will be taken and when, and to whom and when compliance will be reported.

3) The program has been designed to be flexible. As monitoring progresses, changes to compliance procedures may be necessary based upon recommendations by those responsible for the program. As changes are made, new monitoring compliance procedures and records will be developed and incorporated into the program.

This Mitigation Monitoring and Reporting Program includes mitigation identified in the MND.

MITIGATION MONITORING AND RESPONSIBILITIES

As the Lead Agency, the City is responsible for ensuring full compliance with the mitigation measures adopted for the proposed project. The City will monitor and report on all mitigation activities. Mitigation measures will be implemented at different stages of development throughout the project site. In this regard, the responsibilities for implementation have been assigned to the Applicant, Contractor, or a combination thereof. If during the course of project implementation, any of the mitigation measures identified herein cannot be successfully implemented, the City shall be immediately informed, and the City will then inform any affected responsible agencies. The City, in conjunction with any affected responsible agencies, will then determine if modification to the project is required and/or whether alternative mitigation is appropriate.

STANDARD CONDITIONS

Standard Conditions are presented in instances where the proposed project would not create a significant impact but would be required to adhere to regulatory requirements in order to ensure impacts do not become significant. Standard Conditions outline compliance with various federal, State, and/or local acts, laws, rules, regulations, municipal codes, etc.

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MITIGATION MONITORING AND REPORTING PROGRAM CHECKLIST

Project Name: Damien High School Master Plan Update **Applicant: Damien High School**

Date: February 22, 2019

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
Biological Resources					
MITIGATION MEASURE BIO-1: Vegetation removal shall be conducted outside of the nesting season (February 1, or January 1 for raptors, through September 15). If avoidance of the nesting season is not feasible, then a qualified biologist hired by the project applicant and approved by the City of La Verne's Community Development Director or designee shall conduct a nesting bird survey within three days prior to any disturbance of the site, including demolition activities, tree removal, and/or grading. If a special-status species is located during the survey, consultation with the local California Department of Fish and Wildlife (CDFW) representative shall occur to determine what avoidance actions are required. The qualified biologist shall instruct construction personnel on the sensitivity of the area. If an active avian nest is identified, the biologist shall be present to delineate the boundaries of the buffer area and monitor the active nest to ensure that nesting behavior is not adversely affected by construction activities. Construction activities must occur outside of a 100-foot buffer around the active nest. For listed and raptor species, this buffer may be expanded to up to 500 feet from the active nest at the discretion of the qualified biologist in consultation with the City Community Development Director or designee and CDFW. The biologist shall have the authority to temporarily halt construction if it occurs within an established avian	Community Development Director or designee	Prior to the issuance of demolition and grading permits; during demolition and grading activities; upon completion of construction monitoring	Evidence to the City: 1) the required pre-construction surveys have been completed 2) consultation (as applicable) with the California Department of Fish and Wildlife has occurred 3) the establishment and maintenance (as applicable) of appropriate buffer(s) 4) final report of findings submitted to the Community Development Director or designee		Withhold demolition and/or grading permit, and/or issuance of a stop work order

Project Name: Damien High School Master Plan Update **Applicant:** **Damien High School**

Date: **February 22, 2019**

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
buffer or if new nesting activity occurs and a new buffer is required. Encroachment into buffers around active nests shall be conducted only at the discretion of the biologist. Once the young have fledged and left the nest, or the nest otherwise becomes inactive under natural conditions, construction activities within the buffer area may occur or resume. Upon completion of construction monitoring, the biologist shall prepare a report of findings documenting the results of the recommended protective measures described above to document compliance with applicable State and federal laws pertaining to the protection of nesting birds. This measure shall be implemented to the satisfaction of the City Community Development Director or designee.					
CULTURAL RESOURCES					
MITIGATION MEASURE CUL-1: Prior to issuance of demolition, grading, and/or building permits for all development applications prepared pursuant to the Damien High School Master Plan Update, design-level plans shall be reviewed by an architectural historian who meets the Secretary of the Interior's Professional Qualification Standards to ensure compliance with the Secretary of the Interior's Standards for the Treatment of Historic Properties (Rehabilitation) numbers 2 and 9 in accordance with *CEQA Guidelines* Section 15126.4(b)(1). The implementation of this mitigation measure shall be to the satisfaction of the City of La Verne's Community Development Director or designee.	Community Development Director or designee	Prior to the issuance of demolition, grading, and/or building permits	Evidence to the City design-level plans were submitted to an architectural historian who meets the Secretary of the Interior's Professional Qualification Standards for compliance review		Withhold demolition, grading, and/or building permits
MITIGATION MEASURE CUL-2: Prior to issuance of demolition, grading, and/or building permits for all development applications prepared pursuant to the Damien High School Master Plan Update, the City of La	Community Development Director or	Prior to the issuance of demolition, grading, and/or building permits	Evidence to the City the notes specified in MM CUL-2 are included on all construction plans, pages,		Withhold demolition, grading, and/or

Project Name: Damien High School Master Plan Update **Applicant:** **Damien High School**

Date: **February 22, 2019**

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
Verne shall verify the following notes are included on all construction plans, pages, and sheets to ensure compliance with the Secretary of the Interior's Standards for the Treatment of Historic Properties (Rehabilitation) numbers 5, 6, and 7 in accordance with CEQA Guidelines Section 15126.4(b)(1): • Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize the Grace Clements mural and the Bonita Union High School Historic District and its contributing features will be preserved. • Any deteriorated historic features shall be repaired rather than replaced. If the severity of deterioration requires replacement of a distinctive feature, the new feature will match as close as possible the original in design, color, texture, and where possible, materials. Replacement of missing features shall be substantiated by documentary and physical evidence prepared by an architectural historian/historian qualifying under the Secretary of the Interior's Standards for the Treatment of Historic Properties to be provided to the City of La Verne Community Development Director or designee. • Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used. This measure shall be implemented to the satisfaction of the City Community Development Director or designee.	designee		and sheets		building permits
MITIGATION MEASURE CUL-3: All ground-disturbing activities shall be monitored by an archaeological field technician under the supervision of a project	Community Development Director or	During construction or any other ground-	Evidence to the City: 1) a qualified archaeological		Withhold grading permit and/or issuance

Project Name: Damien High School Master Plan Update **Applicant: Damien High School**
Date: February 22, 2019

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
archaeologist who meets the Secretary of the Interior's Professional Qualifications Standards. In the event of prolonged negative results (monitoring has not identified any buried cultural resources), the project archaeologist, in consultation with the grading contractor(s), may scale back monitoring to a schedule approved by the City of La Verne's Community Development Director or designee. In the event archaeological materials are encountered during construction, all ground disturbing activities in the immediate area of the discovery (60-foot radius) shall be halted, an exclusionary buffer shall be established, and the archaeological field technician in coordination with the project archaeologist shall evaluate the resource in accordance with *CEQA Guidelines* Section 15064.5(f)) and **Mitigation Measure CUL-4**. This measure shall be implemented to the satisfaction of the City Community Development Director or designee.	designee	disturbing activities	monitor has been retained to be present during all grading and other significant ground-disturbing; 2) appropriate buffer areas have been established as applicable		of a stop work order
MITIGATION MEASURE CUL-4: If the archaeological field technician in coordination with the project archaeologist determines cultural resources are 50 years of age or older, or resources less than 50 years old but which qualify for exceptional significance pursuant to California Code of Regulations Section 4852, the construction supervisor is obligated to halt work within a 60-foot radius [exclusionary buffer] around the find, and the archaeologist shall evaluate the resource for significance pursuant to *CEQA Guidelines* Section 15064.5. Additionally, the resource(s) shall be recorded on California Department of Parks and Recreation 523 Forms as appropriate. The archaeological field technician shall be empowered to temporarily halt or divert grading equipment to allow	Community Development Director or designee	During construction or any other ground-disturbing activities	Evidence to the City: 1) appropriate buffer areas have been established as applicable; 2) resource(s) recorded on California Department of Parks and Recreation 523 Forms as appropriate; 3) interested parties confer regarding the appropriate disposition of the discovered resource(s); 4) submittal of required		Issuance of a stop work order

Project Name: Damien High School Master Plan Update **Applicant:** **Damien High School**

Date: **February 22, 2019**

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
recording, evaluation, and removal of unearthed resources. If the find is determined to be an historical or unique archaeological resource, contingency funding and a time allotment sufficient to allow for implementation of avoidance measures or appropriate mitigation must be provided. Ground disturbing work may continue on other parts of the project site while historical [or unique archaeological] resource mitigation takes place. The project archaeologist, the project applicant, the City of La Verne's Community Development Director or designee, and interested Native American tribal representatives (i.e., those who have expressed an interest in the project through the Assembly Bill 52 process pursuant to California Public Resources Code §21080.3.2) shall confer regarding the appropriate disposition of the discovered resource(s). Disposition may include curation with a certified scientific or educational repository in accordance with current professional repository standards. However, if an agreement on the disposition of cultural resources cannot be reached, the resource(s) shall be reburied on the project site in an area not subject to further ground disturbance, with appropriate recordation on the California Department of Parks and Recreation 523 Forms. Work shall not resume within the exclusionary buffer without City authorization, and all subsequent ground-disturbing activities shall be monitored at the discretion of the archaeologist. All cultural resources, including the locations from which they are recovered and to which they may be reburied, shall remain confidential pursuant to the California Code of Regulations Section 15120(d). A final report containing the significance and treatment of findings shall be			evaluation and report by a qualified archeologist to the City.		

Project Name: Damien High School Master Plan Update **Applicant:** **Damien High School**

Date: **February 22, 2019**

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
prepared by the project archaeologist and submitted to the City of La Verne's Community Development Director or designee and the appropriate Native American Tribe(s). This measure shall be implemented to the satisfaction of the City of La Verne's Community Development Director or designee.					
MITIGATION MEASURE CUL-5: Prior to issuance of grading permits for all development applications prepared pursuant to the Damien High School Master Plan Update, the City shall verify that the following note is included on all grading plans: **"**If any suspected paleontological resources (fossils) are discovered during ground-disturbing activities, the construction supervisor shall halt work within a 100-foot radius around the find and establish an exclusionary buffer. Construction personnel shall not collect or move any suspected paleontological materials or further disturb any soils within the exclusionary buffer, but construction activity may continue unimpeded on other portions of the project site. Construction activity shall not resume within the exclusionary buffer until a qualified paleontologist (defined as an individual with an M.S. or Ph.D. in paleontology or geology who is experienced with paleontological procedures and techniques, who is knowledgeable in the geology of California, and who has worked as a paleontological mitigation project supervisor for a least one year) can assess the significance of the find. If the paleontologist determines the find is not a paleontological resource, no further evaluation shall be required within the exclusionary buffer, and	Community Development Director or designee	Prior to issuance of grading permits	Evidence to the City that grading plans include instructions in the event a paleontological resource is detected		Withhold grading permit and/or issuance of a stop work order

Project Name: Damien High School Master Plan Update **Applicant: Damien High School**

Date: February 22, 2019

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
construction activity shall be allowed to resume therein. However, if the paleontologist determines the find is a paleontological resource, construction activity shall not resume within the exclusionary buffer, and **Mitigation Measure CUL-6** shall apply." This measure shall be implemented to the satisfaction of the City of La Verne's Community Development Director or designee.					
MITIGATION MEASURE CUL-6: If the qualified paleontologist determines paleontological resources are encountered on the project site, the paleontologist shall prepare a Paleontological Resource Impact Mitigation Plan to be implemented during the balance of ground-disturbing activities proposed as part of the current and any subsequent development application prepared pursuant to the Damien High School Master Plan Update. Implementation of the Paleontological Resource Impact Mitigation Plan shall include (but not be limited to) the following: • Review of project-specific geotechnical report data, with particular regard to location and depth of earthmoving and the rock unit(s) encountered; • Development of a formal agreement between the project applicant and the San Bernardino County Museum, Natural History Museum of Los Angeles County, Western Science Center, San Diego Natural History Museum, or Riverside Municipal Museum for the final disposition and permanent storage and maintenance of any fossil collections and associated data; • The construction schedule, term/schedule of on-site	Community Development Director or designee	During construction	Evidence to the City: 1) preparation of a Paleontological Resource Impact Mitigation Plan 2) appropriate buffer areas have been established 3) formal agreement between the project applicant and appropriate repository for fossils 4) submittal of required evaluation and report by a qualified paleontologist to the City.		Issuance of a stop work order

Project Name: Damien High School Master Plan Update **Applicant:** **Damien High School**

Date: **February 22, 2019**

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
paleontological monitor(s) and the extent of areas and activities to be monitored; • Authority of paleontological monitor(s) to temporarily redirect construction activity in the vicinity of any paleontological discovery; • Procedures for the evaluation and option to recover large fossil specimens and for the evaluation, recovery, and processing of small fossil specimens; • Fossil specimen preparation, identification to the lowest taxonomic level possible, curation, and cataloging; and • A report of findings. The paleontologist shall monitor remaining ground-disturbing activities in native soils at the project site and shall be equipped to record and salvage fossil resources that may be unearthed during construction. The paleontologist shall temporarily halt or divert construction equipment to allow recording and removal of the unearthed resources. Any fossils found shall be offered for curation at a curation facility approved by the City. A report of findings, including, when appropriate, an itemized inventory of recovered specimens and a discussion of their significance, shall be prepared upon completion of the steps outlined above. The report and inventory, when submitted to and approved by the appropriate lead agency, will signify completion of the program to mitigate impacts on paleontological resources. This measure shall be implemented to the satisfaction of the City of La Verne's Community Development Director or designee.					

Project Name: Damien High School Master Plan Update **Applicant:** **Damien High School**

Date: **February 22, 2019**

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
HAZARDS AND HAZARDOUS MATERIALS					
MITIGATION MEASURE HAZ-1: A lead-based materials (LBM) and asbestos-containing materials (ACM) survey shall be completed for renovation or demolition of all structures constructed prior to 1978. If the ACM survey is negative and if the LBM survey reveals lead levels below 0.06 milligram per square centimeter or 600 parts per million pursuant to Code of Federal Regulations Chapter 29, Section 1926.62 and Title 8, California Code of Regulations Section 1532.1, no further survey or remedial work is required. However, if ACM are identified within structures proposed for renovation or demolition, **Mitigation Measure HAZ-2** shall apply. Furthermore, if lead levels at or above 0.06 milligram per square centimeter or 600 parts per million are identified, **Mitigation Measure HAZ-3** shall apply. This measure shall be implemented to the satisfaction of the City of La Verne Community Development Director or designee, and/or Building and Safety Division, or designee.	Community Development Director and/or Building and Safety Division, or designee	Prior to demolition and renovation	Evidence to the City that lead-based materials and asbestos-containing materials surveys are conducted		Withhold demolition and/or building permits
MITIGATION MEASURE HAZ-2: Prior to the renovation or demolition of any structure identified to contain asbestos-containing materials (ACM), all ACM shall be abated from the demolition site. An Asbestos Notification shall be prepared and submitted to the South Coast Air Quality Management District (SCAQMD) for approval before any asbestos abatement may commence. An asbestos report shall be provided to the City prior to the issuance of a demolition permit. The contractor shall provide a construction and demolition plan with disposal tickets from an SCAQMD-approved disposal facility and air clearances prior to final inspection. This measure shall be implemented to the satisfaction of the City of La	Community Development Director and/or Building and Safety Division, or designee	Prior to demolition and renovation	Evidence of an asbestos report/disposal plan and SCAQMD-approved disposal ticket to the City		Withhold demolition and/or building permits

Project Name: Damien High School Master Plan Update **Applicant:** **Damien High School**

Date: **February 22, 2019**

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
Verne Community Development Director or designee, and/or Building and Safety Division, or designee.					
MITIGATION MEASURE HAZ-3: Prior to the renovation or demolition of any structure identified to contain lead-based materials (LBM), all LBM shall be abated from the demolition site. A lead report shall be provided to the City prior to the issuance of a demolition permit. The contractor shall provide a construction and demolition plan with disposal tickets from an SCAQMD-approved disposal facility and air clearances prior to final inspection. This measure shall be implemented to the satisfaction of the City of La Verne Community Development Director or designee, and/or Building and Safety Division, or designee.	Community Development Director and/or Building and Safety Division, or designee	Prior to demolition and renovation	Evidence of an lead-based materials report/disposal plan and SCAQMD-approved disposal ticket to the City		Withhold demolition and/or building permits
NOISE					
MITIGATION MEASURE NOI-1: The construction contractor shall limit all demolition and construction activities to between the hours of 7:00 a.m. and 8:00 p.m. on weekdays and Saturdays. Construction activities are prohibited on Sundays and holidays. In accordance with Chapter 8.20 (Noise Control) of the City of La Verne (City) Municipal Code and Section 12.08.440 (Construction Noise) of the County of Los Angeles Noise Ordinance, the construction contractor shall ensure that construction noise levels do not exceed 75 A-weighted decibels (dBA) maximum instantaneous noise level (L_{max}) for mobile equipment and 60 dBA L_{max} for stationary equipment as measured at the affected buildings of the nearest residential and school sensitive receptors for all development applications prepared pursuant to the Damien High School Master Plan Update. For off-site commercial uses, the noise limits shall be 85 dBA L_{max} for	City Building Official and Community Development Director, or designee.	Prior to and during demolition, grading, and construction	Evidence to the City: 1) the required rules are incorporated into the demolition, grading, and building plans 2) project proponent retains an acoustical engineer and construction relations officer for each development application 3) findings of the noise monitoring shall be reported to the City Building Official and Community Development Director or		Withhold demolition, grading, and/or building permits; issuance of stop work order

Project Name: Damien High School Master Plan Update **Applicant:** **Damien High School**

Date: **February 22, 2019**

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
mobile equipment and 70 dBA L_{max} for stationary equipment. Project-specific sensitive receptors comprise on-site school facilities and off-site residential buildings surrounding the project site, as well as off-site commercial uses west of the project site and the off-site Joan Macy School/David and Margaret Youth and Family Services Organization (school) east of the project site. To verify noise levels during demolition and construction, the project proponent shall retain an acoustical engineer and construction relations officer for each development application prepared pursuant to the Damien High School Master Plan Update. The acoustical engineer shall perform noise level monitoring on the first day of demolition and construction activities and pursuant to a weekly schedule thereafter. The construction relations officer shall serve as a liaison for responding to any community concerns regarding construction noise; the liaison's telephone number(s) shall be prominently displayed at each demolition/construction site for the duration of construction activities. The findings of the noise monitoring shall be reported to the City Building Official and Community Development Director or designee on a weekly basis. If noise levels during construction do not exceed 75 dBA L_{max} for mobile equipment or 60 dBA L_{max} for stationary equipment as measured at the affected buildings of the nearest residential sensitive receptors (85 dBA L_{max} for mobile equipment or 70 dBA L_{max} for stationary equipment at the nearest commercial uses), no further mitigation is required. However, if noise levels exceed 75 dBA L_{max} for mobile equipment or 60 dBA L_{max} for stationary equipment as measured at the affected buildings of the			designee on a weekly basis.		

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nearest residential/school sensitive receptors (85 dBA L_{max} for mobile equipment or 70 dBA L_{max} for stationary equipment at the nearest commercial uses), the City Building Official and Community Development Director or designee must be notified immediately and **Mitigation Measure NOI-2** shall apply. This measure shall be implemented to the satisfaction of the City Building Official and Community Development Director or designee.					
MITIGATION MEASURE NOI-2: If the acoustical engineer's noise level monitoring results for each development application prepared pursuant to the Damien High School Master Plan Update indicate noise levels during demolition and construction exceed 75 dBA L_{max} for mobile equipment or 60 dBA L_{max} for stationary equipment as measured at the affected buildings of the nearest residential/school sensitive receptors (85 dBA L_{max} for mobile equipment or 70 dBA L_{max} for stationary equipment at the nearest commercial uses), the project proponent shall implement a variety of noise attenuating features to reduce noise levels to within the City's standards to the maximum extent feasible. Such noise attenuating features may include but would not be limited to: • A reduction in the number or size of construction equipment to achieve compliant noise levels; • Equipping all construction equipment with appropriate noise-attenuating devices; • Maintaining equipment so that vehicles and their loads are secured from rattling and banging;	City Building Official and Community Development Director, or designee.	During demolition, grading, and construction	Evidence to the City: 1) noise attenuation features and activities are implemented 2) acoustical engineer maintains coordination with the City Building Official, Community Development Director or designee, and Damien High School administrators		Issuance of stop work order

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• Turning equipment off when not in use to avoid unnecessary idling; • Staging of stationary equipment in areas that will create the greatest distance between construction-related noise sources and noise-sensitive receptors; • Erection of temporary insulation barriers around stationary equipment; • Equipping construction vehicles with smart back-up alarms that automatically adjust the sound level of the alarm in response to ambient noise levels, or alternatively, employ human spotters to ensure safety when mobile construction equipment is moving in the reverse direction in lieu of back-up alarms; • Use of hydraulically or electrically powered impact tools (e.g., jackhammers, pavement breakers, and caisson drills) in lieu of pneumatic tools, when feasible, to avoid noise associated with compressed air exhaust from pneumatically powered tools. When use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used. External jackets on the tools themselves shall be used whenever feasible. Quieter procedures, such as use of drills rather than impact tools, shall be used whenever feasible; • Temporary construction of a noise attenuation perimeter wall(s) 14 feet high that would provide a noise level reduction of 14 dBA; and/or • Temporary relocation/reschedule of on-site classroom uses to an area of campus or time at					

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which occupants of structures would be exposed to noise levels not to exceed 75 dBA L_{max} from mobile sources or 60 dBA L_{max} from stationary sources. The acoustical engineer shall review the effectiveness of the noise attenuating features' ability to reduce demolition and construction noise to within 75 dBA L_{max} for mobile equipment and 60 dBA L_{max} for stationary equipment as measured at the affected buildings of the nearest residential/school sensitive receptors (85 dBA L_{max} for mobile equipment or 70 dBA L_{max} for stationary equipment at the nearest commercial uses). Under conditions where the acoustical engineer in coordination with the City Building Official, Community Development Director or designee, and Damien High School administrators determine compliance with the City's noise standards would not be technically feasible, and no other reasonable alternative is available to the proponent, **Mitigation Measure NOI-3** shall be implemented. This measure shall be implemented to the satisfaction of the City of La Verne's Building Official and Community Development Director or designee.					
MITIGATION MEASURE NOI-3: If the acoustical engineer in coordination with the City Building Official and Community Development Director or designee determine compliance with the City's noise standards would not be technically feasible and no other reasonable alternative is available to the project proponent for any development application prepared pursuant to the Damien High School Master Plan Update, the proponent shall apply for a variance from the requirements of the construction noise standards in accordance with Section 8.20.020 (Amendments) of the	City Building Official and Community Development Director, or designee.	During demolition, grading, and construction	Evidence to the City: 1) application for variance from the requirements of the construction noise standards in accordance with Section 8.20.020 (Amendments) of the City's Noise Ordinance and Section 12.08.580 (Variances) of the County of Los Angeles Noise Ordinance		Issuance of stop work order

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City's Noise Ordinance and Section 12.08.580 (Variances) of the County of Los Angeles Noise Ordinance. A noise variance from the requirements of the construction noise standards may be granted by the City of La Verne's Development Review Committee (DRC) for a period of not to exceed two years, subject to such terms, conditions and requirements as may be deemed reasonable. A noise variance may be granted only if the DRC makes one of the following findings: 1. Additional time is necessary for the applicant to alter or modify his activity, operation or noise source to comply with Section 12.08.440 (Construction Noise) of the County of Los Angeles Noise Ordinance; or 2. The activity, operation or noise source cannot feasibly be done in a manner that would comply with the provisions of Section 12.08.440 (Construction Noise) of the County of Los Angeles Noise Ordinance, and no other reasonable alternative is available to the applicant. In granting a variance, the DRC may prescribe any conditions or requirements he/it deems necessary to minimize adverse effects upon the community or the surrounding neighborhood. The project proponent shall be required to implement all such conditions or requirements, as verified through inspection by the City Building Official and/or Community Development Director or designee, or otherwise as specified by the DRC. In granting variances, the DRC shall consider the			2) implementation of all noise attenuation features or activities prescribed by the City Development Review Committee as verified through inspection by the City Building Official and/or Community Development Director or designee, or otherwise as specified by the Development Review Committee		

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magnitude of nuisance caused by the offensive noise, the uses of property within the area of impingement by the noise, operations carried on under existing nonconforming rights or conditional use permits or zone variances, the time factors related to study, design, financing and construction of remedial work, the economic factors related to age and useful life of the equipment, the general public interest, health and welfare, the feasibility of plans submitted for correction, and the effect on the community if the variance was refused. The mitigation measure described above shall be implemented to the satisfaction of the City Building Official and Community Development Director or designee.					
MITIGATION MEASURE NOI-4: During demolition and construction activities, the project proponent shall ensure all contractors prohibit loaded trucks from operating within 20 feet of Spartan Hall and Buildings 100, 200, 300 (north end), and 400. These are buildings identified to be potentially susceptible to vibration damage during demolition and construction of the projects proposed under the Master Plan Update. Temporary on-site signage in the immediate proximity of Spartan Hall and Buildings 100, 200, 300 (north end), and 400 shall be erected notifying construction personnel of the prohibition. The temporary signage shall clearly indicate loaded trucks are prohibited from operating within 20 feet of Spartan Hall and Buildings 100, 200, 300 (north end), and 400, the standard language of which shall be determined through coordination between the construction site contractor, Damien High School representatives, and the Community Development Director or designee. The temporary installation of	City Building Official and Community Development Director, or designee.	During demolition, grading, and construction	Evidence to the City: 1) temporary on-site signage in the immediate proximity of Spartan Hall and Buildings 100, 200, 300 (north end), and 400 is erected 2) Community Development Director or designee review and approve standard language for on-site signage 3) installation of appropriate signage to be verified by an acoustical engineer on the first day of demolition and construction activities and pursuant to a weekly schedule thereafter.		Issuance of stop work order

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appropriate signage shall be verified by an acoustical engineer on the first day of demolition and construction activities and pursuant to a weekly schedule thereafter. This measure shall be implemented to the satisfaction of the City Building Official and Community Development Director or designee.					

STANDARD CONDITIONS

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Biological Resources					
STANDARD CONDITION BIO-1: Unless otherwise superseded by specific preservation and protective measures outlined in a tree report prepared pursuant to Section 18.78.130 of the City Municipal Code, as determined by the city landscape architectural consultant, parks director, or Community Development Director or designee, the following actions shall be implemented in order to ensure the retention and protection of the on-site coast live oak tree prior to 1) demolition of the Student Lunch Area, 2) commencement of any improvements to the northwest parking lot in the vicinity of the 600 Building, and 3) construction of the proposed Student Center: • No grading, construction, or construction-related activities shall occur within the safety zone (i.e., the area within the dripline of a tree and extending therefrom either to a point of at least five feet outside the dripline or to a point 15 feet from the trunk, whichever distance is greater) of a heritage tree or a significant tree as defined by Chapter 18.78 (Preservation, Protection, and Removal of Trees) of the City Municipal Code, including, but not limited to, storage of materials, grade changes, or attachment of wires to or around tree trunks, stems or limbs. • No structure shall be located within the safety zone or within a six-foot radius of the trunk perimeter, whichever is greater, of any heritage tree or	Community Development Director or designee	Prior to: 1) demolition of the Student Lunch Area 2) commencement of any improvements to the northwest parking lot in the vicinity of the 600 Building 3) construction of the proposed Student Center	Evidence to the City of establishment of appropriate buffer around safety zone of any Significant Tree		Withhold demolition, grading, and/or building permit, and/or issuance of a stop work order

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significant tree. A tree with a caliper of 30 inches or more shall require additional space as determined by the city landscape architectural consultant or parks director. • Heritage trees and significant trees shall be shielded from damage during construction by chain link and steel stake fence enclosing the entire safety zone area. All exposed roots shall be inside the fence or barrier, which shall have a minimum height of four feet measured from grade. In all cases where a fence or barrier is to be used around a protected tree, the fence or barrier shall be installed prior to commencement of any development on the site and shall remain in place throughout the construction period. • Branches that could be injured by vehicles or that interfere with construction shall be pruned to the satisfaction of the city landscape architectural consultant or designee. This condition shall be implemented to the satisfaction of the City Community Development Director or designee.					
GEOLOGY AND SOILS					
STANDARD CONDITION GEO-1: Prior to issuance of grading and/or building permits for any development application prepared pursuant to the Damien High School Master Plan Update, the project applicant shall provide evidence to the City for review and approval that on-site structures, features, and facilities have been designed and will be constructed in conformance with applicable provisions of the most current edition of the California Building Code in effect at the time of development	Community Development Director or designee	Prior to the issuance of grading and/or building permits	Evidence to the City design-level plans comply with California Building Code in effect at the time of development application submittal		Withhold grading and/or building permits

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application submittal. This condition shall be implemented to the satisfaction of the City Community Development Director or designee.					
STANDARD CONDITION GEO-2: Prior to issuance of grading and/or building permits for any development application prepared pursuant to the Damien High School Master Plan Update, the project applicant shall provide evidence to the City of La Verne for review and approval that a project-specific, design-level geotechnical/soils/geologic report has been prepared for the proposed development. The report shall consider, but shall not necessarily be limited to, such factors as seismic acceleration; manufactured slope stability (if applicable); liquefaction; compressible, expansive, and corrosive soils; and engineering and construction of occupied and inhabited structures. The findings and recommendations contained in the project-specific, design-level geotechnical/soils/geologic report shall be implemented prior to issuance of grading, building, and/or occupancy permits as applicable. As necessary, the City of La Verne may require additional studies and/or engineering protocols to meet its requirements. This condition shall be implemented to the satisfaction of the City of La Verne's Community Development Director or designee.	Community Development Director or designee	Prior to the issuance of grading, building, and/or occupancy permits	Evidence to the City that design-level geotechnical/soils/geologic report has been prepared for every development application and recommendations are incorporated as applicable		Withhold grading, building, and/or occupancy permits
HAZARDS AND HAZARDOUS MATERIALS					
STANDARD CONDITION HAZ-1: Prior to issuance of building permits for the development of the 400-seat Performing Arts Center, the project applicant shall provide evidence to the City of La Verne that the proposed Master Plan Update and subsequent development application for the 400-seat Performing	Community Development Director or designee	Prior to the issuance of building permits	Evidence to the City that: 1) development application for the 400-seat Performing Arts Center is submitted to the Los Angeles County		Withhold building permit

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Arts Center is submitted to the Los Angeles County Airport Land Use Commission (ALUC) for review and approval in accordance with Sections 1.2.22a (Major Land Use Action) and 1.4.2b (Mandatory Referral of Certain Land Use Actions) of the Brackett Field Airport Land Use Compatibility Plan for indoor assembly facilities with a capacity of at least 300 people. Any project-specific conditions imposed by the ALUC shall be implemented as applicable during design of the Performing Arts Center pursuant to California Public Utilities Code Section 21676 (Airport Land Use Commission) and verified by the La Verne Community Development Director or designee prior to issuance of building permits. This condition shall be implemented to the satisfaction of the City Community Development Director or designee.			Airport Land Use Commission for review and approval 2) any project-specific conditions imposed by the Los Angeles County Airport Land Use Commission is implemented as applicable during design of the Performing Arts Center		
HYDROLOGY AND WATER QUALITY					
STANDARD CONDITION HYD-1: Prior to the issuance of a demolition permit and/or grading permit for any development application prepared pursuant to the Damien High School Master Plan Update, the project proponent shall file and obtain a Notice of Intent (NOI) with the State Water Resources Control Board (SWRCB) in order to be in compliance with the National Pollution Discharge Elimination System (NPDES) General Construction Storm Water Permit for discharge of surface runoff associated with construction activities. Evidence that this has been obtained (i.e., a copy of the Waste Discharger's Identification Number) shall be submitted to the City for coverage under the NPDES General Construction Permit. The NOI shall address the potential for an extended and discontinuous construction period based on funding availability. This condition shall	Public Works Department and/or the Community Development Director, or designee	Prior to the issuance of demolition and grading permits	Evidence of filing of the Notice of Intent with the Regional Water Quality Control Board via submittal of a copy of the Waste Discharger's Identification Number to the City		Withhold demolition and/or grading permit

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be implemented to the satisfaction of the Director of the City of La Verne Public Works Department and the Community Development Director or designee, as appropriate.					
STANDARD CONDITION HYD-2: Prior to the issuance of a demolition permit and/or grading permit for any development application prepared pursuant to the Damien High School Master Plan Update, the project proponent shall submit to and receive approval from the City of La Verne a Storm Water Pollution Prevention Plan (SWPPP), as applicable. The SWPPP shall include a surface water control plan and erosion control plan citing specific measures to control on-site and off-site erosion during the entire demolition, grading, and construction period. In addition, the SWPPP shall emphasize structural and nonstructural Best Management Practices (BMPs) to control sediment and non-visible discharges from the site. The SWPPP shall include inspection forms for routine monitoring of the site during both the demolition and construction phases to ensure National Pollution Discharge Elimination System (NPDES) General Construction Storm Water Permit compliance and that additional BMPs and erosion control measures will be documented in the SWPPP and utilized if necessary. The SWPPP shall address the potential for an extended and discontinuous demolition and construction period based on funding availability. The SWPPP shall be kept on site for the entire duration of project demolition and construction and shall be available to the Los Angeles Regional Water Quality Control Board (LARWQCB) for inspection at any time. BMPs to be implemented may include the following:	Public Works Department and/or the Community Development Director, or designee	Prior to the issuance of demolition and grading permits	Submittal to the City of a Storm Water Pollution Prevention Plan (SWPPP)		Withhold demolition and/or grading permit and/or issuance of a stop work order

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• Sediment discharges from the site may be controlled by the following: sandbags, silt fences, straw wattles and temporary basins (if deemed necessary), and other discharge control devices. The construction and condition of the BMPs shall be periodically inspected during demolition and construction, and repairs shall be made when necessary as required by the SWPPP. • Materials that have the potential to contribute to non-visible pollutants to storm water shall not be placed in drainage ways and must be contained, elevated, and placed in temporary storage containment areas. • All loose piles of soil, silt, clay, sand, debris, and other earthen material shall be protected in a reasonable manner to eliminate any discharge from the site. Stockpiles shall be surrounded by silt fences and covered with plastic tarps. • In addition, the construction contractor shall be responsible for performing and documenting the application of BMPs identified in the SWPPP. Weekly inspections shall be performed on sandbag barriers and other sediment control measures called for in the SWPPP. Monthly reports and inspection logs shall be maintained by the contractor and reviewed by the City of La Verne and the representatives of the LARWQCB. In the event that it is not feasible to implement specific BMPs, the City of La Verne can make a determination that other BMPs will provide equivalent or superior treatment either on- or off-site.					

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This condition shall be implemented to the satisfaction of the Director of the City of La Verne Public Works Department and the Community Development Director or designee, as appropriate.					
STANDARD CONDITION HYD-3: Prior to the issuance of a grading permit for any development application prepared pursuant to the Damien High School Master Plan Update, the project proponent shall submit a Standard Urban Storm Water Mitigation Plan for Municipal Storm Water and Urban Runoff Management Programs in Los Angeles County (SUSMP) to the City of La Verne for review and approval, as applicable. The project shall implement project design features identified in the SUSMP. The SUSMP shall demonstrate that any proposed on-site development plan includes BMPs for source control, pollution prevention, site design, low impact development (LID) implementation, and structural treatment control. Best Management Practices (BMPs) shall be designed and implemented to retain the project site's minimum design capture volume and hydromodification volume to ensure post-development storm water runoff volume or time of concentration does not exceed pre-development storm water runoff. Periodic maintenance of any required infiltration basin and landscaped areas during project occupancy and operation shall be in accordance with the schedule outlined in the SUSMP. This condition shall be implemented to the satisfaction of the Director of the City of La Verne Public Works Department and the Community Development Director or designee, as appropriate.	Public Works Department and/or the Community Development Director, or designee	Prior to the issuance of grading permits	Submittal to City of a Standard Urban Storm Water Mitigation Plan for Municipal Storm Water and Urban Runoff Management Programs in Los Angeles County (SUSMP)		Withhold grading permit and/or issuance of a stop work order